

An Address

ON

THE PATHOLOGY AND TREATMENT OF THE OCULAR COMPLICATIONS OF GONORRHOEAL INFECTION.

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MR. PRESIDENT AND GENTLEMEN.—Before proceeding, let me to express my deep sensibility of the compliment paid by your request that I should undertake the study of ocular manifestations in this general review of our knowledge of gonorrhoeal affections. In order that, within the necessarily brief limits accorded me, I might have sufficient time for the discussion of more modern views on causes and treatment, I have ventured to eliminate references, on the one hand, to such excessively rare conditions as gonorrhoeal pyodermatitis or suppuration of the accessory sinuses of the head, and, on the other hand, to well understood points, such as the clinical evidence of ophthalmia or iritis, as well as the treatment of iritis and corneal ulcer. The points which will be submitted to you are (a) the prophylaxis of ophthalmia neonatorum; (b) the genesis and incubation of gonorrhoeal conjunctivitis and iritis; and (c) the specific treatment of gonorrhoeal conjunctivitis whether attacking the adult or newly born eye.

THE PROPHYLAXIS OF OPHTHALMIA NEONATORUM.

In the history of the campaign against gonococcal invasion signal successes stand out in strong relief. The first the recognition of gonorrhoea as a distinct pathological condition by Ricord in 1831; the second, the discovery of the cococcus by Neisser and Bouchard in 1878; the third, the statement of Koch's postulates by Bumm and later workers; the fourth, the discovery of the influence of silver by Credé in 1880. "Lest we forget" how important that treatment is, let me refer to the statement of Girales:¹ "The loss in the Foundling Hospital of Paris, at a period just before the Franco-German war, was between 80 and 90 per cent. of all births." Years ago it was calculated that there were over 1000 blind people in Europe and from the reports of blind asylums at that time it appeared that "30 to 40 per cent. of the inmates owed their profound misfortune to this, a wholly preventable disease." We must not be led into thinking that its ravages are abating. As Fournier Haab recently remarked, "it is the direct cause of blindness in one-third of all cases, being surpassed in this respect only by small-pox in countries where vaccination is efficiently enforced . . . in spite of the higher standard of hygiene and more competent medical treatment of the present day, the disease defies all efforts to eradicate it on account of the negligence on the part of the persons in attendance not seeking assistance early enough, and because the disease is, and always will be, dangerous in spite of the improved methods of treatment."

The striking value of Credé's method is shown by the results of large maternity charities where it is rigidly enforced. Within the antiseptic period the proportion of ophthalmia neonatorum was about 1 in every 5 cases; immediately after it dropped to about 1 in every 500, at which approximation it remains. Owing mainly to what the newspapers recently termed "our national squeamishness" ophthalmia neonatorum is more prevalent in Great Britain than it is abroad; at any rate, in the German-speaking States. As Dr. E. Herman, a former president of this society, pointed out at a recent discussion at the Obstetrical Society of London, a young practitioner hesitates to employ Credé's drops in any case lest it should be said of him that "he always does something to the baby's eyes which causes them to become inflamed," while it would be impossible for him to justify his action on the ground that gonorrhoeal infection might be present. Popular prejudice is a terrible obstacle to one can sympathise with the difficulty.

Fortunately we now have at our command the organic compounds of silver which have even more prophylactic value than the nitrate without possessing its irritant properties.² In view of the tragic potentialities of the disease their use should surely be compulsory. The cleansing of the eyes should never be delegated to the nurse. A quantity of protargol, which can be very conveniently carried in compressed tablets, is dissolved in boiled and cooled water—it need not be distilled—in sufficient amount to make a fresh 6 per cent. solution. This is poured into the conjunctival sacs and the lids are so separated as to permit the fornices being reached. There is no inflammatory reaction. Collargol is also very well tolerated by the epithelium and so is argyrol, but the last named I have found less active and reliable than either of the former. The whole procedure is a very simple one and we may contrast it with that recently advocated by Stellwag and Wintersteiner,⁴ who irrigate the eyes with a 1 in 1000 solution of permanganate of potassium and daily instil 2 per cent. of nitrate during the whole lying-in period. In justice to them I must explain that their idea is absolutely to stamp out the disease, but the method is too rigorous for universal adoption.

THE GENESIS AND INCUBATION OF GONORRHOEAL CONJUNCTIVITIS AND IRITIS.

Like the urethral affection, we may divide the clinical history of ophthalmia into the several stages of incubation, copious discharge, and ocular gleet. When we compare the incubation period as generally given in text-books we find it is greatly at variance with that of urethritis. Some go so far as to say that the symptoms "usually begin within a few hours after infection:"⁵ whereas in the urethra "it very rarely occurs that the period of incubation is less than two days. Instances recorded as such are generally to be explained as exacerbations of latent chronic gonorrhoea, and not as fresh infections."⁶ The discrepancy is mainly due to the difficulty, often the impossibility, of ascertaining the exact moment of inoculation, at least in adult cases. The rubbing of the lids is an almost unconscious act, while the day and hour of an impure connexion is usually branded on the memory of the sufferer. In point of fact, the actual period has been determined beyond cavil by experimental inoculation. Some years ago it was a legitimate treatment of inveterate trachomatous pannus to inoculate the eye with gonorrhoeal matter, and where that was done the incubation was found to be an invariable period of 60 hours.⁷ It is, however, becoming increasingly clear that we may have a true metastatic or endogenous infection due in some instances to the presence of the organism and in others to that of a toxin. Such cases have recently been described by Swan M. Burnett,⁸ Giani,⁹ and notably by Sidney Stephenson and Rosa Ford.¹⁰ The two last-named collected a remarkable series of cases in which the membranes ruptured within 24 hours of delivery and yet the disease was either present at birth or commenced within 24 hours thereof. In most of their own cases the gonococcus was found, but in some it was absent. Only three weeks ago I had an opportunity of seeing a case, by the courtesy of Dr. W. J. Galt, in which a middle-aged man with antero-posterior urethritis developed a sudden bilateral purulent ophthalmia. No microbes were found in the discharge in spite of the most careful search, whereas myriads were present in the urethral pus. Giani proposes to classify such cases as paragonorrhoeal, in the same sense as Fournier grouped the parasyphilitic lesions. In all cases we find a pre-existing focus of infection from which organisms or toxins can gain entrance to the circulation. In adults it is noteworthy that disease of the posterior urethra is invariably present, while joint affections are commonly associated.

It is in connexion with this probable gonotoxin that I would introduce the question of iritis. Here also we find a well-defined complication, not dependent on the actual presence of the microbe in the lesion, invariably associated with posterior urethritis, and generally with arthroses (Baylac,¹¹ Galezowski,¹² and others). Iritis is, I believe, a

¹ Dauber: *Münchener Medizinische Wochenschrift*, 1904, No. 7.

² Wiener *Klinische Wochenschrift*, 1904, No. 37, p. 583.

³ Hayden: *Veneral Diseases*, 3rd edition (Kimpton, 1902).

⁴ Fournier-Green: *Treatment of Gonorrhoea in the Male*, p. 16 (Baillière, 1906).

⁵ Bellouard: *Thèse de Paris*, 1892.

⁶ Journal of the American Medical Association, Dec. 23rd, 1905.

⁷ Rivista Italiana di Oftalmologia, August, 1905.

⁸ The Ophthalmoscope, April, 1905.

⁹ La Clinique Ophtalmologique, March 25th, 1905.

¹⁰ Recueil d'Ophtalmologie, June, 1905.

commoner complication than is generally supposed. The presence of gonorrhoeal rheumatism is exceedingly likely to cause its being mistaken for ordinary rheumatic iritis, especially as the patient will seldom volunteer a statement about his urethritis, and, in two misguided cases I have seen, actually denied its presence. In women it is, of course, exceedingly difficult to make sure of the diagnosis.

THE TREATMENT OF GONORRHOEAL CONJUNCTIVITIS.

Taking the ordinary case of an infant, commencing on the third day, we find the usual condition: the upper lid red, glossy, oedematous, overhanging the lower; the lids gummed by dried matter, the scarlet villous palpebral conjunctiva and theropy pus. The microscope may be used to clinch the diagnosis, but it is a matter of scientific rather than therapeutic interest. What we at once look at is the cornea, and as to this we have a rule—almost a canon of surgery—"if the cornea is clear a favourable issue may be predicted." The neonatal cornea is exceedingly vulnerable, the more so as there are no tears to protect it and the affected infants are so often syphilitic. At the best, the cornea is not remarkable for vitality. Dependent for its nutrition on lymph diffusing along the interlamellar canals from the marginal vascular loops, any stasis in the circumcorneal vessels will threaten necrosis. In the infant it is thinner as to the substantia propria and yet more so in the epithelium, where, instead of a transitional layer five or six cells thick, it consists of one layer of squames on a single layer of cuboidal cells. Hence we can understand how it is that whilst in the adult the ulcers are usually peripheral and are caused by the retention of pus between the corneal edge and the overhanging ring of chemosed conjunctiva in the infant the ulcer is central from simple devitalisation. That such stasis exists is clear from the researches of Schridde,¹³ Golesecano,¹⁴ and others.

On the question of remedies, beyond a universal admission of the specific value of silver salts, the atmosphere is almost polemic. For some time nitrate of silver was thrown in the shade by the newer organic preparations, whose universal goodness glowed so enticingly in our daily batch of circulars. But it was not long before it came into its own again and we find Th. Saemisch, in the new edition of Graefe and Saemisch's "*Handbuch für Augenheilkunde*," discarding entirely the new compounds and plugging his faith to the old salt. In this he is supported by many of the foremost authorities, notably by Bernheimer,¹⁵ Baillart,¹⁶ and Alvarado.¹⁷ So far the strongest rival of the nitrate is protargol,¹⁸ and Saemisch's attack elicited a vigorous rejoinder from Pfalz¹⁹ who has used protargol exclusively for six years and never required a solution stronger than 10 per cent.

In my own experience I have learned to rely greatly on protargol much more than on any of the others, but one difficulty—and it is indeed a drawback—is the need for its continuous use in a serious case. Whereas with the nitrate one can manage well with three applications daily, with protargol applications have to be made every half hour, day and night, so that the patient, to say nothing of the attendants, is worn out by want of sleep. Apart from this, it is questionable if it is really equal to the nitrate, as witness the statement of Darier and Abadie,²⁰ that whenever the cornea shows signs of necrosis they always resort to the nitrate. In the adult my practice is, firstly, to irrigate the sound eye and then to instil 10 per cent. protargol before putting on the Buller shield, since we have no ground for assuming its freedom from infection. The affected eye is then irrigated thrice daily with 200 cubic centimetres of a solution of nitrate, 1 in 300, in warm distilled water. After each irrigation, applied by a glass undine, I instil two drops of 2 per cent. nitrate and do not neutralise with salt solution. In all adult cases I divide the external canthus. This may seem a heroic proceeding but in view of the extreme danger to sight it is insignificant. One blade of a pair of strong scissors is pushed under the commissure as far as it will go, and the intervening tissues are severed at a single stroke. The outer tarsal ligament is very resilient and will elude the grasp of any but sharp blades. It is remarkable how greatly this facilitates the proper handling of a

case. The cornea is at once removed from pressure the oedematous lids are depleted by the free blood and orbicular spasm is also done away with. Even a valuable is the free access to the retrotarsal fold. Owing to what one would expect, when all swelling has subsided there is very little wound left and blepharoplasty is needed, although that would be a simple matter if it were. During the interval between the irrigations it is usual to employ frequently renewed dressings kept moist and cold a block of ice. As a general surgical measure, the use of cold topical applications is diminishing as a result of increased acquaintance with the pathology of inflammation. This applies with unusual force to ophthalmic surgery where there is *ab initio* a lessened vitality, in the face of which it is illogical to reduce the corneal temperature, where, moreover, owing to the thinness of the intercorneal tissues, the temperature can be influenced to an unusual degree. Warm applications, on the other hand, maintain impaired nutrition and are much more grateful to patient than cold ones. When the stage of ocular gloeitis has been reached it will be found, as in urethral work, simple astringents are of more use than the antiseptics. There are many which may be employed but I have found none superior to the old-fashioned "*lapis divinus*" put on the inner surfaces of the lids.

ON SUBSTANCES FAVOURING AND INHIBITING THE ACTION OF THE HÆMOLYSINS OF BILE AND SERUM.

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INTRODUCTION.

In the course of some previous investigations it noticed that an animal might have marked jaundice with any obvious alterations in the structure of red corpuscles and that the serum of an animal had a hæmosozic effect on the bile of that species of animals from which the serum been taken. Later, we showed that urine prevented action of certain hæmolytic sera and that this hæmosozic effect could not be due to the presence of salts only dialysed urine had the same effect. The present paper concerned with the influence of various substances (urine, sugars) on the hæmolysis produced by various fluids such as bile, and specific sera.

I. EFFECT OF CONCENTRATION OF SALTS ON BILE METHODS USED.

(a) *Preparation of blood.*—A measured quantity of ox blood was washed with normal (9 per 1000) salt solution and centrifuged. The supernatant liquid was decanted and replaced with fresh normal salt solution, and after process had been repeated three times the washed blood corpuscles were suspended in a quantity of normal salt solution equal to the original volume of fluid. When used washed blood was never more than two or three hours old.

(b) *Preparation of standard solution of bile.*—As the hæmolytic properties of bile vary greatly a solution of apparently constant strength was prepared by suspending a measured volume of bullock's blood (prepared as above) in normal salt solution and ascertaining what amount of normal salt solution dissolved one volume of blood in 10 minutes. If, dissolved the blood completely in ten minutes. If, instance, one volume of bile added to nine volumes of (9 per 1000) salt solution dissolved one volume of blood in 10 minutes, then the standard solution used on that day made up of nine cubic centimetres of normal salt solution plus one volume of bile. If two volumes of bile dissolved one volume of blood, the standard solution for the day contained two cubic centimetres of bile and eight volumes of normal salt solution. Such a standard solution (hereafter called standard bile) was prepared every day. Unless otherwise stated 0.1 cubic centimetre of this standard bile was added to each cubic centimetre of fluid in all our experiments.

(c) *Preparation of mixture of blood and bile.*—1 per cent. 10 per cent., or more concentrated solutions of the salts tested were prepared and varying volumes of these solutions were added in test-tubes to distilled water (in such portions that each tube contained exactly one cubic

¹³ Zeitschrift für Augenheilkunde, December, 1905.

¹⁴ Recueil d'Ophthalmologie, July, 1904.

¹⁵ Klinische Monatschrift für Augenheilkunde, 1906, Band I, S. 253.

¹⁶ Bulletin Général de Thérapeutique, August 30th, 1906.

¹⁷ Archiv de Ophthalmologie Hispano-Americano, April, 1906.

¹⁸ Darier, Les Nouveaux Sels d'Argent en Thérapeutique Oculaire, Paris, 1906.

¹⁹ Zeitschrift für Augenheilkunde, March, 1905.

²⁰ Comptes Rendus de la Société d'Ophthalmologie, Paris, December, 1905.

Experiments with sodium chloride.—If one drop of blood added to 0·9 cubic centimetre of normal salt solution rather with 0·1 of standard bile no hæmolysis takes place, but if the blood is suspended in the same volume of a tonic solution of the same salt and the same quantity bile the result is quite different. The following table illustrates this:—

NaCl.		Result.	
0.05 per cent. ..	...	...	60
1.3 "	...	...	++
2.2 "	...	...	D (5)
3.3 "	...	...	I

TABLE II.—Blood Suspended in Sodium Chloride Solutions plus Standard Bile.

	sodium chloride solutions.						
	0.05 %	0.66 %	1.3 %	1.8 %	2.2 %	2.7 %	3.3 %
L.B. 1.0 c.c.	00	00	++	++	D (5)	D (5)	I
" 0.05 c.c.	00	00	00	00	++	D (18)	
" 0.015 c.c.	00	00	00	00	00	00	+++

Action of concentrated solutions of sodium chloride.—The following table shows the action of bile suspended in very concentrated solutions.

	Sodium chloride solutions.		
	1	20%	30%
St. B. 0.02 c.c. ...	+++	I	I
" 0.01 c.c. ...	00	+++	I
" 0.005 c.c. ...	00	++	I

TABLE IV.—BLOOD SUSPENDED IN SOLUTION

Length of solution.	NaCl	NaI	Na ₂ SO ₄	NaBr	NaNO ₃	KCl	KNO ₃
7 per 1000 ...	—	I	I	I	D	I	I
8 " ...	—	I	I	I	+++	D	I
9 " ...	—	I	I	I	++	—	++
1 per cent. ...	—	I	I	I	—	—	—
2 " ...	—	—	I	—	—	—	—
3 " ...	—	—	I	—	—	—	—
4 " ...	D	—	I	—	—	++	—
5 " ...	D	—	I	—	—	D	—
6 " ...	D	—	I	+	+++	I	—
7 " ...	D	I	I	++	I	I	D
8 " ...	I	I	I	+++	I	I	I
9 " ...	I	I	I	D	I	I	I
10 " ...	I	I	I	D	I	I	I
11 " ...	I	I	I	I	I	I	I

A certain volume (0·1 cubic centimetre) of standardised bile, therefore, added to one cubic centimetre of an isotonic or nearly isotonic solution of certain salts (e.g., sulphate of sodium, barium chloride, phosphate of ammonium, nitrate of ammonium, magnesium salts, and chloride calcium) dissolves one drop of blood within half an hour. The same volume of bile mixed with one cubic centimetre of a solution of the other salts (sodium chloride, iodide of potassium, bromide of sodium, nitrate of sodium, chloride of potassium, &c.) dissolves one drop of blood suspended in markedly hypertonic solutions. The activity of bile increases as the solutions become more hypertonic, just as it does in NaCl solutions. The salts of the first group (sulphate of sodium, &c.) also are least active when blood is suspended in isotonic or slightly hypertonic solutions. This can easily be proved by diminishing the quantity of bile. Let us take CaCl₂ as an example.

	Calcium chloride solutions.			
	1%	2%	3%	4%
St. B. 0.1 c.c. ...	I	I	I	I
" 0.05 c.c. .	I	I	I	I
" 0.025 c.c. ...	—	—	—	I

Comparative action of salts.—Certain salts therefore favour the haemolytic properties of bile far more than others. An approximate idea of the favouring properties of each salt is obtained by adding varying volumes of standardised bile to

the on hæmolytic sera is very remarkable and is demonstrated in the following experiment:—

TABLE IX.—The Action of Calcium Chloride on Hæmolytic Sera.

	Serum.	Physiological salt solution.	1% CaCl ₂ solution.	Red blood corpuscles.	Result.
...	0.1	0.3	0.1	1 drop.	+++ (18 h.)
...	"	0.7	0.2	"	+
...	"	0.6	0.3	"	00

As soon as the solution contains 0.03 per cent. of calcium chloride no hæmolysis takes place. This action of calcium chloride on hæmolytic serum, therefore, is exactly the opposite of the action of the same salt on bile and, it may be added incidentally, on some agglutinating sera.

Effect of adding increased quantities of serum to red blood corpuscles suspended in hypertonic salt solutions.—As has been already mentioned, hæmolytic serum (1 per 1000) acting rapidly on blood suspended in a 9 per 1000 solution of sodium chloride does not dissolve blood suspended in a 2 per cent. solution of the same salt. Another series of experiments showed that no hæmolysis takes place as soon as the mixture contained 1.4 per cent. of sodium chloride, even if the volume of serum be increased. If, for instance, instead of 1 per 1000, 1.25 per cent. of serum was added, no hæmolysis took place when the mixture contained 1.4 per cent. of sodium chloride. Even more remarkable is the inhibiting effect of calcium chloride. Whereas a 1 per 1000 solution of a given serum immediately dissolves a given quantity of blood suspended in a 9 per 1000 solution of sodium chloride, a 1 per cent. solution of the same serum is inactive as soon as the mixture contains 1.3 to 0.04 per cent. of calcium chloride.

EFFECT OF URINE ON THE HÆMOLYSIS PRODUCED BY BILE AND SERUM.

From the fact that urine contains a large quantity of salts it was confidently expected that it would have a favouring effect on the hæmolysis produced by bile. The following experiment confirms this view.

TABLE X.—The Effect of Urine on the Hæmolysis produced by Bile and Serum.

	Bile.	Physiological salt solution.	Human urine.	Blood.	Result.
I. (Control)	0.02	1 c.c.	0	1 drop.	+
II. "	"	0.5	0.5	1 "	++
III. "	"	0.4	0.6	1 "	+++
IV. "	"	0.3	0.7	1 "	I
V. "	"	0	1 c.c.	1 "	I

In a further series of experiments half this quantity of the hæmolytic almost completely one drop of blood suspended in human urine, but not the same quantity of blood suspended in physiological salt solution. The favouring effect of urine, however, is not wholly due to the salts contained in it.

Experiment.—50 cubic centimetres of fresh human urine were mixed with 150 cubic centimetres of absolute alcohol and the precipitate was dialysed until all the salts had disappeared. The liquid remaining in the dialyser was precipitated with twice its volume of alcohol. Physiological solution was then added to the precipitate until the total amount of fluid amounted to 25 cubic centimetres. This we shall call D.U.

TABLE XI.—The Effect of Urine Freed from Salts.

	Bile.	Physiological salt solution.	D.U.	Red blood corpuscles.	Result.
I. (Control)	0.2	1 c.c.	0	1 drop.	+
II. "	0	0	1 c.c.	1 "	0
III. "	0.2	0.5	0.5	1 "	I
IV. "	0.2	0	1	1 "	I

Even when half the quantity was added the blood suspended in D.U. was dissolved immediately. Urine, therefore, even when freed from salts exerts a favouring influence on the hæmolysis produced by bile.

Effect of urine on hæmolysis produced by hæmolytic sera.—This question has been fully discussed in our paper published in the *Journal de Pathologie*. Among the conclusions arrived at two are of special interest: First, human urine inhibits the hæmolysis produced by hæmolytic sera prepared by the injection into rabbits of bovine red blood corpuscles; and secondly, this anti-hæmolytic action (or hæmosozic action) is not due to the salts contained in the urine, as dialysed urine is equally effective.

Conclusion.—Human urine favours the hæmolytic action of ox bile but inhibits the hæmolytic action of sera prepared by the injection of bovine red blood corpuscles. In both cases the effect is not wholly due to the presence of salts.

Experiments with various sugars.—If 0.1 of standardised bile be added to different solutions of saccharose, glucose, or lactose, hæmolysis takes place only in highly concentrated solutions of these sugars.

TABLE XII.—The Effect of Sugars on the Hæmolytic Action of Bile.

	Solutions of sugars + St. B. 0.1.												
	3%	4%	5%	6%	7%	8%	9%	10%	20%	30%	40%	50%	
Cane sugar	I	I	+++	++	+	-	-	-	-	-	-	D (5)	
Lactose	I	I	+++	+	-	-	-	+++	-	++	-	-	
Glucose	++	++	-	-	-	-	-	-	-	-	-	D (5)	

Under similar conditions the action of hæmolytic sera is different.

TABLE XIII.—Effect of Sugars on Hæmolytic Action of Sera.

	Solutions of sugars + hæmolytic serum 0.1.																		
	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
Saccharose	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-
Glucose	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-
Lactose	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-

Hæmolytic serum therefore does not act when the solution of sugars is highly concentrated.

Conclusion.—High concentration of sugars favours the action of bile and hinders that of hæmolytic serum.

Alexandria.

THREE STOMACH CASES FROM THE PHYSICIAN'S STANDPOINT: A POST-GRADUATE CLINIC.

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In some quarters it seems to be thought that the time is not far distant when the art of the physician will become obsolete and be replaced by the craft of the surgeon. If this prediction be ever realised the fault will lie at the door of the physician and of the general practitioner. The latter, however much more he may be, ought certainly to be a physician, for to be a successful practitioner, in the only true sense, requires that he should be a careful and, as far as possible, a skilful diagnostician. In no region has a more debatable land arisen than in the domain of gastric disorder, and the cause of this is to be found in the following considerations.

In the very nature of things digestive and gastric disturbance comes into the hands of the practitioner and the physician. It is on them that the responsibility of diagnosis must primarily lie, and it is imperative that they should rise to their extended responsibilities in this department and

¹ These notes have necessarily been extended to make them suitable for publication.

devote themselves to the attainment of skill in the differential diagnosis of abdominal diseases. That a gastric condition may require a surgical operation no more removes it from the domain of the practitioner and the physician than the diagnosis of an empyema lies with the surgeon because he is called in to operate on it. The contrary idea is but an illustration of what we have recently heard a good deal in other affairs—a want of clear thinking. The physician has above all else, and in the first place, to be a diagnostician; and the position assumed in some quarters that he is not to be allowed to use his art in the disorders and diseases of the abdomen is as amusing as it is astounding. There is no doubt that the opening up of abdominal surgery has made it necessary to be more precise, more definite, more detailed in diagnosis than formerly. We are no longer satisfied with such diagnoses as dyspepsia, hæmatemesis, jaundice, colic, intestinal obstruction, or peritonitis; and the physician ought to be the pioneer in that whole realm of diagnosis. It is on him that the onus lies of indicating the paths and methods of differential diagnosis in the abdomen, as he has done in the thorax and in the brain. He is not justified in abandoning his birth-right in internal diagnosis. Whatever difficulties there may be, or appear to be, they have to be faced and solved. Not only ought he to be a pioneer in differential diagnosis, but he ought to be more, for, however much the surgeon's craft may be requisitioned by him, he ought to know as well as the surgeon not only the diseases which require operation but also the kind of operation that may or can be done in the various diseases with which he has to deal.

Surgery is not an occult science; even such questions as the advantages of anterior or posterior gastro-enterostomy are copiously, not to say openly, discussed. The physician knows, or ought to know, that if he diagnoses certain conditions the treatment is gastro-enterostomy, although he leaves it to the surgeon to select the method of operating; and that, if he diagnoses other conditions, they are not worth meddling with unless they can be removed entirely. Sometimes one gets the impression that the physician thinks he ought not even to know what the surgeon will do in any particular case, which is as curious an affectation as if he professed ignorance of how a broken leg or a dislocated shoulder is treated. If the physician diagnoses gall-stones he knows that the surgeon to remove them has to use the knife; the line of incision and whether catgut or silk be used is no part of his responsibility, but it is absurd to affect ignorance of, or want of intelligent appreciation of, the dexterity and skill of the surgeon in carrying out all the details of the operation and the after-healing of the wound. If the physician is confident of his diagnosis he will not usually have any serious difficulty in convincing his surgical confrères that operation is desirable. Difficulty arises more frequently, perhaps, when the surgeon recommends an "exploratory" operation and the physician does not agree with him. The "exploratory" operation tends, indeed, to be so widely applied and advocated that it threatens to be the bane of differential diagnosis. It has its own place, but when it becomes the screen for careless, ill-informed opinion, or for ignorance of methods, it would be difficult to apply too damnatory criticism to it.

If the physician's first duty is diagnosis, his second is to know enough of surgical methods and of surgical successes to understand and appreciate what he recommends his patient to submit to. These are essential for the physician whether he be a family practitioner or a hospital consultant, for to him will assuredly come the vast majority of abdominal cases. The responsibility is laid upon him of making accurate and detailed diagnoses. There is really little difference of opinion as to what treatment ought to be pursued in definite conditions; the whole difficulty lies in a weak diagnosis. In abdominal disease and disorder there has been a sudden new demand upon the physician's skill, and there seems sometimes to be a tendency or a desire to shirk the new responsibility. This is, no doubt, largely due to the idea that as abdominal diagnosis was vague in the past it must remain so, and the champions of "exploratory" operation do nothing directly to remove this idea.

It seems to me that not only for the sake of the physician's reputation, but also for the maintenance of public confidence in surgery, every effort ought to be made to secure increasing accuracy in abdominal diagnosis—that is, in the differentiation of conditions which present a certain surface-resemblance to one another. The responsibility for such advance lies chiefly with the hospital physician, for it is he who has the

done "exploratory" operations will be undertaken more enlightened principles than seem at present vogue. The practitioner and the physician will that the diagnosis of certain conditions imperatively the recommendation of surgical operation. It is mainly a question of whether to operate or accuracy and completeness of diagnosis. "operation is really an acknowledgment of failure, only by regarding it in this light that advance can

I am to show you, in the short time at our disposal, stomach cases, indicating the points in each case on base the diagnosis. They are all cases which, in my ought to be operated on, and I hope to be able so that you will have the opportunity of operations.

CASE 1. *Pyloric narrowing; gastric dilatation*. The patient, a married man, aged 34 years, was the Edinburgh Royal Infirmary on August 29th. He complained of vomiting, of pain in the abdomen and that he had been very bad for the preceding six going into his history it was ascertained that he troubled with his stomach for 15 years—that is, since a youth of 19 years. The general description of ptosis was that he had discomfort, fullness, and in the stomach, coming on usually about an hour. The discomfort was sometimes followed by, and with vomiting. Sometimes the vomiting was at night. vomit when copious, he thought, consisted of what taken for some days. The vomit had sometimes in colour and frothy. 12 years ago he was the infirmary for dilated stomach and for the dition two years later. Since that time he had been off and on with his stomach. During the past year had comparatively little trouble until six weeks admission, when discomfort, pain, and vomiting. The discomfort and vomiting became very severe and, confident, worse than ever before experienced. He flesh and, of course, weight. Constipation had been the bowels only moving once a week if left to. There was no history of melæna or of vomiting. poured out blood. The patient had a fresh complexion very lean.

Such are the essential points in the history of this ailment. Let me show you how the boundaries stomach can be determined without artificially. a method I have not found it necessary to adopt. stomach has not been emptied for 24 hours, so if a favourable condition for our present purpose. If the are placed, as I place my hands, on this patient's body, use them so as to produce a succussion wave in the contents, and by means of this wave I determine the of the lower border of the viscus—it is below the level of the umbilicus at present. You may be able by this method trace the greater curve of the stomach upwards, and the left lower border of the thorax. Then, as regards the position of the fundus you can often find it by percussion—by finding the point at which tympanicity begins. At particular moment this is not available in this, as the stomach is so full, but if you reverse the succussion wave you can feel it quite easily, and that it goes as high as the fifth rib and may even higher. By percussion and succussion I can also determine the position of the lesser curvature in the epigastrium. can thus outline the stomach to you on the surface of the thorax and abdomen. Try this yourselves; the method requires a little practice and it is absolutely reliable. difficulty is made in abdominal diagnosis by all kinds of strange imaginings. The succussion wave here is produced in the stomach and cannot be anywhere else; and, much you may marvel at the size of the organ the outline is absolutely correct. I remove the stomach contents so you may see their character and quantity and we can show you that they contain free hydrochloric acid and can estimate rapidly the total acidity and the amount of hydrochloric acid present.

Remarks.—This is an example of gastric disorder of duration, which came on early in life, and at the comparatively early age of 34 years has made activity impossible. Although the earlier symptoms of disorder cannot be recalled with certainty there are indications that the type was hyperacidity. 12 years ago he was treated for stomach dilatation, but the name applied to the condition at that time, not really help us, for dilatation may be due to a considerable variety of causes, from malignant pyloric stricture

7. That the dilatation cannot have been due to stricture at the pylorus, or, indeed, to permanent any cause, is indicated by the history of freedom from symptoms, one of which periods last 12 months up to six weeks ago.

recurring dilatation are, in my experience, most hyperchlorhydria. The sequence of events is an attack of hyperchlorhydria comes on from one of several causes, and, unless successfully goes on to a moderate measure of dilatation; ie hyperacidity exists so long does the tendency remain; and when the two co-exist the dilatation increases and may become very great. In this case, on more than one occasion, have been great or the patient gives a history of vomiting large of frothy material. During the six weeks of the case there has been very copious emesis, but the patient has not been frothy. He must have recovered serious attacks of great dilatation, for if he had not possibly have had the freedom from symptoms, as we have seen, he evidently experienced. An attack has apparently been the most severe he is most solicitous to have some radical means relieve it. We are all the more ready to fall in because there has been no improvement in spite of emptying of his stomach by the tube, followed by lavage, and of careful dieting. His stomach in proportion of the substances and fluids introduced, and, as is usual in such cases, pours out fluid in addition to the volume of the gastric contents. The stomach is emptied by vomiting or by the tube. The contents are fluid, of the thickness of cream or gruel. In colour, being drab, dark grey, or brownish.

may contain as much as three pints, that amount vomited, and an equal amount has been withdrawn. The total acidity is high and there is abundant chloric acid. The very important question has arisen in this case, Why is the present attack so severe and not amenable to medical measures taken for its relief?

Of course, no doubt as to the existence of a hindrance at the pylorus; without that there would be such marked retention in the stomach of what it. There is no thickening at the pylorus. The absence of such thickening and the presence of abundant chloric acid are against a diagnosis of malignancy. There has never been hæmatemesis, although the stomach contents have almost certainly owed their colour on many occasions to altered blood. There is no definite history of ulcer of the stomach, such as is usually present in considerable abrasion or a chronic ulcer is. The symptoms are such as accompany hyperchlorhydria, and retention. The particular point of elucidation in the present attack is the amount of food and the failure to remove the condition.

From what I have formed is this: The patient had an severe attack of his recurring hyperchlorhydria, followed by dilatation, the dilatation being greater possibly on other occasions. When there is dilatation the stomach sags, and the greater the dilatation the more sagging tends to become from the mechanical pressure of the contents dragging upon it. After a time the stomach is added to dilatation. With ptosis the stomach is usually more or less dragged down also. In this case I have not been able to determine any lowering of the stomach. An explanation of the hindrance to the outflow of gastric contents can be found by supposing that old adhesions at the pylorus which lead to a stricture at the pylorus when dilatation and ptosis come upon the organ. This would explain the periods of freedom from symptoms; it would explain the difficulty when the stomach is full. With this picture of the case before us we are led to operation with hope and confidence. We shall not only do a gastro-enterostomy but to any such adhesions, as we have referred to, which are present. While saying this you, I hope, realise that I do not doubt as to a mechanical difficulty at the pylorus, but believe neither to be due to recent ulcer nor to disease.

After operation.—Mr. F. M. Caird did a gastro-enterostomy on this patient on Sept. 29th. The pylorus was found up under the liver; the stomach was greatly enlarged. There were no adhesions of the pylorus to any parts, as we thought might be found. The stomach at the pylorus was due to an indurated and

apparently fibroid condition of the pyloric ring. This condition of the pylorus and its high position, along with the dilatation and ptosis of the stomach, were amply sufficient to explain the difficulty at the pylorus. There was no evidence of recent or of chronic ulceration. Some of the glands along the inferior aspect of the pylorus were enlarged, but Mr. Caird, while removing one for examination, did not think they suggested malignancy. The main points in the diagnosis were: (1) pyloric obstruction; (2) not due to recent ulceration; (3) not due to malignant growth; (4) but due to old changes around the pylorus. The first three points were confirmed at the operation, while as regards the fourth instead of pyloric adhesions there was an old fibroid stricture which, along with the high position of the pylorus and the ptosis, caused the difficulty.

CASE 2. Duodenal ulcer.—The patient, a married man, aged 28 years, was admitted to the Edinburgh Royal Infirmary on Sept. 21st, 1906. He complained of pain in the epigastrium, all round that part of the right side corresponding to the hepatic region, and in the back. The symptoms complained of had lasted for four weeks. On inquiring into the history, it was ascertained that he had suffered off and on for five years from similar attacks to the present. The attacks lasted for from one to four weeks. He had had three attacks since January last. The attack preceding the present one occurred in July last and lasted for four weeks. After that he was quite well until the present attack began. The pain during the attacks had become worse. When questioned about the pain he was quite definite as to its coming on from one hour to an hour and a half after meals, that it got gradually worse till he took food again, when he obtained relief for about an hour, when it would begin again. The pain was worse after solid food than after liquids. It was now burning in character, and was most severe at points midway between the xiphoid and the umbilicus, and in the angle between the last rib and the spine, but also in the hepatic region between these points. After food he had a sense of weight in the epigastrium. The bowels had been very constipated for five years, and he had had to take laxative medicines all that time. He had vomited a few times—the last occasion was three weeks previous to admission and occurred about an hour after food, the pain being relieved by it. The appetite was poor and he was not inclined to take food. The attack which he had in July left him very weak and thin, and between that and the present attack he did not put on much flesh. He had become much thinner since the present attack began; he had been off work for three weeks and had been in bed during most of the time. He was questioned more directly about vomiting and as to the character of his motions, and the following facts were obtained; and although it was impressed upon him that he must be quite certain of their accuracy he steadfastly adhered to them. He had not vomited blood or dark material during the present attack, but ten days previously his motions were black like tar, although he was taking no medicine save seidlitz powders. He vomited coffee-ground material two months ago and he had vomited similar-looking stuff before. The motions were black a month ago and also in July; in fact, he seemed confident that his motions were often, if not always, black during the attacks. On examination of the abdomen there was a degree of tenderness all over it, with a degree of rigidity of its walls; it was more tender at the spots mentioned above as points to which pain was referred and over the hepatic region. The stomach was not enlarged. A test breakfast showed abundant free hydrochloric acid.

Remarks.—The special points to be noted in this case are that the gastric attacks had lasted for five years and had recently become worse and more frequent. The history of the gastric symptoms points to hyperchlorhydria dyspepsia; there were periods of freedom from trouble, followed by periods during which pain came on from an hour to an hour and a half after food; was relieved by taking food for an hour or longer, but again returned. The patient had had three attacks since January. He had had an attack in July which lasted four weeks; then he had had a period of comfort until the present attack began four weeks before admission. The attacks were sufficiently severe to lay him up and loss of work had become a serious matter with him. He was very confident in asserting that he had frequently had tar-like motions and that he had on some occasions vomited material like coffee-grounds. There had been no melæna and no hæmatemesis since admission. There was no difficulty at the pylorus leading to the attacks.

contents. There was no dilatation or displacement of the stomach. The stomach contents withdrawn by the tube showed abundant free hydrochloric acid. The patient was so very positive about the tar-like motions that his statement must, I consider, be accepted as a clinical fact. The frequency of the attacks, their intractability to weeks of treatment, however imperfect it may have been, and the position and character of the pain, all tend to open one's mind to the acceptance of the patient's assurance regarding the character of his motions and perhaps of his vomit also. If the facts have been correctly obtained, if our evidence is reliable, they point to duodenal ulcer. And if we are to have the courage of our diagnosis, this is also a case for gastro-enterostomy. I am one of those who believe that when you make a diagnosis of duodenal ulcer it is wise to advise operation, especially if, as in this case, there has been recurrence of symptoms. The unsatisfactory point regarding operation is that the ulcer will not be seen, even at the operation, unless it be on the anterior wall; and, in this case, it is probably on the posterior wall. So the surgeon, even though he may accept the diagnosis, does nothing to establish its accuracy. The operation of gastro-enterostomy was performed by Mr. Caird on Sept. 29th. There was no ulceration of the stomach found and no obstruction at the pylorus.

CASE 3. *Malignant disease at the pyloric end of the stomach.*—The patient, a married woman, aged 43 years, was admitted to the Edinburgh Royal Infirmary on August 20th, 1906, complaining of uneasiness in the stomach and vomiting, the symptoms having lasted since June last. The history of her present illness dated from early in that month, when she began to suffer from sensations of uneasiness shortly after taking food, the food often regurgitating, but there was no vomiting. The sensations came on, as a rule, from half an hour to an hour after each meal. She had also been constipated. Before June no history of any kind of gastric or digestive disorder could be obtained by the most direct questioning. She had become gradually worse, treatment giving her no relief. The eructations had increased; vomiting had begun and had become more frequent. As she was rapidly becoming weaker and losing flesh she came to the infirmary. She had noticed some time ago a lump in the upper part of the abdomen. Examination of the alimentary tract showed her gums to be edentulous, the result of complete extraction, and the tongue was flabby with a slight fur. The appetite was fairly good. After meals there was a feeling of tension in the abdomen, and she was conscious of movements and rumblings in its upper part. She felt drowsy and heavy after food. She vomited frequently after admission, the vomit consisting of the food she had taken but little altered, and when she was allowed bread the vomit contained great pieces of undigested bread crust. Ultimately we minced all her food, but that only led to a temporary diminution in the frequency with which she vomited. The vomit never contained free hydrochloric acid, nor did the gastric contents withdrawn by the tube after a meal. There was a pear-shaped lump to the right of the epigastrium, moveable, and not seemingly adherent to deeper structures. The smaller end of the lump was to the right. The stomach was considerably dilated, its inferior border reaching to the umbilicus and the fundus to the fifth rib.

Remarks.—This case differs from the two preceding cases in this, that there is what is commonly called a tumour in the upper part of the abdomen. It is a somewhat pear-shaped swelling, running from above downwards and to the right, the smaller end being its right inferior end. The mass is usually hard, easily felt, and to a small extent moveable. The stomach is dilated, its boundaries being easy to define by succussion and percussion in the manner which I showed you in Case 1, which I repeat here, and which some of you can come forward and confirm. The succussion wave can be felt right up to this mass. A point of clinical interest is that this mass alters in character; it becomes so soft that it requires the expert hand to be sure of its existence. Farther, waves of stomach contraction are often to be seen passing across the upper part of the abdomen and ending in the mass. The mass is the thickened wall of the pyloric end of the stomach—its position, shape, altering thickness, and its relation to the greater and lesser curves of the stomach all confirm this. There have been no hamatemesis, no coffee-ground vomit, and no melaena. There was an entire absence of symptoms until June last, but once they had begun they had a remission in them;

discomfort and vomiting, especially vomiting, have become pronounced. The vomit and the stomach contents removed by the tube have never shown a trace of free hydrochloric acid. That there is pyloric obstruction is shown by the retention of food in the stomach. That the stomach is not larger than it is and that there is no marked fermentation of its contents are due to the ease and regularity with which the stomach has hitherto emptied itself by vomiting when discomfort became considerable. The diagnostic points in the case are the "tumour," which varies in size and hardness and might be said at times to disappear on gastric peristalsis, and vomiting. These three points indicate pyloric obstruction, with marked spasmodic contraction of the pylorus. The two conditions which give rise to pyloric spasm, as marked as it is in this case, and to vomiting, are simple ulcer and malignant growth near the pylorus. There is no history of simple ulcer here nor are the symptoms those of simple ulcer near the pylorus and therefore we conclude that there is malignant growth here. The onset, the course, the present condition, and the absence of free hydrochloric acid all support this. A great part of the difficulty commonly experienced in making differential diagnosis in gastric and abdominal disease is really due to a want of definite knowledge as to the lesions which occur in different viscera, as to the symptoms which are practically inseparable from each. In this case there is no doubt that the "tumour" is the pyloric end of the stomach. I once, after a hurried examination, thought a "tumour" of this nature a displaced kidney, but I speedily rectified my error. The pylorus is the site of the "tumour," and if we consider next its nature we conclude that much of it must be due to muscular contraction of the pyloric wall, for it goes and comes to a considerable extent. This is not uncommon. As to the explanation of the muscular spasm, it is, in my experience, due to irritation caused either by a chronic open ulcer near the pylorus or to an infiltrating cancer in the same region. We exclude simple ulcer, and when this is done there is no escape from the alternative. If we have gone so far we would be sheer affectation were I from this point to play ignorance. If this is malignant there is only one method of treatment of any avail and that is removal. If removal were not possible I would not advise operation, but owing to the mobility of the "tumour" we hope it may be found removable. What particular operation is to be performed belongs entirely to the surgeon. This patient was also operated on by Mr. Caird on Sept. 29th, when a pylorotomy was done followed by a gastro-enterostomy. The pyloric end of the stomach showed much thickening and contraction of the pyloric muscle, while near the pyloric opening there was one of those large circular growths, with a raised fungous margin and an atrophied-looking centre, which we commonly regard as malignant. There was no affection either of the lymph glands or of the liver so far as could be seen.

Sections of the removed pylorus made by Mr. How Wade, one of the assistant pathologists, showed the condition to be an infiltrating cancer.

These three patients made uninterrupted and rapid recoveries and were able to return to their homes in the course of from three to four weeks.

Edinburgh.

A CASE OF PARATYPHOID FEVER IN MAURITIUS.

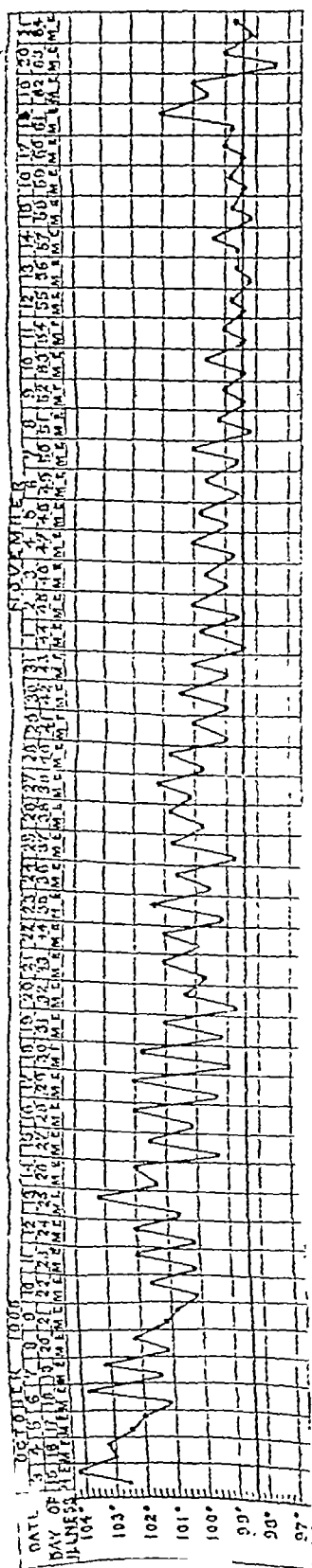
By D. B. SPENCER, L.F.P.S. GLASG., L.S.A.,
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AND

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THE patient, a European, aged 30 years, an assistant surveyor on the Royal Engineers' civil staff at Mauritius, came under our joint care about the end of September, 1905.

History.—The patient left Dublin on August 2nd, 1905, being then in perfect health, and arrived at Mauritius on Sept. 22nd, having had a sea voyage of 52 days. *En route* he disembarked at several places—namely, Southampton, Tenerife, Cape Town, Port Elizabeth, Durban, and Delagoa Bay, staying only for a few hours on shore at the first four places but for five days at Durban and for a full week at Delagoa Bay. He was perfectly well until he arrived at



Severe epistaxis on Oct. 12th and 13th. During the period from Oct. 20th to Nov. 4th inclusive the patient's condition was critical though his temperature was not high. On Nov. 18th and 19th there was a passing rise of temperature, due to stomach derangement.

Delagoa Bay, but when two days out at sea from the bay, and about Sept. 19th, he first felt ill, the symptoms being a feeling of chilliness, loss of appetite, some headache, and general aching in the body, with depression of spirits and low fever. These symptoms persisted more or less to the end of September when he went to bed with high fever and came under our joint care. He had never suffered previously from either enteric or malarial fever and had never been inoculated against enteric fever. There was no case of fever on board ship during the voyage. The patient's family history was good; he belonged to a healthy long-lived family and had scarcely known any illness in his life, except a mild attack of fever in the West Indies, which lasted for three days and which he was certain was not malarial fever.

Progress of the case.—Taking Sept. 19th as the starting point of the disease as explained above, Oct. 3rd would represent the exact date of the beginning of the third week of the disease and from this latter date the temperature chart and other particulars of the case were duly recorded by us.

Third week (Oct. 3rd to 9th): The chief symptoms of this week were high fever of the continued type, as shown in the accompanying temperature chart, with headache and loss of appetite. There was no eruption, the internal organs were normal, and there was some constipation. The mind was clear.

Fourth week (Oct. 10th to 16th): The chief symptoms were high fever of the continued type, a little diarrhoea, severe epistaxis, a dry tongue, and a drowsy expression. The abdomen was nearly normal, there being just a little fulness but without any pain or tenderness anywhere. The mind was perfectly clear.

Fifth week (Oct. 17th to 23rd): During this week the fever persisted, but with a downward tendency during the early part of the week. During the latter part of the week, however, the fever, instead of going down as was expected, took an upward course, and this, in conjunction with some evidence of gastro-hepatic irritation which was then present, pointed to secondary infection of the liver. The liver, therefore, was frequently examined at this stage but nothing abnormal was detected at any time. The tongue was very dry as in the previous week and this was a noticeable feature of the case. The bowels were now regular and normal. The mind was perfectly clear.

Sixth week (Oct. 24th to 30th): The fever during this week, though not high, was a source of some anxiety, as there was nothing to account for it, while the patient was getting rapidly emaciated and debilitated with the exhaustion from the fever and the low diet, consisting of milk and barley water, which was practically all he had throughout his illness.

Seventh week (Oct. 31st to Nov. 6th): The temperatures both morning and evening during this week were near the normal line. Convalescence was established. The general condition was favourable. The temperature reached the normal line for the first time during this week on the forty-fourth day of the disease. It may be stated here that to guard against error the temperature was taken at different hours of the day and night and that it was never normal, showing that the fever was of the continued type.

Eighth week (Nov. 7th to 13th): There was nothing particular to note during this week. The morning temperatures were normal, while there was a slight rise of temperature in the evenings. The general condition was favourable.

Ninth week (Nov. 14th to 20th): There was a slight rise of temperature during this week which was due to a passing derangement of the stomach. Recovery was uninterrupted after this date.

Treatment.—Briefly speaking, an attempt was made at the start, Oct. 3rd, to make the disease abort by flushing the large intestine with tepid water pinked with Condy's fluid and by hypodermic injections of quinine, but the disease had advanced too far for this abortive treatment to be of much use.¹ An expectant treatment was now adopted. Burney

¹ In THE LANCET of Sept. 23rd, 1905, p. 574, Captain F. P. Mackie, I.M.S., in reporting his case of paratyphoid fever has referred to my abortive treatment for this disease and has quoted me as follows: "By this means I have never failed to bring the case to a favourable termination by the end of the second week." In order to prevent any erroneous impression it is, I think, necessary to add as follows: "If the treatment be commenced not later than the fourth or fifth day of the disease." The abortive treatment is, I think, applicable at a very early stage of paratyphoid fever and when so applied the results have been uniformly successful in my hands and I shall be glad to demonstrate the treatment before any medical society or any competent authority I am invited to do so.—D. B. S.

Yeo's quinine and chlorine mixture was given and was well borne. Tepid sponging of the body was of great use. The symptoms of gastro-hepatic irritation were relieved by a few doses of bismuth and soda. Epistaxis was controlled by ergot and calcium chloride. The diet was almost entirely of milk and barley-water in equal parts.

Bacteriological examination of the blood.—Through the kindness of Dr. F. A. Rouget, superintendent of the Civil Hospital at Port Louis, Mauritius, the following report was obtained: "We have tested the samples of blood with fresh cultures of the bacillus typhosus and the bacillus coli communis and in both cases the reaction was negative. The observations were made with cultures 18 hours old and in each case a 1 in 50 dilution was used according to the process generally adopted. In presence of the negative results obtained it was not found necessary to continue the experiments with 1 in 200 and 1 in 500 dilutions. We can give you no further information, as we do not possess cultures of the micrococcus Melitensis or of the Gaertner group."

General remarks.—Although clinically the case was one very similar to a case of true typhoid fever there were some important differences—namely, the sporadic nature of the case, the absence of a marked typhoid state, and the absence of any abdominal symptoms pathognomonic of true typhoid fever, such as would be expected in a case lasting over nine weeks. Among other symptoms, perhaps less important but still valuable aids to a diagnosis of true typhoid fever, we may mention the rose-coloured eruption in successive crops, enlargement of the spleen, and deafness which were all absent in this case. Taking these negative symptoms in conjunction with a negative Vidal test we venture to think that this was a case of paratyphoid fever, while we regret our inability to give some positive evidence as to the causation of the disease owing to the limited means at our disposal for a detailed bacteriological examination of the blood.

ON WHITE-WINE WHEY IN INFANT FEEDING.

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AMONG the many foods which are occasionally of value in infant-feeding sherry whey, or "white-wine whey" as it is sometimes called, must hold a high place, not because it has any particularly large nutritive value but because it combines certain properties which are of great importance under certain conditions. Like the ordinary whey prepared with rennet the whey made with sherry is easily digestible owing to the removal of the milk-curd in the process of preparation; and, like the rennet whey, it has also lost a large proportion of the milk-fat owing to its entanglement in the curd which was strained off. The curd, however, from sherry whey is flocculent and thus unlike the curd *en bloc* produced by rennet; the fat also for this reason is less completely entangled and the proportion remaining in the sherry whey is as high as that in a rennet whey, in which special precaution has been taken to liberate the fat so far as possible by breaking up the curd before straining. Our own analysis of sherry whey, prepared as will be described below, showed proteid 0.45 per cent., consisting almost entirely of the easily digested lactalbumin, fat 0.95 per cent., and there is also present (but not estimated by us) sugar about 5 per cent. The sherry whey therefore is, like rennet whey, a food low in nutritive value, but such as might be expected to agree well where there is difficulty in digesting the stronger preparations of milk. But sherry whey has other properties which do not belong to the ordinary rennet whey. The sherry which is used in its preparation gives to the white-wine whey its peculiar flavour which is said to be due to the presence of essential oils or volatile ethers in the wine, constituents which probably contribute to the carminative effect which is one of the virtues of this food.

Sherry whey has also a markedly acid reaction, and it would seem from the good results of buttermilk and of other preparations in which lactic acid fermentation has been artificially induced in milk that acidity of the food, so far from being harmful, is sometimes beneficial in infant feeding.

Sherry owes its acidity chiefly to tartaric and acetic acids, its curdling action upon milk is due to this acidity, however, vary in their acidity, and it is matter of knowledge that a "drinking sherry" curdles milk readily than does a "cooking sherry." We found that from three to four ounces of drinking sherry required to curdle half a pint of milk, which curdled by two and a half ounces of cooking sherry is a point of some practical importance, for, as we show, the proportion of alcohol in sherry whey the cooking sherry is quite as high as in drinking sherry, not desirable, therefore, to use drinking sherry, only contains more alcohol but must be used in quantity. Actual estimation showed the difference to be as follows:—

	Fixed acid (estimated as tartaric).	V
Drinking sherry (2s. 1d. per bottle) ...	0.348 per cent.	0.077
Cooking sherry (1s. per bottle) ...	0.352	0.081

Sherry whey, prepared as described below with this sherry, showed fixed acid (tartaric) 0.067 per volatile acid (acetic) 0.015 per cent. More, however, than the acidity is the alcohol, which gives food its stimulant effect, and we have made some estimations to determine the exact amount of alcohol which might be conjectured from the mode of preparation. The part of the alcohol contained in the sherry would volatilise during the heating of the food, the amount so lost and the amount remaining in the whey could find no information in any text-book.

The method of preparation which after being fixed upon as the most satisfactory is this: ten ounces of milk were heated until just boiling, then two and a half ounces of cooking sherry were added and heat was again until the mixture began actually to "boil up," it was removed from the fire and allowed to stand for ten minutes; the curd was then strained off through a layer of butter muslin. The alcohol in this whey, estimated by the usual method of distillation and estimation of the specific gravity in the distillate. Estimation also made of the alcohol present in the sherry used in case. Drinking sherry (2s. 1d. per bottle) was found to contain 16.46 per cent. of alcohol by weight. Whey, with this (three ounces of sherry were necessary as no amount would curdle) contained as nearly as possible 1.5 per cent. of alcohol by weight; and as the dilution of sherry by the milk would make the percentage 3 per cent., it is seen that 0.73 per cent. of alcohol was lost in preparation. A cooking sherry, costing 1s. per bottle, contained 14 per cent. of alcohol by weight; whey with (using two and a half ounces as described) contained 2.28 per cent. of alcohol by weight. The dilution of sherry by the milk in this case would have made the portion of alcohol 2.8 per cent.; in this case, 0.52 per cent. of alcohol was lost in the preparation of whey. Another cooking sherry, costing 1s. 3d. per bottle, was found to contain 14 per cent. of alcohol by weight; whey made with two and a half ounces of this sherry, a pint of milk showed 2.28 per cent. of alcohol by weight, one experiment and 2.3 per cent. in another. Here, the loss of alcohol in the preparation of the whey was approximately 0.5 per cent.

For clinical purposes brandy is a convenient comparison in considering the alcoholic value of this whey. An average brandy contains 42.5 per cent. of alcohol by weight, so that if sherry whey be reckoned as containing 1.5 per cent. of alcohol by weight, it is approximately one-eighth (strictly $\frac{1}{8}$) of the strength of brandy; one ounce of sherry whey is therefore, so far as concerned, equivalent to 25.8 minims of brandy. The use of sherry whey, therefore, it must be said, that it is a food which contains a considerable amount of alcohol.

The conditions in which this food is suitable for an infant are those in which only small quantities of food can be tolerated and where a stimulant is necessary. Where there has been much vomiting, with or without diarrhoea, an infant has already been fed for some hours with water or veal broth in small quantities, sherry whey makes a useful step towards the return to milk. Sometimes, indeed, in the acute stage where there is much vomiting a drachm or a few drachms of this food may be retained in the stomach when other foods have been

In cases where owing to difficulty of milk digestion has been chronic vomiting and the infant has become exhausted, feeding for two or three days on small quantities of sherry whey alone, and then on alternate feeds of whey and fully peptonised milk, is sometimes of great benefit. In the common cases where food after food has been refused and the infant has become emaciated and screams with colic and colic after meals sherry whey sometimes has a good effect in reducing the flatulence and colic, and so relieving the child's distress; in such cases it may be given in alternate feeds for several days and then two or three times a day. We have seen excellent results from it also in the case of premature or very feeble newly born infants. A quantity of sherry whey which can be given is determined chiefly by the proportion of alcohol which it contains. It is not intended for prolonged use but we often use it as the only food for a week or ten days and when it is given at alternate feeds only it can be continued if necessary for two or three weeks. To an infant six weeks old a tablespoonful can be given every half hour or three-quarters of an hour and the amount and interval gradually increased until two ounces are taken every two hours.

The quantity, however, as a rule is determined less by the age of the infant than by the general condition and degree of tolerance shown by the stomach. At any period when it is seldom desirable to exceed from two to two and a half ounces of sherry whey at a feed; but in exceptional cases we have given as much as three ounces every two hours to infants about six months old and even four ounces every three hours to an infant 12 months old for two or three days with great benefit. As a general rule it should only be laid down that sherry whey, like any other fluid which contains alcohol, should never be given to infants in any quantity or continued for a longer period than the necessities of the case require.

SCLERODERMIA AND MYOSITIS.¹

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Three years ago I contributed to the *Bristol Medical-Chirurgical Journal*² an account of a case of muscular atrophy with scleroderma, in which the evidence that the changes in the muscle were primary—either of the nature of a progressive atrophy or a dystrophy—was irresistible. In publishing that case four other patients have come under my observation at the Bristol Royal Infirmary whom I wish to provide material for a further study of these conditions and to throw fresh light on their nature. Of recent years, too, other cases have been recorded which make it evident that the associated affections met with in scleroderma are no longer the isolated conundrums which they formerly seemed. From a careful clinical investigation of a number of cases under my own care and from the published records of other observers I think that there is beginning to be collected a considerable amount of evidence that the muscular changes of scleroderma are (together with the skin changes themselves) merely a local manifestation of a general disease, an infective inflammatory affection resembling in many points the rheumatic infection.

Just as in acute rheumatism we are familiar with the usual form of a general shifting synovitis, varied at times by an attack on serous and especially cardiac membranes, manifesting itself sometimes by localised tendinous infiltrations of a nodular type, at others by subcutaneous erythematous inflammation, or again appearing in cerebral form as chorea, there is evidence of an analogous polymorphism in the disease which for convenience may be termed generally scleroderma. There is little need to describe the clinical appearances of scleroderma, the localised form with its thick, glossy, hard, ivory skin, or the generalised form with its more or less widespread "hidebound" appearance, thick, immobile, parchment integument, with the natural folds of the skin obliterated, and expression lost in the face giving rise to the "masque sclérodémique."

Of the pathology much has been written and little explained. Briefly, the cellular elements of the skin disappear, together with the elastic and fatty tissue, the vessels become

narrowed or obliterated, and the collagenous bundles hypertrophy. Ultimately the whole affected area becomes atrophied into a thin parchment-like cutaneous plate without a papillary layer or subcutaneous tissue but covered with atrophied epidermis.³ Nerve lesions have been reported but the evidence of any constant nervous origin for this affection is still lacking. In such cases as have been examined after death the muscle changes have been variously reported to have been either of an inflammatory nature, "myositis diffusa," or, in what may be interpreted to be a later stage, of the nature of a fibrous degeneration or infiltration, "myositis fibrosa." It must be confessed that the necropsies on record throw little or no light so far on the etiology of the disease. We are thrown back again on the living subject, to an investigation of the clinical phenomena, to an examination of analogous diseases and allied conditions, and perhaps to a research into the manner of discharging the vital functions. Bloch and Retmann⁴ have recently published their researches upon metabolism in scleroderma and state that there is no characteristic variation in the Nitrogen-exchange. By correlation of these one with another and by comparison or contrast with the processes observed in other diseases it may be possible to arrive at some definite conclusion as to what scleroderma is and how it arises. Although the four cases described may be quite wrongly associated, although the suggested points of similarity may be quite wrongly interpreted, still there remain some features in common which bespeak the same pathological processes underlying them.

CASE 1.—A healthy girl, aged 13 years, first came under the care of Dr. H. Waldo 18 months ago on account of a patch of painful, thickened, stiff, glossy skin on the right shoulder and arm, a narrow band extending from the posterior aspect of the acromion over the deltoid and down the outer and posterior part of the arm to a point a few inches below the elbow. It did not at first occupy so large an area as this but spread rapidly in the first week or so, then became stationary, and finally began to disappear, especially behind the shoulder where now the skin is practically normal; the white waxy appearance showed itself almost at once. Three months ago she developed a similar smaller patch about two inches long and one inch wide, oval in shape, on the left thigh just over the apex of Scarpa's triangle, and now she is developing some indefinite thickening of the skin on the inside of the left knee just above the condyle of the femur. Also within a month or two of first attending the right hand was noticed to be smaller than the left, while the middle finger, although freely moveable as regards the joint, was incapable of being completely extended unless the wrist was flexed. The muscles of the forearm were not noticeably wasted nor lacking in power; flexion and extension of the fingers were perfectly normal up to a point where the tendon of the flexor sublimis digitorum to the middle finger seemed to be stretched to its utmost and the finger could be no further extended, the flexion only being apparent at the metacarpo-phalangeal joint. This is the condition at present: there are no involvement of tendon-sheath or fascia as in Dupuytren's contraction and no true primary muscular atrophy, all electrical reactions are normal, and it is neither a spastic contraction of the flexor muscle nor due to defective power in the extensor. This seems to be an essential shortening of muscle and tendon. The girl herself was not aware of any abnormality in this hand. There was no acute onset, no rheumatism, no pain, no tenderness, anesthesia, or any symptom to attract the patient's attention.

CASE 2.—The patient was a single woman, aged 40 years, in domestic service. She showed changes in the skin of her left arm and hand which dated either from birth or very early infancy. She had true sclerodactylia, the thumb and first finger of the left hand were deformed, the skin was thickened, hard, and cold but not white, and even the bones were irregularly thickened as if by periostitis. The skin was chiefly involved up the radial border of the forearm to a point just above the elbow so that on straightening the arm a thick fold of infiltrated skin was made tense and prominent, yet there was no implication of muscle or tendon in this part; but on the palmar aspect of the first metacarpal, where the skin was scarcely at all affected, the

¹ Fibromatosis or new formation of collagen fibres takes place not only in association with granulating wounds but also in a large number of affections of the corium. After recurrent attacks of lymphangitis and erysipelas where a persistent oedema has occurred the oedema causes a rarefaction of the fibrous stroma, which is followed by a fibromatous process. In scleroderma the hardness is due to a hypertrophy of the fibrous tissue. Pathology of Skin Diseases, Macleod, p. 115.
² Bloch and Retmann. Wiener Klinische Wochenschrift, vol. xix., p. 630.

¹ A paper read at a meeting of the Bristol Medical-Chirurgical Society on Nov. 14th, 1905.

² Bristol Medical-Chirurgical Journal, December, 1903.

tendon of the flexor sublimis showed the characteristic contracture; the skin, fascia, and tendon sheath were all free from induration, yet the tendon was distinctly shortened, and on straightening the finger with the wrist and elbow extended it stood out as a thin cord tightly stretched. Quite recently this patient had severe pain and tenderness over the roots of the brachial plexus, but this had subsided without further change in skin or muscle.

CASE 3.—The patient was an unmarried woman, aged 22 years, the subject of a large goitre without symptoms of Graves's disease. Two years ago she was taken ill with an attack of rheumatism; not quite characteristic rheumatic fever, for there seemed to have been no effusion into the joints, only pain, severe pain, all over and inability to move the limbs. Recovering from this all her joints were found to be stiff and apparently enlarged, looking at first sight like osteo- or rheumatoid arthritis. But on examining the joints they were found to be limited in their movements; not by essential changes in the joints themselves, but by a general shortening of flexor tendons, of such a nature that if an attempt was made to straighten the various joints of the fingers, the wrist, and the elbow simultaneously the tendons became tense and complete extension was prevented; while flexion of the elbow immediately allowed the wrist to be extended. Further, the apparent expansion of the articular ends of the phalanges was shown by a radiogram not to depend upon bony changes but upon wasting of the soft parts. The muscles and tendons of the upper extremities alone showed these alterations and the electrical reactions were everywhere normal. In this patient the tendon sheaths and fascia were free and there was no sign of any skin affection. Although there was a goitre present without symptoms of Graves's disease, yet very small doses of thyroid extract or thyroidestin produced immediately tachycardia, nervousness, and tremor.

CASE 4.—The patient was a girl, aged 20 years, who previously was in good health and had suffered from no skin complaints. Two months ago she scratched her right arm. From this a general inflammation followed, apparently an ordinary attack of erysipelas, for which she was admitted to the Royal Infirmary. Now that the erysipelas had subsided there was over the insertion of the deltoid an induration of the skin about 6 inches long and 3 inches wide, roughly oblong in shape, slightly swollen, dusky red in colour but mottled with white streaks and stellate veins, surrounded by the "lilac ring." The edges were well defined but beyond the margin subcutaneous "islets" of infiltration could be felt which did not involve the epidermis. The skin did not feel adherent to the subjacent tissues, nor were any muscles affected. There was no pain and sensation was unaltered. The case seems to be one of localised scleroderma or morphea following directly upon erysipelas or starting from an infected wound. (At the present time this patient is suffering from an attack of articular rheumatism with acute endocarditis.)

The case which I reported three years ago is worth calling to mind in this connexion; to quote from the description then given, "The first symptom complained of was a weakness in the limbs; at first the left hand felt weak and numb, especially towards night later the right hand followed suit and aching pains were constantly present in the forearms. Soon after, the legs began to ache on walking short distances so much that after a five mile round he was obliged to lie down and rest. The tips of his fingers started tingling and were so sensitive that he gave up shoe-making, after vainly trying to relieve the tenderness by wearing woollen gloves." It was some months before any changes in the skin were noticed. Then the scleroderma became gradually of the generalised type; there was atrophy of the muscles and marked contraction of some of them, notably the biceps, "which could be felt as a tense cord, no thicker than the little finger, lying under normal elastic skin which could easily be raised from the underlying muscle"; the right arm was flexed at an angle of nearly 90° at the elbow, while a lesser degree of wasting and contraction was shown in the left arm. Many other muscles had atrophied but none contracted like the biceps.

To Thibierge is due the credit of first seriously attracting attention to the changes in muscles associated with scleroderma* and more recently in *La Pratique Dermatologique*† he quotes Leredde and Thomas to show that the

only well-established point in the pathogeny of the disease is that a sclerosis of the skin, possibly inflammatory in origin, is always present. A brief epitome of cases collected by Thibierge† is appended.

1. Girl, aged 17. Diffuse scleroderma on plaques. Scleroderma. Triceps wasted, movements free but feeble can be flexed but not extended fully owing to contraction of General loss of power in hands and fingers, not depending on Sclero-mastoids contracted. Peri-articular (scapulo-humeral) adhesions. R.D. in some muscles.

2. Woman, aged 23 (Westphal L.). Diffuse scleroderma. Scleroderma. Onset unnoted. Left elbow cannot be extended owing to contraction of biceps which is as hard as wood. Her fingers half flexed in position of repose, and although the joints relatively more freely moveable than usual flexion is very limited. No pain, some crepitation round joints, articular surfaces feel rough. Leg muscles very hard, no true contraction, movements of limited. No paralysis.

Necropsy.—No joint changes. Fibrous peri-myositis, no intermyositis.

3. Woman, age 36 (Westphal II.). Diffuse scleroderma. Scleroderma. Many muscles atrophied although skin is free from traction in biceps similar to foregoing.

4. Woman, aged 53 (Goldschmidt). Sclerodactylia. Nasque dermique. Symmetrical gangrene. Skin of neck free. Muscles and tendons ("soudés") in the forearm; on movement dry creaking felt.

Necropsy.—Peri-muscular fascia very dense, inter-muscular spaces show increase of fibrous tissue. Some atrophy of the fibres.

5. Man, age 19 (Schultz). A fatal case of Addison's disease scleroderma and interstitial myositis.

Of other published cases I have been able to collect the following:—

6. Hutchinson.⁸ A case of scleroderma with contraction of mastoid not due to induration of the skin.

7. Grasset.⁹ Scleroderma with fibro-tendinous contractions of muscle atrophy, not myelopathic nor neuritic, but a "myopathy."

8. Elliott.¹⁰ Amyotrophic changes preceding scleroderma 1 years.

9. Pelizaeus.¹¹ Scleroderma with independent sclerosis of muscles. 10. Rosenfeld.¹² A similar case.

11. Haushalter and Spillman.¹³ Girl, aged six. Diffuse scleroderma accompanied by marked atrophy of muscles and a growth in one leg.

12. Herringham.¹⁴ A man with scleroderma and a condition resembling rheumatoid arthritis but depending actually on muscular contractions, not joint changes; all the limbs contracted.

13. Fowle.¹⁵ Diffuse scleroderma with widespread tendons.

14. Batten.¹⁶ In a very complete description of myositis quotes a case of Lindner in which typical myositis fibrosa was associated with sclerosis of the skin.

15. Potjes and Olejat.¹⁷ A fatal case of five years' duration woman who developed the most extensive scleroderma and through a generalised acute myositis to a stage of fibrous contracture Scleroderma with myositis diffusa (necropsy).

Now the dependence of scleroderma and the allied cutaneous atrophies upon nerve lesions is at best only a matter of conjecture; in the majority of necropsies no changes in the nervous system have been found; in the few instances in which these changes did exist they were of an inconstant, even contradictory, type that no causal relationship could be established between nervous system, skin muscle. But the evidence of primary inflammation in the muscles of either an acute or chronic variety, ending in a fibrosis, is amply corroborated both by clinical and pathological facts. Beyond this it is difficult to penetrate, the indications seem to point to an acute or chronic infection which affects mainly muscle and subcutaneous tissue, resulting in a sclerosis of the skin and the muscles an infection to which perhaps persons suffering from other general diseases are peculiarly liable and especially subjects of Graves's disease, myxoedema, Raynaud's disease, Addison's disease, and nerve degenerations. It is probable that myositis of a localised nature going on to sclerosis and contraction of a single muscle or a group of muscles is commoner than generally supposed; and the disease, of which this is only one manifestation, may be acute, subacute, or chronic course, and on occasions involve the skin, giving rise to one type of scleroderma reference to the original monograph of Addison.

* Revue de Médecine, 1890, vol. x., p. 291.

⁸ Hutchinson: Archives of Surgery, 1891-92, vol. III., p. 233.

⁹ Grasset: Nouvelle Iconographie de la Salpêtrière, 1896, No. 1.

¹⁰ Elliott: Journal of Cutaneous Diseases, May, 1897, p. 193.

¹¹ Pelizaeus: ref. Archives de Neurologie, 1897, No. 3, p. 133.

¹² Rosenfeld: Centralblatt für Neurologie, 1902, p. 878.

¹³ Haushalter and Spillman: Nouvelle Iconographie de la Salpêtrière, 1899, xii., 200 (Obs. III.).

¹⁴ Herringham: Transactions of the Clinical Society, 1900, vol. x.

¹⁵ Fowle: Boston Medical and Surgical Journal, 1904, vol. ciii., 1.

¹⁶ Batten: Transactions of the Clinical Society, 1904, vol. xx.

¹⁷ Potjes and Olejat: Annales de Dermatologie et de Syphillogie, June, 1906.

* Thibierge: Revue de Médecine, 1890, vol. x., p. 291.

† Thibierge: La Pratique Dermatologique, Tome iv. Article: Scleroderma. 1906.

of Alibert and True Keloid¹⁸ makes it obvious a disease as seen and described by Addison under the title was not, as has always been represented, solely a primarily a cutaneous disease, for he recognised and named in two of his cases a general sclerosis of muscle, and fascia, together with—and as part of the same process very nearly allied to inflammation, probably a stromous nature"—true keloid of the skin which he called sclerodermia.

c. Bristol.

RUPTURES OF THE URETHRA, INTRAPELVIC AND PERINEAL.

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An article published in 1894¹ I pointed out that ruptures of the urethra associated with fracture of the pelvis presented anatomical and clinical peculiarities not at that time fully recognised, although they are of great importance. In text-books of that date the common injury of the urethra caused by direct violence, such as kicks in the perineum or falling astride, was described as a partial or complete rupture of the membranous urethra, or of the portion immediately in front of the triangular ligament; and the rupture was attributed to violent compression of the urethra between the pubic arch and the object causing it. By the same authorities injury of the urethra in the female pelvis was attributed to laceration by the sharp points of the broken pubic arch. In both cases the same of the urethra was said to be affected—namely, the membranous—and in both it was said to be accompanied by rupture of the anterior layer of the triangular ligament. I followed the familiar description of the course taken by extravasated urine; how it distended first the anterior part of the perineum, then the scrotum, and afterwards the soft tissue of the groins and lower abdomen, as a natural result of the disposition of Colles's fascia.

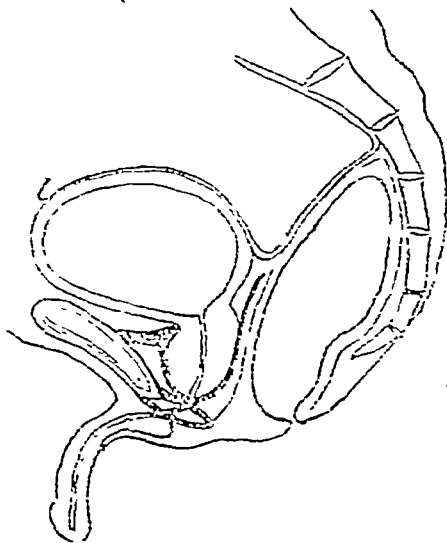
My own observations and dissections published in 1894¹ need me that this classical account of the anatomy of the clinical sequelae of ruptured urethra contained much. The description of the text-books was quite correct as it applied to direct injuries of the perineum by falls or kicks. In the slighter cases of this sort the injuries consist of more or less bruising of the bulbous portion of the urethra, sometimes with internal mucous lacerations; in the severe cases the membranous urethra is torn completely and immediately in front of the triangular ligament. In cases of sort extravasation of urine, if it is allowed to occur, it follows the route determined by the attachment of Colles's fascia, just as it does in an ordinary case of neglected fracture in the bulbous portion. When, on the contrary, rupture of the urethra occurs in a case of fracture or violent compression of the whole pelvis the position of the rupture and the course of extravasation are quite different. In every case of pelvic injury which I have examined and in all published cases known to me which are accurately described the rupture when injured has been torn on the upper or posterior part of the triangular ligament—i.e., where the membranous urethra enters the apex of the prostate. In other words, the rupture in these cases is not perineal, but intra-pelvic. The extravasation of urine when it occurs is also intra-pelvic and blood collect in the prevesical space without any rupture of the perineum, though the skin of the latter may be ecchymosed. The two different positions in which the membranous urethra is ruptured by direct and indirect causes respectively will be easily understood by reference to Figs. 1 and 2.

The exact mode in which what we may call the intra-pelvic rupture of the urethra is brought about is not entirely clear. In the majority of cases of fractured pelvis which have come under my observation the fracture has been caused by lateral compression of the pelvis; for example, a fall between two tubs in a coal mine or between a railway carriage and a platform. The other common causes of fracture of the pelvis are falling from a great height and being run over between the ground and some heavy falling mass,

such as rock or masonry. In such accidents the blow or compression is as likely to be antero-posterior as lateral, but cases of the latter are obviously less likely to be immediately fatal, and this may account for their greater frequency in surgical practice.

Now, the effect of a sudden violent lateral compression of the pelvis must be to shorten its transverse and to lengthen its antero-posterior diameter until the bony ring finally

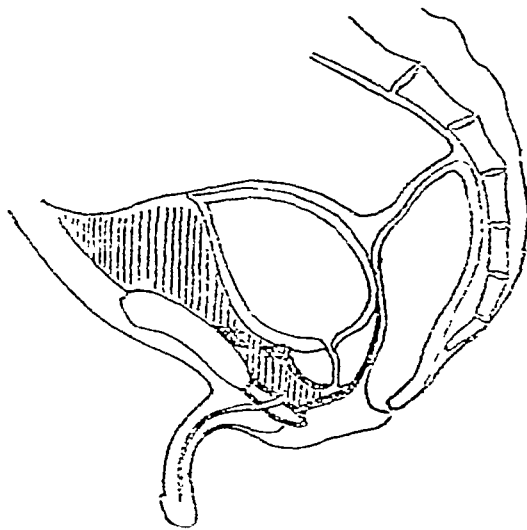
FIG. 1.



Normal relations of the pelvic fascia.

gives way at its weakest parts. The lengthening of the antero-posterior diameter necessarily puts a violent stretch on all the soft parts in the median sagittal plane and tends to detach them from the back of the pubis. As the triangular ligament is firmly attached to the pubic arch it practically forms part of the bony pelvis and moves forward with it. The urethra, therefore, gives way just where it emerges from the triangular ligament on its upper or pelvic side and enters

FIG. 2.



Rupture of the urethra above the triangular ligament. The shaded area shows the position of the extravasation.

the apex of the prostate. In many cases the pubo-prostatic ligaments are also torn and then the bladder and prostate fall back with the rectum into the hollow of the sacrum, leaving a great space behind the pubis shut off from the perineum by the layer of recto-vesical fascia which forms the posterior layer of the sheath of the prostate. (See Fig. 2.) Into this space a great quantity of blood and urine

can be extravasated without passing into the scrotum or perineum.

Although in my experience the compression which caused the injuries of the pelvis and urethra has been generally lateral, it is possible that rupture of the urethra may also occur when the force of the injury has been directed from before backwards. In one case in which the nature of the accident rendered it uncertain in which direction the pelvis was actually compressed (the man was crushed under falling brickwork), the urethra was torn completely across in the usual position—viz., immediately in front of the prostate. At the post-mortem examination it was noted that the triangular and sub-pubic ligaments, though completely detached from the pubic arch, remained in connexion with the fascia lata of the thighs. The right pubis was unbroken, the left broken at each ramus. It is possible that the broken pubis and the bladder were pressed violently backwards by the blow, while the triangular ligament was prevented from accompanying them by attachments to the fascia lata of the thighs. The effect of this would be to snap the urethra just behind (or above) the triangular ligament. Although this is a possible explanation of the conditions actually found, the latter might even more probably have been caused by lateral instead of antero-posterior compression in the manner already described.

The occurrence of ruptured urethra in cases of fractured pelvis caused unequivocally by antero-posterior compression has not come under my own notice. It is mentioned in Bergmann's "System of Surgery" on the authority of several writers, but no particulars are given. Since I first pointed out and described the peculiarities of intrapelvic rupture of the urethra several writers have confirmed my observations and recorded similar cases, though different explanations have been suggested as to the manner in which the injury is caused. In 1901 Mr. O. J. Bond² of Leicester, in a paper on the treatment of cases of fractured pelvis with ruptured bladder or urethra, remarks: "There is the tender board-like, dull area above the pubes spreading laterally to the groins, which is due to the extravasation of blood and, in the case of injury to the bladder, the addition of extravasated urine in the prevesical space." He goes on to say: "In my experience the urethra gets injured where after the fall the crush comes with the patient lying on his side, thus driving the fractured sides of the pubic arch together like the blades of a pair of scissors and injuring or completely dividing the urethra in its membranous portion, just in front of the apex of the prostate. On the other hand, where the pelvis is crushed from before back the urethra is more likely to escape."

In 1902,³ a case, a boy, aged seven years, was admitted to St. Mary's Hospital under the care of Mr. Edmund Owen suffering from an injury caused by a pile of coffin lids which had fallen on him. Both tibiae were fractured, and there were marks of severe bruising over the lower part of the abdomen. An incision was made above the pubis and extravasated blood and urine were found in the prevesical space. The bladder was full of urine and not ruptured. "Inasmuch," says the report, "as no instrument could be passed into the bladder whilst there was escape of urine into the pelvis (*but not into the perineum*), there could be no doubt but the rupture was behind the triangular ligament." "Had the neck of the bladder itself been torn the bladder would probably not have remained full of urine under pressure. The rent, therefore, must have been between the neck of the bladder and the triangular ligament." No mention is made in any part of the report as to whether there was a fracture of any part of the pelvis.

A case very similar to this came under my own care in 1902. A boy, aged 14 years, while working in a coal mine was crushed between two tubs. The squeeze compressed the pelvis laterally. He walked home with help. About ten minutes after the accident blood began to come from the penis and continued to do so slightly all day. Three hours after the accident he passed urine free from blood with considerable pain. He was sent to hospital and on admission a few hours after the accident there were noted blood oozing from the penis, tenderness in the perineum, and a dull swelling above the pubis. A soft rubber catheter drew off a few ounces of urine, part bloody, part quite clear. An incision was made in the perineum, the skin of which was ecchymosed, and the urethra was found ruptured behind

the triangular ligament. It was evident that the urethra had not passed into the bladder but merely into a space between the pubis and the neck of the bladder. The latter was felt distended to halfway between the pubis and umbilicus. The distal end of the ruptured urethra could not be found. An incision above the pubis showed that the bladder was intact and distended. It was opened and a large quantity of clear urine escaped from it. A soft rubber catheter was passed backwards through the bladder, the perineal wound, and afterwards through the neck of the urethra and penis, being finally fixed in place by a suture through the frenum preputii. Further examination through the perineal wound showed that the urethra was not quite complete on the dorsal aspect. Examination showed no sign of any fracture of the pubic arch or any part of the pelvis. The bladder and the pubic wound were completely sutured and sealed by collodion. The perineum also was sutured with the exception of a small space behind for a drainage-tube. The bladder was continuously drained by Cathcart's apparatus attached to the catheter for nine days. Both wounds healed by primam, and one year later there was no stricture or urinary trouble.

In this case the anatomical findings were exactly similar to those of Mr. Owen's case. In both the rupture was typical intrapelvic rupture just behind the triangular ligament, and in both the extravasation of blood was in the pelvic and not perineal. In both the bladder itself was intact. In my own case two additional facts were noted: the compression of the pelvis was lateral (not antero-posterior) and the pubic arch was certainly not fractured. It was carefully examined during the operation. This disposes of the explanation sometimes offered of the rupture, namely, that it is caused by the direct approximation of the sides of the broken pubic arch cutting the urethra between the blades of a shears—the explanation adopted by Mr. Bond. It is significant that both cases were children, whom it is probable that a much greater deformation of pelvis may occur without fracture, and strongly supports the view put forward above that the rupture of the urethra is due to a violent stretching of the soft parts in the midsagittal plane.

In 1904 Dr. Henry Rutherford⁴ published a paper on ruptured urethra in which the following case is described: "A fracture through the body of the pubis close to the symphysis, and there was complete division of the urethra close in front of the prostate."

In 1905 Dr. David Lawson⁵ of Hull, in reporting a case of intrapelvic extravasation of urine, describes with great clearness the position of ordinary ruptures of the urethra in the perineum and the course which the extravasation takes in this injury. He then contrasts it with a case in which a gentleman was thrown from his horse and the horse fell on top of him. There was no swelling or sign of extravasation in the perineum or scrotum but a large dull tumour above the pubis reaching three parts up to the umbilicus. This was found to consist of blood mixed with urine lying in front of a full unruptured bladder. Careful palpation detected fracture of the ischial or pubic ramus. Dr. Lawson suggests that "the perineum came in violent collision with the projecting earth and that the floor of the pelvis with the bladder was driven up into the abdomen; that the recto-vesical ligament and all the soft structures were violently torn off the bone and forced up into the abdomen and that at the same time the pubic vessels were torn across and the urethra completely severed just at the tip of the prostate behind the deep layer of the triangular ligament. Against this explanation seems to militate the absence of bruising of the perineum which one would expect from a violent blow. It seems to me more probable that the case was really one of lateral compression of the pelvis, the mechanism of which has been explained above."

The cases which I have quoted confirm in almost every particular the description of intra-pelvic rupture of the urethra which I described in 1894, although, so far as I am aware, my observations were not known to any of the authors of them. The testimony to the accuracy of my description in each case quite independent is the more striking and valuable.

Various methods of treatment have been adopted:

⁴ THE LANCET, Sept. 10th, 1904, p. 751.

⁵ THE LANCET, March 25th, 1905, p. 790.

² THE LANCET, Nov. 23rd, 1901, p. 1404.

³ THE LANCET, Feb. 15th, 1902, p. 443.

recommended for dealing with rupture of the urethra complicating fractures and injuries of the pelvis. The earlier writers recommend first to try to introduce a catheter into bladder and if this succeeds to leave it as long as circumstances permit. As a matter of fact, this course is not practicable, for when the rupture is complete it is not impossible to reach the bladder by simple catheterism, the ends of the torn urethra being separated by a considerable interval. If successful at all it can only be achieved by a rigid instrument which is unsuitable for continuous drainage of the bladder. What often happens when the catheter is passed is that it enters the prevesical space and it draws off several ounces of extravasated urine which collects in that position, and as the point of the catheter is to lie in a free space the bladder is thought to have been successfully entered when in reality it lies full of urine and the catheter. I have committed this error myself seen it done several times by others. The importance of knowing this possibility is obvious. When the attempt to empty the bladder by means of the catheter has been made without success, the next step formerly advised was to make an incision in the perineum and attempt to reach the bladder by that route. If it fails, extravasated urine will find its way out through the perineal wound and further chief will be prevented.

Dr. Bond, whose paper I have already quoted and who recognises clearly the position of the rupture in the urethra, recommends adding a suprapubic incision to the perineal and in some cases advises opening the bladder suprapubically and inserting a drainage tube through the neck of the bladder and at the perineal wounds. Dr. Rutherford* also advises combined suprapubic and perineal drainage, together with use of a soft catheter passed along the whole course of urethra. Dr. Lawson† adopted a similar procedure in case with good result. My own practice is to rely entirely on continuous drainage of the bladder through a rubber catheter passing along the whole length of the urethra into bladder and attached to Cathcart's suction apparatus, advantages of draining the bladder by the natural route being obvious. In the first place, it approximates the torn ends of the ruptured tube and permits union and repair to take place under the most favourable and most rapid conditions. In the second, it is possible by this means to keep bladder continuously empty without the escape of any urine into the wound. Cathcart's apparatus is by no means stiff when attached to a tube introduced into the bladder through a suprapubic incision, because it is almost impossible to prevent the entry of air into the tube, and this greatly aids its powers of suction. But when the same apparatus is applied to a catheter introduced through the urethra this difficulty does not occur and I have found it perfectly able.

It may be said that, granting the advantage of draining the bladder through a catheter in the urethra, it is not always possible to introduce it. I believe that if the tomy of the injury is correctly appreciated there will not be any difficulty in finding the distal end of the torn urethra through a perineal incision, which should always be the first step in dealing with these cases. I have mentioned that the bladder and prostate after the rupture, when complete, fall back on the rectum into the hollow of the sacrum, palpation through the rectum it is easy to identify the state and then to bring it into the perineal wound, where the orifice of the urethra is easily seen. In the case of my patient mentioned above the rupture was not complete, and the patient not having reached puberty the prostate was not yet felt. I therefore opened the bladder above the pubes, as done also by Dr. Lawson* in his case, and passed the catheter from behind forwards. By this means if necessary a catheter can always be introduced through the whole course of the urethra. It will be noted that in the case of the alluded to I completely closed the bladder in order to secure the success of the suction through the catheter. Draining of both wounds was primary and the whole consequence was rapid and complete. A subsequent case of complete rupture with fractured pelvis treated by the same method, but without a suprapubic cystostomy, was equally satisfactory and normal micturition was resumed in three weeks.

The question of suturing the torn urethra depends on circumstances. When the rupture is complete and the torn ends widely separated sutures should certainly be employed.

In the first place, the obvious thing to do to repair a gaping wound is to sew it up and so promote direct healing and diminish the chance of stricture. In the second place, it is important to retain the torn ends firmly together in case it may be necessary to change the catheter. When the urethra is held together by strong supporting sutures of silkworm gut (not passing through the mucous membrane) the catheter may be removed at the end of a week or earlier if necessary and a fresh rubber catheter introduced quite easily. When the rupture is not complete and the torn ends fall naturally together the sutures may be dispensed with.

The chief objection likely to be raised to the method I have recommended is the danger of closing a large wound which is liable to become septic. Sepsis is indeed a danger of all wounds and in urinary surgery it is peculiarly dangerous. Drainage of the pelvic wound should therefore always be provided for by tubes or gauze wicks for the first 48 hours, or longer if necessary. Sepsis can be prevented in the great majority of cases if the same scrupulous care is exercised in urinary as in all other cases. The chief risk is that infection has already occurred before the case comes under the surgeon's care, either by neglect or by the introduction of a catheter without proper precautions. In a case in which the history and symptoms make an injury of the bladder or urethra probable it would be well if house surgeons or others who are first called would refrain from passing dubious instruments and leave all manipulations to be done in the operating-theatre under proper conditions. Apart from previous infection all the conditions are favourable for aseptic healing. The patients are generally healthy and young, with normal urine, which opposes no bar to primary union even if it comes for a short time in contact with the wound.

Lastly, a few words may be added on the treatment of rupture of the urethra due to direct violence in the perineum, such as kicks and straddling falls. The guiding principles are exactly the same. Avoid infection by careless catheterisation and cut down at once in the perineum whenever the passage of blood from the penis makes it certain that the urethra has been wounded. Even contusions and partial mucous lacerations are apt to be followed by stricture if not incised, drained, and where necessary repaired by sutures. When the rupture is in the membranous part, it is, as I have already pointed out, in front of the triangular ligament and in this position the rupture is easily found even when it is complete. A soft catheter should be passed into the bladder and the two ends of the urethra brought together over it by means of sutures just missing the mucous membrane. The perineal wound is then closed with the exception of a small portion drained by a gauze wick, and if the urine be drained by Cathcart's apparatus for a week, primary union of the urethra without stricture is not difficult to obtain. The method of merely passing a catheter and tying it in always leads to sepsis and is no bar whatever to the production of stricture. The method is faulty and dangerous and should be entirely abandoned.

Note.—I have omitted to refer to another published case which illustrates very clearly the difference between pelvic and perineal ruptures of the urethra—namely, "A Case of Fatal Pelvic Injury in a Child in which a Collection of Blood in the Prevesical Space simulated Distension of the Bladder," by Mr. Herbert Page,‡

Wolverhampton.

GALL-STONES IN THE APPENDIX.

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A MAN, aged 26 years, was admitted to the Cumberland Infirmary in April, 1906, complaining of having had two attacks of abdominal pain, diagnosed as appendicitis. The patient was very healthy up to two or three years ago, when he began to suffer occasionally from slight abdominal pain and discomfort after taking food and at times a feeling of weariness or actual pain in the lumbar region after any exertion. Two years before admission he was operated upon for inguinal hernia in this infirmary. The patient as a rule had been rather constipated and was especially so about four months before admission; for some weeks at this time he noticed that his urine was of a dark reddish colour on

* Loc. cit.

† Loc. cit.

‡ Loc. cit.

standing. About a month before admission the patient had an attack of acute pain over the whole lower abdomen lasting one day. He vomited once then and had to keep to bed all day. On the next day, although he felt some slight abdominal pain and was rather weak, he went back to work again. His urine at this time was again thick and dark red in colour. He remained fairly well for a month and then seven days before admission acute abdominal pain began, mostly about the umbilicus, but later becoming more marked in the right iliac region. There were frequent vomiting for the first day, severe headache, and constipation, while tenderness and slight resistance were found over the appendix region. The pain gradually lessened and vomiting ceased, until in four days he was able to get up and on admission, three days later, there was no pain or tenderness and he was quite able to go about. At no time had the patient had pain over the liver region, in the chest or about the shoulders, nothing ever suggesting gall-stone colic, nor had jaundice or even the slightest yellow tinging of the skin or conjunctiva been noticed either by the patient or his friends. No gall-stones had ever been seen in the motions.

The abdomen was opened in the right iliac region and the appendix was exposed. Slight adhesion of the appendix to the posterior abdominal wall at one point was found: the appendix was long and had rather thickened walls. The mesentery was tied and the appendix was removed. It was found to contain some turbid mucus and 11 small stones, of varying sizes from that of a pea to that of a large pin-head. These stones were black in colour, rather soft, and faceted like gall-stones. On examination they were found to consist of cholesterin and to contain bile pigment. The patient made a good recovery and was discharged in about three weeks. For the clinical notes I am indebted to Dr. William Templeton, house surgeon in the hospital at the time.

Remarks.—The occasional presence of gall-stones in the appendix is fully established and is alluded to in general terms by modern writers of text-books. Roberts,¹ for example, remarks "that they cause trouble by lodging in the vermiform appendix." As far back as 1871 it was a recognised fact that gall-stones were liable to be arrested in the appendix,² but Murchison, in writing on the same subject, expressed a doubt if the concretions were not intestinal rather than biliary.³ That the occurrence is not exactly frequent may be gathered from Naunyn who in 1892 wrote:⁴ "It has happened that a gall-stone has made its way into the vermiform appendix, the result of which accident may be perityphlitis and fatal peritonitis." Naunyn mentions Budd's case, quoted also by Murchison, in which a gall-stone in the vermiform appendix caused perforation and fatal peritonitis. The same author mentions cases of a similar kind by Trousseau, Sirey, Rehn, Treves, and Wegeler. In Wegeler's case the supposed gall-stone was by chemical analysis proved to consist of faecal matter. Mistakes of this kind might easily arise if the appearance only of the concretion was relied upon; if, however, a concretion was faceted and had a chink-like sound when allowed to fall on a hard surface such as a marble slab, it would probably be a gall-stone, but chemical analysis will always remain as the true test to determine the source of a concretion in the appendix.

As a general rule the size of stones met with in the gall-bladder or separated from faecal discharge is too large to enter the canal of the appendix, and the same is true for the stones of fruit, formerly supposed to get into the appendix; the stercolith having simulated an orange pip or a damson stone. Here again a chemical analysis would effectually serve to get rid of a fiction which has been repeated in all books and is still believed in by some. What I suggest is that all concretions found in or near the appendix, or in an abscess or otherwise, should be systematically examined by section and by analysis in order to settle definitely whether a concretion is a stercolith or a gall-stone, covered or not by faecal deposit. On one occasion a hair was imbedded in a stercolith from an operation I performed lately, and a similar experience fell to Mr. W. H. Battle.⁵ The hair was possibly the nucleus on which the concretion formed, and in the

same way a gall-stone or some other foreign body might become a nucleus. Treves⁶ has written that mischief in the appendix may be due to a foreign body, such as a pin, a grape pip, a small shot, a piece of bone, and the like. "Most of the so-called cherry-stones," he writes, "and gall-stones found in the appendix are calcareous concretions mixed with faecal matter."

A good example of faecal calculus was removed lately in the course of an appendix operation; it shows that a seed has formed the nucleus and around it are layers of inspissated faeces and the whole is impregnated with lime salts. By the courtesy of Mr. D. Prain, director of the Royal Botanic Gardens, Kew, this concretion was examined by Mr. L. A. Boodle, F.L.S., assistant in the Jodrell Laboratory in the garden. The nucleus was compared with practically all the objects that might conceivably be met with in such a situation—grape or raisin, gooseberry, currant, and other small seeds of fruits generally consumed—but it did not agree in the least with any of them. But with the fruitlet, or "pip," of a fig it agreed so absolutely in size, general appearance, and structure that, in the opinion of Mr. Boodle, the nucleus of my concretion could be accepted with hardly any hesitation as coming from the fig.

Concretions can sometimes be felt in the appendix through the abdominal wall without the aid of an anæsthetic, the favourable condition being a relaxed state of the muscles and a moderately thin paries. In the case recorded these gall-stones were actually felt, not all but some, and in consequence of the presence of concretions the operation was done, although the condition of the patient seemed absolutely healthy. There cannot be much doubt that these gall-stones would have perforated sooner or later.

The pathological association of gall-stones in the gall-bladder and appendicitis, to which attention has been drawn, is hardly an established doctrine and may be merely a coincidence, although 35 per cent. of Ochsner's patients operated on for gall-stones had suffered from appendicitis.⁷ Strange indeed it would be if destructive lesions in the appendix by infecting the blood in the portal system were among the causes of the formation of gall-stones and that gall-stones might find their visit a return one to the appendix. The whole question is dealt with by Moynihan. A death from perforation of the appendix by a gall-stone is recorded by Mayo Robson in THE LANCET of Dec. 29th, 1906, p. 1768.

Carlisle.

PNEUMOTHORAX FROM PUNCTURE OF THE PLEURA.

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As pneumothorax is an uncommon condition and stab wounds are, fortunately, also not common, at least, in England, I thought the following case might be of interest. I was at the time surgeon on a well-known line to the East and the vessel under my charge was running down the Red Sea with a shade temperature of 104° F., when one evening the native barber (my interpreter and go-between with the native crew) came and reported that one coolie (lascar sailor) had stabbed another in the back with a clasp knife having a three-inch blade. It was then about 8.30 o'clock on the evening of July 21st, and on walking aft I found a well-built lascar, about 24 years of age, with a terrified face lying in a pool of blood surrounded by a curious ring of squatting natives.

On examination the patient had an anxious expression, his respirations being very rapid, shallow, and thoracic in nature, his chest being in a position of full inspiration, especially on the left side, which looked almost blown up. There was a clean-cut incised wound three-quarters of an inch long in the back between the eighth and ninth rib and two and a half inches from the mid-line, which was perfectly clean and had stopped bleeding, the loss of blood having been unimportant. There was no surgical emphysema. The pulse was rather feeble and rapid, the patient evidently

¹ Roberts: Theory and Practice of Medicine, vol. II., p. 846, tenth edition, 1905.

² J. Russell Reynolds: System of Medicine, vol. III., p. 314.

³ Clinical Lectures on Diseases of the Liver, third edition, 1885, p. 551.

⁴ B. Naunyn: A Treatise on Cholelithiasis, translated by A. E. Garrod, New Sydenham Society, 1896.

⁵ Descriptive Catalogue, Pathological Specimens, Museum of the Royal College of Surgeons of England, 1905, Appendix xix., second edition, p. 14, No. 2559 C.

⁶ Treves on Appendicitis, System of Surgery, vol. II., p. 625, 1896.

⁷ Annals of Surgery, vol. xxxv., p. 708. Quoted by Moynihan, Gall-Stones and their Surgical Treatment, second edition, 1905, p. 70.

suffering from shock but not to a severe degree. The apex beat of the heart could not be detected but the cardiac dulness was considerably diminished in area and displaced towards the right side, the dulness beginning at the left edge of the sternum above, about the fifth rib, and stretching to the left to a point two and a half inches internal to the nipple line, while on the right it reached some little distance to the right of the sternum. The liver dulness could not be satisfactorily made out and this organ could not be felt owing to the patient holding his abdomen extremely rigid. The percussion note over the whole left chest was more resonant than on the opposite side, but the hyper-resonance was not very pronounced. On auscultation the heart sounds were faint but normal, the maximum apex beat being two and a half inches internal to the nipple line, agreeing with the percussion dulness. The breath sounds were almost absent over the left chest; there were no adventitious sounds. Cough sound was not tried, neither was succussion sound. There was no expectoration nor hæmoptysis and but very little pain. The diagnosis of partial pneumothorax was made and also probable penetration of the lung. The wound was cleaned up and dressed but was left unprobed, while the patient was ordered to remain still under the watchful care of the almost panic-stricken barber, and instruments were got ready in case the wound either in the lung or parietal pleura should act as a valve and render an immediate operation necessary, and finally, an electric cargo lamp was swung overhead. The patient's condition improved during the night and he slept fairly well, the breathing becoming less shallow and the symptoms of shock passing off.

On the following day the patient seemed fairly comfortable but complained of pain in the left side of the abdomen just beyond the end of the eighth rib. The left chest was resonant except at the back in the wound area where possibly there was some dulness. The breath sounds on the same side were extremely faint, being practically absent. The temperature was 99°. On the 23rd he spat blood two or three times during the morning, but his condition was good and he was quite comfortable except for the pain in the left side of the epigastrium, which was not at all severe but was increased by coughing or a "big speech." The temperature was 99°. Heart dulness began above between the third and fourth rib, the apex beat and left limit of cardiac dulness being one inch internal to the nipple line, while it did not extend to the right of the sternum. The liver dulness was normal and the liver could not be felt, though the abdomen was flaccid. Resonance and breath sounds were normal; there were no adventitious sounds or dulness. On the 24th no blood-spitting had occurred since 1 P.M. the previous day. The patient had no cough but felt comfortable and well, only having slight pain in the left epigastrium on deep inspiration or changing his position. The thorax was quite normal except that behind at the left base the breath sounds were fainter than on the opposite side, but the resonance was equal. The temperature was 98.4°. The tongue was clean and the abdomen was soft. The man was moved into his quarters on account of the South-West Monsoon. On the 25th and 26th his temperature was 99° but he was otherwise well.

On July 27th the coalsie was discovered sitting up quite normal in all respects, though he complained of pain on the previous night. On the 28th there was still a little pain. On the 29th the patient was very well and happy, complaining of pain for the last time. The breath sounds at the left base behind were harsher and more audible than on the right side. Other signs were normal. The wound had healed by first intention. On the 31st he commenced walking about but had anaesthesia in the left epigastrium beyond the end of the eighth rib about two inches by three inches in extent. On August 3rd the chest was normal in all respects but the anaesthesia continued. The patient was seen up to August 5th, when having reached port he went ashore and was lost sight of.

I consider the chief point of interest about the case is its affording another proof of the rapidity with which air can be absorbed from the pleural cavity. As regards the damaged, if not severed, while with respect to the changes at the left base it is difficult to say to what they were due, but a possible explanation is that there was at first an inflammatory exudate giving slight dulness and afterwards diminished breath sounds, even when the note was not impaired; then absorption took place and also some fibrosis of

the wounded lung, which thus became a better conductor of sound and caused harsher breath sounds. No doubt there are other points that might have been noticed but I must plead the difficulties to which a ship's surgeon is subjected: he cannot speak the language, is helped in all small matters only by an incompetent barber, and last, but not least, has to contend against the noise of the engines, steam steering gear, and South-West Monsoon.

Ashburton, Devon.

A SUGGESTION FOR THE TREATMENT OF CASES OF CHRONIC SCIATICA AND SIMILAR FORMS OF NEURITIS.

BY J. CURTIS WEBB, M.A., M.B., B.O. CANTAB.

CERTAIN cases of sciatica, or indeed of any form of neuritis, are at times of so obstinate a nature as to be the despair of the unfortunate sufferer as well as of the one or the many medical men from whom alleviation is sought. Some cases are slight and yield easily to treatment but in a large number remedy after remedy is tried in vain, till at last the disease may seem to exhaust itself and leave the patient worn out by pain, with more or less stiffness in the limbs, and the retrospect of months wasted in invalidism and of a purse much lightened by fruitless searches after relief. In many cases, too, even if the trouble be not continuous, it may disappear, only to recur again at shorter or longer intervals with equal or even increased severity till the unfortunate patient feels that his nerve is like a volcano constantly on the verge of an eruption and liable to break out on the smallest stimulus. Having for some long time past been using static electrical treatment for a variety of diseases, and having had some remarkably successful results in several most obstinate and chronic cases of sciatica, I am anxious to bring this remedy more prominently before the profession. And here let me mention for the benefit of those who are ignorant of this form of electricity that it differs radically from currents derived from battery or dynamo on the one hand—whether continuous faradic, sinusoidal, or polyphase—and from "high-frequency" currents on the other. Its voltage is enormous, its ampérage infinitesimal, and its frequency of pulsation (for it is not alternating in ordinary circumstances) anything that the operator wills. It is unnecessary here to say more than that I employ for the class of case under discussion the Morton wave current, the brush, and indirect sparks. Those who possess static machines will know the modalities I refer to; those who do not would find a long dissertation on influence machines and their methods of use wearisome and useless. The important point at the moment is the *result* of the treatment, specially as it applies to sciatica or other forms of neuritis. Let me briefly mention a few cases.

CASE 1.—An officer in the army, aged 40 years, got his first attack of right-sided sciatica in Cashmir in November, 1895. The pain extended from the notch to the heel. While his pain was not so severe as to cause him to be invalidated for any length of time it always came on if he got over-tired or much worried, and at times would quite cripple him. When he came to me in October, 1904, he had had a severe attack since August. He could hardly walk, and sitting was accompanied by great pain in the sciatic notch. He had static treatment and no other remedies for about four weeks, when he went away quite free from pain or stiffness. In December, 1905, he wrote me that he "had a slight reminder of it in January which lasted less than 24 hours and since then has had absolutely no return of the sciatica at all." I saw him a few days ago and he is still quite free. Considering that since November, 1904, he has been engaged in work in Ireland necessitating long bicycle and jaunting-car rides in all weathers and sleeping in wayside inns and that he has also had a great deal of brain work and worry I think one may regard his cure as fairly established, though the malady had lasted nine years. There is no stiffness whatsoever left.

CASE 2.—A man, aged 59 years, has always had a tendency to sciatica in both legs. It was sometimes severe, sometimes slight, but he was always liable to attacks on the slightest provocation. When I saw him in June, 1905, he had been suffering rather severely in the left leg, so I put him on static treatment. He only had six applications when he was quite

free from pain and in May, 1906, he told me he had had no sciatica all the winter in the limb I had treated though he had had it in the nerve of the opposite side to a slight degree.

CASE 3.—In December, 1905, a man, aged 53 years, came to me from Herefordshire. He had been suffering from sciatica in the left leg since early in the preceding August. Prior to my seeing him he had been to Droitwich, where he had 32 brine baths with massage and "battery." He was no better and after being at home for ten days he went to Bath and had dowsing radiant heat and daily applications of the "battery." After this he came to town to consult a nerve specialist who advised rest in bed for a fortnight and a mixture. This treatment he continued for five weeks without much benefit. He was at the same time taking sulphate baths and having mustard leaves applied over the nerve. Although when he came for treatment he stayed at a hotel within five minutes' walk of my house he was compelled to come round in a four-wheeler, into, and out of, which he always had to be helped. He commenced the applications on Dec. 12th and came twice a day and returned home on the 27th cured, save for a little stiffness. I should add that, in addition to the static treatment, the patient had a few applications of the x rays and some concentrated arc light along the line of the nerve. As the stiffness still persisted he returned in February, 1906, and had six treatments when the stiffness left him. In June his wife reported that he was perfectly well as far as his sciatica was concerned, though he did occasionally have general gouty sensations all over, but never any tendency to a return of his old symptoms, and on Nov. 1st he wrote that he still remained free from pain and could walk well without any limp.

CASE 4.—This is a peculiarly interesting case, as the patient, aged 29 years, was, at the time of his first attack two and a half years ago, house physician at one of the largest London teaching hospitals. The attack was so acute that he was "warded," and was therefore in a position to have the very best advice and treatment. He was in hospital for three weeks and then went to Buxton for three weeks and later to Aix-les-Bains for nearly two months. He got somewhat better and took up his appointment in November, 1904, and worked for five months, but always in some pain, and used to take aspirin and receive electric baths and applications in the special department of the hospital. He then had another acute attack and from that time till I saw him in July, 1906, he had tried almost every form of treatment. He had been to Bath for two months, where he was on a sofa nearly all his time with such severe pain that he had to use morphine hypodermically. He had had three weeks at Droitwich and a month at Salsomaggiore. The nerve had twice been stretched by the closed method. He had had dowsing light treatment, radiator light, massage, high-frequency, and De Watteville current applications—in fact, everything that money could procure or the united talent of his hospital staff could suggest had been given a trial. When he first came to me the pain was so bad on standing or walking that he could take no exercise and was quite unable to follow his hospital work. He has had a total of 72 static treatments and is now able to play two rounds of golf a day without feeling his leg unless he gets very tired; he can spend hours going round the wards of the hospital or standing watching operations; and he can play tennis and is just now taking up a resident appointment at another large metropolitan hospital. His progress was slow at first. He began treatment on July 26th and ceased temporarily on August 11th, when he was better, but far from cured. I went away for my holiday and he proceeded north. On Sept. 8th he wrote me: "It is high time I reported the marked improvement I have made. I can play occasional sets of tennis, and one afternoon I played three rather long ones in complete comfort—a fourth rather stirred up the sciatica again, but I felt none the worse for it next day. I still feel the indefinite pain hanging about, always varying a little, but still I am very pleased to be able to do as much as I can, and am in great hopes that another dose of static electricity may effect a cure." I mention this point as I wish to draw attention to a fact about electro-static treatment—viz., that very often one seems to be only making slight progress during a course of applications, but that if one stops for a time the improvement goes on steadily. In many instances the treatment aggravates the symptoms at first, which I always regard as a good sign, inasmuch as in

my experience I find that it indicates that the trouble is not too chronic for improvement to be hoped for. Oct. 1st treatment was recommenced and ceased Oct. 22nd, he being apparently cured. Of course, this has not yet stood the test of time, but, judging from previous results, I see no reason why, with ordinary care the patient should relapse. He is to-day quite free of pain and able to do all the work of his hospital appointment. I have purposely not touched on any of the early static or other forms of neuritis that I have treated. I find invariably, if the patient be not too advanced in years, can effect a rapid cure in these cases if one can get it right from the onset. All forms of neuritis or neuralgia provided they are not due to pressure of tumours or of irremovable cause, are among the most satisfactory of many cases that can be cured or relieved by this potent therapeutic agent.

Bina-gardens, S.W.

A CASE OF INFLUENZAL MENINGITIS

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TRAVELLING FELLOW IN THE UNIVERSITY
OF OXFORD.

ALTHOUGH cases of meningitis occurring during, following immediately upon, an attack of influenza have from time to time been reported in this country, the number of instances in which Pfeiffer's bacillus has been recognised in the cerebro-spinal fluid or in the meningitic exudate is not numerous. It seems, however, that it is much more common to find this bacillus in such situation accompanied by other organisms than to find it in a pure state. Althaus,¹ in his monograph on influenza, mentions that several observers had seen meningitis and meningo-myelitis in consequence of an attack of this disorder. Weichselbaum quotes Pfäfl² as being the first to show that Pfeiffer's bacillus could be found in the exudate of certain cases of meningitis and also gives references to the work of several other observers. P. M. F. Stéphane Dubois³ at a later date collected 11 examples of meningitis in which the bacillus influenzae was present, a post-mortem examination having been made in the case of nine, whilst in the remaining two the organism was found during the life of the patient. He deals in a very thorough manner with these cases, concluding, as also does Weichselbaum, that the meningitis is generally secondary to affection of the naso-pharynx and adjoining sinuses, more rarely to middle ear disease, occurring in consequence of a pre-existing, and more usual type of influenza.

Besides the cases collected by Weichselbaum and Dubois other examples of meningitis, in which Pfeiffer's bacillus was present in the exudate, have been described by Thomae⁴ and Graefski,⁵ by Mya⁶ (three cases), and in this country by Nuthall and Hunter⁷ (three cases), and by Bury.⁸ Nuthall and Hunter found a bacillus which, morphologically and in staining properties, resembled the bacillus of Pfeiffer, mingled with pathogenic cocci in three out of ten cases of cerebro-spinal meningitis examined by them with bacteriological methods. They mention that a similar organism had been demonstrated by Nauwerck, Högarstedt, and Leichtenstern, and state that Slawych⁹ and Lander¹⁰ had recorded undoubted instances of a meningitis caused by the bacillus influenzae. Bury brought forward Dreschfeld's case in which the necropsy was performed by Moore who found in the exudate, in sections stained with dilute carbol-fuchsin, bacilli resembling those of Pfeiffer and mentions some other cases which are also quoted in the papers mentioned above.

¹ Althaus: The Pathology and Prevention of Influenza.

² Weichselbaum in the *Handbuch der Pathogenen Mikroorganismen*, edited by Kolle and Wassermann, vol. III., p. 238.

³ Pfäfl: *Berliner Klinische Wochenschrift*, 1892; quoted by Weichselbaum.

⁴ Stéphane Dubois: *Thèse de Paris*, Nov. 27th, 1902, No. 42.

⁵ Thomae and Graefski: *Bulletin de la Société des Sciences Médicales de Bucharest*, II., 1904, abstracted in *Revue Neurologique*, 1905, p. 44.

⁶ Mya: *Gazetta degli Ospedali e delle Cliniche*, xxvi., 1903, abstracted in *Revue Neurologique*, 1903, p. 704.

⁷ Nuthall and Hunter: *Brit. Med. Jour.*, 1901, vol. II., p. 784.

⁸ Bury: *Ibid.*, 1900, vol. II., p. 878.

⁹ Slawych: Included also in Dubois's cases.

¹⁰ Lander: *Jahrbuch für Kinderheilkunde*, 1901, quoted by Nuthall and Hunter.

The introduction of the examination of the cerebro-spinal fluid withdrawn by lumbar puncture to clinical methods has given us a chance of determining the presence of the micro-organism responsible for a cerebro-spinal meningitis during the life of the patient and so of placing the diagnosis of the condition on a sounder basis. It is to be hoped that this will lead to the identification of the influenza bacillus in certain cases of meningitis, even though the patient recovers from the attack. For contamination of an organism quickly occurs after death, as is well shown in the case recorded below.

The patient, a female infant, aged ten months, was admitted into St. George's Hospital under Dr. H. D. Rolleston's care on March 22nd, 1906, with a two days' history of rigidity, general pains, and irritability. No tuberculosis, rheumatism, or fits occurred in the family history, the patient being one of six children, all of whom were healthy. The child was born at full time by normal labour, was fed on cow's milk, and had had no previous illness. During the two days previous to admission the patient had had several attacks of rigidity and general pain on movement but slept well—occasionally screaming during sleep. On the day previous to admission the child vomited three times. She had no cough, fits, or diarrhoea.

On admission the infant was well nourished and was lying in bed on her right side giving vent, about every half hour, to occasional screams. The anterior fontanelle was patent, pulsating, and presented a slightly increased tension on palpation. No squint, inequality of pupils, or paralysis of the ocular muscles was observed and the discs were clear. The tongue was moist and clean, while the heart and lungs were normal. The abdomen was slightly distended and tympanitic. There were no enlargement of the spleen, no ascites, and no sweating. As regards the nervous system, all the cranial nerves were normal and the retinal discs were clear. There were no muscular wasting and no obvious loss of power in the muscles, all of which presented good tonus. Kernig's sign was present and slight rigidity of the neck muscles, but no obvious head retraction. Sensation was apparently normal. All deep reflexes were increased, but no clonus could be elicited. The abdominal and epigastric reflexes were absent, while the plantar reflex was of the extensor type. At this time the temperature was 101.2°F ., the pulse was 136, and the respirations were 48 per minute.

On March 26th the child had become semi-comatose and exhibited a squint owing to paralysis of both external recti muscles. The ocular discs remained clear and occasional twitching of the levator anguli oris was noticeable together with slight weakness on the left side of the face. The abdomen was less distended, while the anterior fontanelle was bulging more, but still pulsated. Nasal feeding had become necessary. Lumbar puncture was performed, five cubic centimetres of fluid being withdrawn. This contained many polymorphonuclear leucocytes, much albumin, and was yellowish in colour. Examination of the cerebro-spinal fluid showed that the freezing point gave $\Delta = -0.75^{\circ}$ and that sodium chloride was present up to 0.78 per cent. In the fluid were many feebly staining fine, short bacilli, which culturally and microscopically corresponded with the influenza bacillus.

On March 27th the child entered a series of spasmodic states, commencing at 6 A.M. During these all the limbs were extended with rotation inwards of the forearm with fingers adducted and thumb flexed across the palm. The feet were inverted and the toes were hyperflexed. The spasms were tonic in character and persisted about half a minute, the limb spasm being accompanied by marked opisthotonos and bilateral contraction of the abdominal muscles. The hyperextended limbs were strongly adducted and the eyes were rolled upwards. The face did not appear to participate in the spasms. The onset of such a spasm was heralded by 10 or 12 deep inspirations, but during the attack the chest was fixed in the expiratory position. Except five minutes, the child lay motionless and did not respond to stimuli. The anterior fontanelle was still bulging, and the illness the pulse-rate was increased, varying between 124 (minimum) and 144 (maximum). The temperature was raised, varying slightly about 102° , but fell to normal on the morning preceding death (March 27th) and throughout that day gradually rose to 104.8° at 10 P.M. The respiratory rate varied between 48 and 32.

Necropsy.—I made a thorough post-mortem examination 12½ hours after death and found the body to be well

nourished and all the thoracic and abdominal organs healthy with the exception of the lungs, which were emphysematous throughout with scattered areas of collapse, the liver, which showed cloudy swelling, and the pancreas and kidneys, which were somewhat congested. The skull was healthy, but on removal of the vault a quantity of nearly clear fluid escaped. Both middle ears contained thick mucus but no pus. The brain was well developed but was much swollen and somewhat softened and its convolutions were flattened. Over the surface of the organ under the pia mater was a quantity of thick green pus which was distributed along the line of the blood-vessels, both over the vertex and the base. The upper aspect of the cerebral hemispheres were more especially attacked in the frontal region. Here the pus formed a continuous layer stretching over all the gyri which lie in front of the fissure of Rolando, which itself was almost obliterated by the septic process. Behind this fissure the sulci were glued up by the exudate, but the summits of the gyri were almost free of pus. Below, the fissure of Sylvius was occluded and the pus lay upon the posterior part of the gyrus rectus on each side. In front of the chiasma and over the anterior surfaces of the temporal lobes the pus was thickly accumulated. Behind this pus was present over the mesencephalon and pontine regions, spreading outwards over the under surface of the lateral lobes of the cerebellum. In this region there was rather more pus over the right than the left cerebellar lobe. The contiguous surfaces of the occipital cerebral lobes and the cerebellum appeared to have almost escaped, a few beads of pus being alone evident along some of the blood-vessels save over the culmen monticuli, where a marked accumulation was in evidence. The lateral ventricles did not appear distended nor did they contain pus. Slight congestion of the brain substance was evident on section. The inner surface of the cerebral hemispheres was covered with pus along the lines of the blood-vessels, whilst over the upper aspect of the corpus callosum was a marked accumulation. The pus did not seem to have penetrated into the depths of the fissures. The fornix and corpus callosum were softened and infiltrated with pus. Covering the posterior and lateral aspects of the spinal cord was a thick layer of pus extending throughout its length. In thickness the purulent material was nearly as great as the diameter of the cord. The anterior surface of the cord was free from inflammatory exudate. Histological examination of the purulent exudate confirmed the naked-eye appearances.

Dr. O. Slater examined the cerebro-spinal fluid obtained during life by lumbar puncture, but found no tubercle bacilli in stained smears. There were seen, however, many small weakly stained bacilli in specimens treated with methylene blue, which were of the shape and size of Pfeiffer's organism and were situated both intra- and extracellularly. They took the dye rather better when stained with carbol-thionin blue, but lost the stain when treated by Gram's method. Some of the fluid was inoculated on agar, serum, and broth. At the end of 48 hours there was no growth found, but on adding some sterile blood to these tubes a good growth of typical colonies of influenza bacilli was obtained in an uncontaminated condition. Dr. Slater further examined pus taken at the necropsy from the surface of the brain, some of the intraventricular fluid and some of the mucus from the middle ear. Smear preparations of each of these materials showed the same organisms. On agar the pus from the surface of the cerebrum gave a practically pure culture of Pfeiffer's bacillus, whilst the mucus from the middle ear and the cerebro-spinal fluid gave a good growth of influenza bacilli mingled with a sarcina flava and the bacillus coli communis. Similar results were seen on serum tubes inoculated with the same materials. The Pfeiffer's bacillus was further subcultured for some little time on blood agar. No animals were inoculated with the bacillus, as no sufficiently typical phenomena have been described in the case of animals injected with living cultures of the influenza organism to aid the diagnosis.

In examining the literature I have been unable to find any other case of meningitis due to Pfeiffer's bacillus reported in this country in which the organism has been obtained in culture both from the cerebro-spinal fluid during life and from the meningeal exudate after death.

In conclusion I should like to record my thanks to Dr. Rolleston for allowing me to publish the medical notes of the case recorded above, and to Dr. Slater, the director of the clinical laboratory, for permitting me to record his bacteriological investigations.

St. George's Hospital.

THE PERSISTENCY OF THE INFECTION IN CERTAIN CASES OF SCARLET FEVER.

By H. POOLE BERRY, M.B. LOND., M.R.C.S. ENG.,
MEDICAL OFFICER OF HEALTH OF THE BOROUGH OF GRANTHAM.

DURING the past 12 months we have been passing through an extensive epidemic of scarlet fever in the borough of Grantham. Our estimated population is 17,929 and the area of the borough (1677 acres) is sufficiently small to have enabled me to obtain a very close and intimate knowledge of the various relationships which have existed amongst the patients affected. I have been for 18 years medical officer of health of the borough and during all this time, although our methods of dealing with the infection of scarlet fever until recently have not been drastic, the patients being isolated as far as possible in their houses, previously to the present epidemic I have only known of one instance in which a "return" case occurred—that is to say, a fresh case occurring in the same house after the recovery and disinfection of the patient and the premises.

During the present epidemic 331 cases have been notified. We have isolated 217 cases in hospital and have employed a nurse to assist in the isolation and subsequent disinfection of those patients who remained at home. Indeed, all ordinary precautions were taken, but still the disease continued to spread, and after much careful investigation I came gradually to be sure that this was due to some means other than those generally accepted. In the light of recent investigation my attention was naturally drawn to the possibility of infection being conveyed by means of those patients who had apparently recovered, and I have been forced to the conclusion that the infection may in certain cases remain in the patient very much longer than has been generally supposed. According to my investigations there were 19 cases which, after apparently complete recovery and disinfection, gave rise to 23 other cases, and I have reason to suspect that not a few others were due to this cause. It is also evident that this persistency of infection was not confined to patients treated in hospital, for three at least of these "infecting" cases were treated at home. Comparing these results with my previous experience, it appears necessary to presume that this persistence of infectivity may exist in some epidemics and not in others. The following cases testify to my conclusions as previously expressed:—

Alfred P—, taken ill on Nov. 23th, 1905; treated at home. Sidney P—, admitted to hospital on March 2nd, 1906; discharged on April 23rd.

Florrie B—, taken ill on Nov. 25th, 1905; treated at home. Winifred B—, admitted to hospital on Jan. 17th, 1906; discharged on March 1st. Doris B—, admitted on Jan. 17th; discharged on Feb. 24th. Cecil B—, admitted on Jan. 23rd; discharged on March 28th.

Dorothy S—, admitted to hospital on Dec. 13th, 1905; discharged on Jan. 25th, 1906. Horace S—, admitted on Feb. 27th, 1906; discharged on April 18th.

Clecy C—, admitted to hospital on Dec. 14th, 1906; discharged on Jan. 31st, 1906. Clara C—, admitted on Feb. 4th, 1906; discharged on March 16th. Winifred C—, admitted on Feb. 4th; discharged on March 21st.

Balth P—, admitted to hospital on Dec. 18th, 1905; discharged on Feb. 14th, 1906. Hilda P—, taken ill on Feb. 25th, 1906; treated at home.

Eleanor U—, admitted to hospital on Jan. 20th, 1906; discharged on March 15th. John U—, admitted on March 22nd; discharged on May 22nd.

Cecil A—, taken ill on Feb. 7th, 1906; treated at home. Daisy A—, taken ill on March 31st, 1906; treated at home.

Teddy W—, admitted to hospital on Feb. 6th, 1906; discharged on April 7th. Leonard W—, admitted on Sept. 2nd; discharged on Oct. 15th.

Hilda P—, admitted to hospital on Feb. 8th, 1906; discharged on March 26th. Winifred P—, admitted on March 30th; discharged on May 12th. Ivy P—, admitted on March 30th; discharged on June 16th. George P—, admitted on April 6th; discharged on May 5th.

Annie M—, admitted to hospital on July 21st, 1906; discharged on Sept. 9th. Sarah M—, admitted on Sept. 14th; discharged on Oct. 25th.

George K—, admitted to hospital on Feb. 11th, 1906; discharged on April 18th. Elsie K—, admitted on April 25th; discharged on June 18th.

Eleanor A—, admitted to hospital on March 16th, 1906; discharged on May 10th. Ernest A—, admitted on May 15th; discharged on July 2nd.

Willie D—, admitted to hospital on April 21st, 1906; discharged on June 11th. Arthur D—, admitted on August 3rd; discharged on Sept. 18th. Louie D—, admitted on Oct. 20th.

George C—, admitted to hospital on May 28th, 1906; discharged on July 13th. Florence C—, admitted on Oct. 27th; discharged on Nov. 23rd.

John T—, admitted to hospital on July 29th, 1906; discharged on Sept. 12th. George T—, admitted on Oct. 8th; discharged on Nov. 19th.

Ross B—, admitted to hospital on August 11th, 1906; discharged on Sept. 22nd. Charles B—, admitted on Oct. 9th; discharged on Nov. 23rd. Bertie B—, admitted on Oct. 9th; discharged on Nov. 26th.

Charles C—, admitted to hospital on August 21st, 1906; discharged on Oct. 22nd. George C—, taken ill on Nov. 9th; treated at home.

Hilda H—, admitted to hospital on Oct. 9th, 1906; discharged on Nov. 14th. Edith H—, admitted on Nov. 24th. Martha H—, and Mabel H—, admitted on Dec. 2nd.

Edith O—, taken ill on Nov. 25th, 1905; treated at home. William O—, admitted to hospital on Oct. 29th, 1906; discharged on Dec. 4th.

If the dates of these cases be carefully noted it is surprising to find how long an interval elapsed in some instances after the recovery of the "infecting" case before the development of the disease in the "return" patient. I have been at some pains to eliminate the possibility of fresh infection occurring in these cases. Indeed, in the last case mentioned the time interval seems to be almost incredibly long. But if the infection may persist for some two months why may it not persist longer? The prolonged infectivity of a gleet after a gonorrhoea is recognised as existing for an unknown length of time, and I am inclined to the belief that the scarlet fever infection may similarly persist, lodged possibly in some of the nasal chambers, and that, moreover, it may lie dormant for some time until some suitable condition may render it capable of transmission. I have not a few instances amongst my recorded cases which afford evidence very strongly confirmative of this opinion. I am also inclined to the view that in some of those instances constantly referred to in our text-books, when the poison is presumed to have been harboured in infected garments for a length of time, the spread of the infection may not improbably be due to the harbouring of the infection in the convalescent patient rather than, as has been presumed, in the infected garments.

I ought to add, for our credit's sake, that of the 217 cases isolated in our hospital up to the present time, though there have been many serious cases with grave complications, we have discharged 201 with no deaths, whereas amongst the 114 cases isolated in their own homes there have been three deaths.

Grantham.

A CASE OF DERMOID CYST IN THE RAMUS OF THE JAW.

By N. J. F. VAZIFDAR,

SIR JAMSETJI JEEJEEBHoy HOSPITAL, BOMBAY.

THE patient, a Hindu woman, aged 22 years, was admitted into Sir Jamsetji Jeejeebhoy Hospital on Feb. 1st, 1906, for a tumour in connexion with the right ramus of the mandible. The history of the case was that the tumour—which was evidently of a longer duration—was first noticed about four years back as a hard round mass of the size of a small marble near the temporo-maxillary articulation. There was a previous history of a fall from a staircase when the patient was two years old. The accident was a severe one and the patient had hemorrhages from the mouth, the ears, and the nose. The growth had been quite painless and did not at all interfere with the movements of the joint. It increased very slowly and gradually to its size when seen; it was then three inches in diameter. There were no constitutional effects, the patient keeping excellent health all the time and only seeking advice because of the disfigurement. For the last six months the tumour—perhaps owing to its size—somewhat interfered with the movements of the joint, the jaw could not be opened to its fullest extent, and the tumour was somewhat painful on manipulation. It was smooth, hard, and irregularly round. Its upper limit reached as high as the zygoma and its lower one was at the level of the lower margin of the body of the mandible; anteriorly it came in front of the anterior border of the masseter muscle, whilst posteriorly it approached the posterior border of the ramus. It was firmly fixed to the bone and the skin over it was moveable. There were neither any signs of inflammation nor any implication of the overlying soft parts which were only tightly stretched over the tumour. There were no enlarged glands. Eruption of all the teeth was normal and there had never been any tooth trouble.

All the usual dental tumours being excluded by the normal

eruption and sound condition of all teeth and by the fact of the tumour first appearing at the temporo-maxillary articulation and thence extending downwards, the case was diagnosed as probably one of myeloid sarcoma, and an operation was performed by Lieutenant-Colonel W. H. Quicke, I.M.S., senior surgeon of the hospital. An exploratory incision was first made when the ramus was seen to be expanded from within. The bone being cut open with a chisel and hammer a cyst was revealed filled with soft epithelial-like flakes. The flakes were all removed and the cyst wall, which was partly adherent to and lining the bony cavity, was thoroughly scraped off and removed. The cyst growing inside had also to some extent expanded the body of the mandible where one of the fangs of the third molar was seen. The fang was quite normal. The bony cavity was then cleaned and stuffed with iodoform gauze, and it finally healed by granulation, the healing taking a long time, and the patient was ultimately discharged cured on June 14th.

The case is of interest on account of the unusual site selected by the dermoid. A dermoid within the structures of a bone and at a place where during embryonic life there is no union between two skin-covered surfaces is a surgical anomaly and one which I venture to explain as follows. At birth the mandible is a mere shell of bone containing the sockets of the temporary teeth and covered by the mucous membrane of the gums. Probably by some accident—and perhaps due to the very accident above referred to—a portion of the mucous membrane got into this shell-like bone and remained confined therein, only awaiting some irritation to determine its development into a cyst in the same way as the other so-called implantation dermoids are formed. Another marked feature of the case was the difficulty experienced in diagnosis. The only diagnosis which could be arrived at was that of a myeloid sarcoma, and indeed the appearance of the tumour was quite typical of that disease. The cyst growing inside had expanded the bone in the fashion of a myeloid sarcoma, and in fact there was some obscure sensation of egg-shell crackling at one part of the tumour. The hardness and innocency of the tumour were accounted for by assuming that the sarcoma had undergone a happy termination, viz., ossification, and indeed chondrification and ossification of sarcoma are not uncommon.

I am indebted to Lieutenant-Colonel Quicke for permitting me to report this case.

Bentley.

I Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est illa pro certo nocendi via, nisi quamplurimas et nobilissimas et disiectissimas historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Prooemium.

HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET.

TWO CASES OF INJURY OF THE HEAD IN CHILDREN.

(Under the care of Mr. H. A. T. FAIRBANK.)

CASE 1. Traumatic subdural hæmorrhage without any lesion of the skull.—The patient was a healthy girl, aged one year and nine months. On May 19th, 1906, at 11 A.M. she fell off a chair on to her head. For 15 minutes she seemed all right and ate some bread and butter, then "the eyes became fixed" and she rapidly became unconscious. At 2.30 P.M. she became convulsed on the right side, the head being turned towards the left shoulder. On admission to the Hospital for Sick Children at 3.30 P.M. there was twitching of the right arm and leg and the right side of the face. The head and eyes deviated to the left. The pupils were dilated, equal, and did not react to light. Twitching was soon followed by paralysis of the whole of the right side. There was slight response to pinching but the deep and cutaneous reflexes were absent. With the onset of paralysis the pupils became smaller and remained equal. There was no squint. The pulse was 110 and the temperature was 97° F. At 4.15 P.M. the skull was trephined over the left middle meningeal artery and the hole enlarged backwards. There

was no extradural hæmorrhage. The dura mater bulged tense and blue into the opening and on incising it there was a gush of thin unclotted blood which continued to flow for some minutes and then ceased. The right arm was immediately moved voluntarily and the leg movements soon returned. No bleeding point was found and the wound in the dura mater was closed except for a small gauze drain. Within an hour of the operation the child was quite conscious and there was no trace of paralysis. The dressings were repeatedly soaked with cerebro-spinal fluid in spite of the head being raised. At 11.30 P.M. the temperature had risen to 103°, the respirations were fast and irregular, and the pulse was feeble and rapid. About 6 A.M. on the following morning, as the child was unconscious, the gauze drain was removed and some dark blood escaped. The child died at 7.30 A.M.

Necropsy.—At the post-mortem examination no fracture of the skull, gross lesion of the brain, or rupture of blood-vessels was found. There was a marked scarcity of cerebro-spinal fluid and between the dura mater and the brain on the side of the operation was a thin film of blood—quite insufficient to produce symptoms.

CASE 2. Fracture of the skull with cerebral symptoms.—A boy, aged four years and three months, was admitted to the Hospital for Sick Children on August 1st, 1906. 20 minutes before admission he fell off the steps of a tramcar on to the street, a height of about six feet, landing on his head. He seemed dazed by the fall, but did not lose consciousness and was able to walk. Ten minutes later the left arm and left side of the face were noticed to twitch and later the right side also twitched. He vomited and became drowsy and was at once taken to the hospital. On admission he was quite unconscious and was having clonic convulsions of all the limbs and face as much on one side as on the other. Ten minutes later the convulsions had entirely passed off and the limbs were quite flaccid. The breathing was stertorous. The pupils varied constantly in size, being at one moment dilated, at the next contracted, but always remaining equal. The pupils reacted sluggishly to light. The head and eyes deviated first to one side and then to the other. There were no facial paralysis and no squint. The knee-jerks were present and a flexor response was obtained in the right foot but none in the left. There was a hæmatoma above the right ear. No depressed fracture was made out.

Operation was performed about 50 minutes after the accident. No anæsthetic was given during the initial stages of operation. A little chloroform was administered later. A flap of scalp was turned down above and in front of the right ear. A fissured fracture was found running horizontally backwards from the external angular process of the frontal bone and extending beyond the limits of the wound which measured two and a half inches across. There was no depression of fragments. The skull was trephined just below the anterior part of the fissure. There was no extradural hæmorrhage and the dura mater pulsated feebly. On enlarging the trephine hole backwards a local bulging of the dura mater, somewhat dusky in colour, was exposed. A small incision was made through the dura mater at this spot but no blood was found within reach of the puncture. The dura mater was closed by a couple of stitches and the flap sutured in place. After the operation the boy was restless and even violent, but after about seven hours he regained consciousness. From that time he made an uninterrupted recovery.

Remarks by Mr. FAIRBANK.—Grave cerebral symptoms which are the result of traumatism and which call for surgical interference are so rarely met with in children that the above cases seem worthy of publication. In the first case the indications for treatment were sufficiently clear, though want of experience of such injuries in young children rendered the diagnosis of the source of the blood doubtful. The disappointing termination after the symptoms had been entirely relieved by operation was probably the result of the loss of cerebro-spinal fluid. Yet it did not seem to be a wise procedure to close the dura mater entirely without drainage, since the source of the hæmorrhage had not been discovered. The procedure was justified by the occurrence of the second small hæmorrhage. The result of the post-mortem examination showed that it would have been useless to hunt for the ruptured vessel.

In the second case the localisation of the lesion would have been difficult but for the presence of the hæmatoma over the right motor area, the region of the brain which the symptoms seemed to indicate as involved in the injury. The operation only revealed the presence of a

fractured fracture, so the cause of the cerebral symptoms must be left in doubt. The presence of minute hæmorrhages into the cerebral cortex may be suggested as an explanation. Since the incision made in the dura mater was minute and the hole in the skull not very extensive, it is difficult to see how intracranial tension can have been relieved to any extent by the operation. Unless the trephining did some good in this way it necessarily follows that probably the child would have recovered with equal rapidity had nothing surgical been done.

LIVERPOOL WORKHOUSE HOSPITAL.

RUPTURE OF THE SPLEEN; SPLENECTOMY; RECOVERY.

(Under the care of Dr. W. ALEXANDER.)

FOR the notes of the case we are indebted to Mr. John T. Moore, resident medical officer.

The patient, aged 34 years, a labourer and an ex-soldier, was admitted into the Liverpool workhouse hospital on August 5th, 1906, complaining of pain in the left side of the abdomen. He stated that upon the night before admission, while under the influence of drink, in the course of a row with another man, he fell over a form and hurt his side. After the injury he went to bed and slept. The next morning he arose at the usual time and went to his work, which consisted in wheeling a heavy barrow. He commenced work at 5 A.M. and struggled on till noon. During this time he felt bad and had two pints of beer, part of which he vomited. He then sought admission to the hospital.

On admission the patient complained of severe pain in the left hypochondrium. His temperature was normal. There were no signs of injury or fracture of the ribs. Opium stupes were ordered and later he said that he felt better and slept fairly well. On the evening of the next day, August 6th, the pain in his side became intense; he vomited three times, his respirations became frequent and chiefly thoracic, the pulse was small and frequent, and the temperature fell to 97.6° F. The abdomen was retracted and the liver dulness was apparently diminished. It was evident that some serious internal injury existed. An exploratory operation was proposed and agreed to by the patient. The abdomen was opened at 8.30 the same evening by a median incision. The left hypochondrium was found full of blood clot and the spleen ruptured. The vertical incision was now prolonged to the left just below the costal margin. The blood was confined to the left hypochondrium and the colon was distended, which accounted for the diminished liver dulness. Bright blood was gushing up from the left. The spleen was at once brought into view, having to be scraped off the parietes owing to old adhesions. It was found to be surrounded by firm clots and to be ruptured in two places. The pedicle was clamped, the spleen was excised, the stump ligated, and the blood clot was removed. The patient at this stage became extremely collapsed. An intravenous injection of 30 ounces of normal saline solution containing one drachm of 1 in 1000 adrenalin solution was given by Dr. R. Donaldson whilst the operation was rapidly completed. After the removal of blood and clots the cavity was swabbed out with saline solution containing adrenalin, and as there was some oozing and the patient was much collapsed the large cavity was packed with sterile gauze and two large gauze drains in split rubber tubes were placed in the lower corner of the wound. The incision in the abdominal wall was closed in the usual three-tier way. He was removed to bed, the lower end of which was well raised. He had small rectal salines and fluids by the mouth every two hours, strychnine hypodermically (1/20th of a grain) every four hours, and 1/4th of a grain of morphine to check the intense restlessness. The temperature remained at 97° and the pulse was very small, 130 during the night. The shock continued to a considerable extent all the next day, the pulse being from 130 to 136. At 4 P.M. the temperature rose to 100.4°, gradually coming down to normal towards morning. The patient was fed with small quantities frequently, meat juice, beef-tea, chicken broth, and egg fillet alternately, and four-hourly rectal nutrients were administered. On the 8th the shock had passed off, the gauze and drainage tubes were removed, and small gauze drains were applied. During the day he vomited three times and the bowels were moved; at night he had a troublesome cough which was relieved by jacket poultices and a steam tent. On the 9th his condition was about the same. On the 10th the wound was again

dressed. Vomiting had ceased, but the cough was troublesome. Bronchitis was present all over the chest and there was friction at the right base posteriorly. The temperature went up to 101°. From this date the patient's condition improved daily: his chest cleared up, the temperature became normal, the wound was dressed every second day, and the convalescence was uneventful except for another attack of pleurisy and bronchitis which lasted for about a week. A blood count early in October showed 3,967,480 red cells and 6758 white cells per cubic millimetre. The patient went to town quite well on Nov. 20th.

The spleen was a shade larger than usual at the time of removal; it was somewhat collapsed and there were two holes in its surface through which blood was seen oozing before the pedicle was clamped.

Remarks by Dr. ALEXANDER.—There are several points in this case that are of interest to the profession. The history of the case, though not reliable owing to the partial intoxication of the patient, points to a fall over a form and the injury to the spleen would probably not have occurred but for the adherent condition of that organ. Its convex surface was fixed to the diaphragmatic peritoneum and had to be peeled off by the fingers at the operation. It could not move to avoid the crush and so was injured when a moveable spleen would probably have escaped. Again, the hæmorrhage was at first undoubtedly inside the capsule and had the patient been able to rest it might never have gone beyond that position. But after a good night's rest he had to get up and work "wheeling a barrow." Even when he came into hospital the same afternoon he was not in an alarming condition, nor did he show urgent symptoms until the next morning. The rupture of the splenic capsule probably did not take place until some time after he was in bed in the hospital, as at the operation the blood was entirely confined to the left hypochondrium. This would hardly have occurred had bleeding been going on whilst the patient was moving about, as blood would in that case have trickled down into the lower abdomen. It was especially noticed that this had not occurred.

The next point is that we did not operate on account of a ruptured spleen. We did not know what had taken place but the symptoms indicated grave internal lesions and the operation was at first exploratory only. The retraction of the abdomen and the lessened liver dulness pointed rather to an injury of a hollow viscus than of a solid organ. The collapse, the rapidly falling pulse, the shallow breathing, &c., all called urgently for an exploration, and as an exploration in itself is not dangerous, nor does it add materially to the gravity of the case, we performed it, although we had no idea at the time of the nature of the injury.

An important point in the case is the great and manifest value of adrenalin and saline transfusions. After the spleen was removed the condition of the patient became alarming, and the feeling of my anaesthetist and of some of my assistants was that the patient was dying. Dr. Donaldson rapidly inserted the transfusion needle into the usual vein in the arm and passed one drachm of adrenalin solution mixed with one and a half pints of normal saline solution into the circulation. The effect was immediate and enabled me to finish the operation satisfactorily. The value of adrenalin was also shown in its effect on the oozing from the bleeding surfaces from which the ruptured spleen had been removed. The oozing ceased as if by magic when we pressed on the bleeding surface gauze soaked with adrenalin solution, and we were then able to place our gauze drains in position comfortably.

On August 10th I left for Canada and Mr. Moore took entire charge of the case. The credit of piloting the patient through various pulmonary complications is entirely due to his care and skill. When I came back the patient was convalescent, his blood count was practically normal, and there were no signs that such an important organ had been removed.

PRIVATE ASYLUMS FOR THE INSANE IN ST. PETERSBURG.—At a recent sitting of the St. Petersburg town government it was decided to make an experiment by subsidising private homes to the initial extent of £1000 for patients of weak mind, so as to relieve the pressure on the hospitals. Although some members argued that the step was calculated to encourage "angel making" the decision was given in favour of the argument of others who held that there were many wholly trustworthy people to whom the care of insane persons might be given.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Demonstration on the Spirochæta Pallida.—A Note on the Pathology of Syphilis.—Observations upon Cheyne-Stokes Respiration.

A MEETING of this society was held on Jan. 8th, Mr. W. HARRISON GRIFFS, a Vice-President, being in the chair.

Dr. ALEXANDER MACLENNAN gave a demonstration on the *Spirochæta Pallida*. He said that it could not be definitely settled that the organism was the infective agent in syphilis. This could only be done by successful cultivation and inoculation. He could, however, accentuate the following points: 1. The organism had not been found in experimentally infective material. 2. It was admittedly scarce in the surface discharge in primary and secondary lesions, possibly because the organism was anaerobic. 3. Congenital syphilis was considered to have a low infective power while its lesions teemed with spirochæta. On the other hand, the infectivity of the tertiary lesions was more in conformity with the numbers of spirochæta present. 4. Smaller forms which were related to the spirochæta were invariably present in preparations from the lesions. He did not consider that there were sufficient data to accept definitely the spirochæta pallida as specific, but he accepted its presence as diagnostic of syphilis. This might seem rather paradoxical, but the explanation was that the spirochæta pallida was only one phase in the life cycle of the infecting organism. He then demonstrated by means of lantern slides the various stages and the method of reproduction. Two methods were described, one by longitudinal division and the second by the formation of "buds." These two methods might occur in the same spirochæta. He then demonstrated the life cycle of the organism.

Mr. J. JACKSON CLARKE read a preliminary note on the Pathology of Syphilis. He said that the object of his communication was to call attention to the connexion between the spirochæta pallida described by Schaudinn in 1905 and the protozoa in syphilitic lesions which he described ten years ago. Those acquainted with the commoner parasitic protozoa would recognise the striking resemblance of these bodies to such protozoa. Diagrams were shown illustrating this resemblance. Mr. Clarke believed that the bodies which he had described in 1895 were homologous with the "gregarine" phases of the spirochæta Ziemanni as described by Schaudinn. The gregarine-like bodies occurred in such great numbers and were distributed in the lesions of syphilis in such a way that the causal relationship of the mobile spiral forms (spirochæta or spiroplasma) to the disease must remain doubtful unless they could be shown to be members of the same cycle that also included these gregarine-like forms.

Dr. FREDERICK TAYLOR said that he, in conjunction with Dr. M. S. Pembrey, Dr. A. P. Beddard, and Dr. Herbert S. French, had made certain observations on two cases of Cheyne-Stokes Respiration. The first case was one of typical Cheyne-Stokes respiration lasting almost continuously for over six months in a patient who was proved by necropsy to be suffering from chronic renal disease, and in whom Dr. E. Farguehar Barnard had examined the pons and medulla microscopically and had found many foci of softening around sclerosed arteries. The second case had equally typical Cheyne-Stokes respiration following upon injuries received in a lift accident; he recovered so that the precise lesion was not verified. In each case, amongst other investigations, the effects of giving the patients (1) pure oxygen; and (2) air containing high percentages of pure carbon dioxide, were recorded graphically. The supply of oxygen and of carbon dioxide respectively was controlled by a tight-fitting mask with appropriate valves. The periodicity of Cheyne-Stokes respiration in both cases was converted into the continuous respiration in both cases by the administration either of excess of oxygen or of excess of carbon dioxide. The conclusions which were submitted for discussion were—That apparently the periodicity of Cheyne-Stokes respiration was in great part due to a diminished excitability of the nervous system associated with a defective supply of arterial blood; the carbon dioxide

accumulated and the oxygen diminished until at last the nerve cells were stimulated, the waxing respirations began and culminated in hyperpnoea whereby a large quantity of carbon dioxide was washed out and sufficient oxygen was taken in; apnoea followed, due apparently to the absence of sufficient carbon dioxide to stimulate the nerve cells. That the inhalation of air containing more than 2 per cent. of carbon dioxide abolished apnoea by maintaining the partial pressure of the carbon dioxide in the alveolar air and blood at its stimulating value. That the administration of pure oxygen by means of a mask and valves abolished apnoea by maintaining the partial pressure of carbon dioxide in the blood at its stimulating value; the respiratory centre was no longer excited by lack of oxygen to send out the forcible impulses which had previously resulted in excessive ventilation of the lungs whereby carbon dioxide had been washed out of the alveoli and lungs.

Dr. M. S. PEMBREY said that he, in conjunction with Dr. G. Newton Pitt and Dr. R. W. Allen, had made observations upon Cheyne-Stokes Respiration. The patient was admitted under the care of Dr. Newton Pitt with aortic incompetence and a history of some temporary weakness of the right arm of doubtful origin some months previously. He shortly developed a slight left hemiplegia with marked Cheyne-Stokes respiration, which persisted for three months till the time of his death, on which Dr. Pembrey and Dr. Allen made many observations indicated below. There was also incontinence of urine which varied but never cleared up entirely. At the inspection there were found a large area of softening involving the region round the Sylvian fissure on the right side, and degenerative changes in the vagal nucleus. Dr. Hoffmann insisted that persistent incontinence, of cerebral origin, was always due to bilateral cerebral lesions, but in this case the lesion was one-sided, though the incontinence was not so persistent as in the cases he referred to. It was found that the Cheyne-Stokes respiration could be controlled and abolished either by giving the patient pure oxygen to breathe, by increasing the amount of the carbon dioxide, or by diminishing the amount of the oxygen in the air respired, or by certain combinations of these proceedings. They concluded that the periodicity of Cheyne-Stokes respiration was due to a diminished excitability of the nervous system; the carbon dioxide accumulated and the oxygen diminished until at last the nerve cells were stimulated, the waxing respirations began and culminated in marked dyspnoea, whereby the carbon dioxide was washed out and a large quantity of oxygen was taken in; apnoea then followed, due apparently to the absence of sufficient carbon dioxide to stimulate the nerve cells. This view of the condition of the nerve cells of the respiratory centre was amply confirmed by the microscopic examination obtained after death—only a small proportion of the cells of the vagal nucleus having a normal appearance.

OBSTETRICAL SOCIETY OF LONDON.

Chronic Metritis.

A MEETING of this society was held on Jan. 2nd. Dr. W. R. DAKIN, the President, being in the chair.

Dr. ARCHIBALD DONALD read a paper on Chronic Septic Infection of the Uterus and its Appendages. Dr. Donald dealt chiefly with septic infection which involved the uterine appendages as well as the uterus. The cases in which the uterus was chiefly involved were discussed more fully. The clinical history and symptoms of these cases were considered and special attention was drawn to the discomfort or pain which was felt in the hypogastrium or iliac regions and which was so characteristic of a heavy uterus. In dealing with the pathology of chronic metritis the great divergencies of opinion as to the microscopic anatomy were noted. The three main theories as to the cause of chronic metritis were discussed—namely, (1) passive congestion; (2) inflammatory change; and (3) muscular hypertrophy. Reasons were given why the mere alteration in position of a healthy uterus was not likely to cause passive congestion and chronic metritis, but it was pointed out that the treatment by pessaries and suspension operations was founded on the assumption that a displacement did cause these changes. Dr. Donald objected to the use of pessaries and the performance of suspension operations for cases of mobile retroversion on the ground that these methods could never

cure the chronic metritis, which was at the root of most of the symptoms.

Dr. W. FLETCHER SHAW then gave a lantern demonstration and read a paper on the Pathology of Chronic Metritis. The conclusions arrived at in this paper were the results of the examination of 45 uteri extirpated for chronic metritis, 38 being uncomplicated cases, while seven occurred with some concurrent pathological condition. For the purpose of comparison 23 normal uteri were also examined. The main results arrived at were as follows. Chronic metritis was a simple hypertrophy of the mesometrium and was not a connective-tissue hyperplasia. The vessel changes were variable, and as similar affections were as frequently found in normal uteri they could not be considered as the cause of the symptoms. Except two cases, which could be easily explained, every specimen of uncomplicated chronic metritis also suffered from chronic endometritis. There was no evidence of active inflammation, as shown by small-celled infiltration or cicatricial tissue. Chronic metritis was a slowly progressing affection of the uterus. It was never a primary affection, being usually secondary to chronic endometritis, but might be associated with any pelvic or uterine disease leading to increased uterine contraction or vascularity—viz., fibroids, tubo-ovarian disease, &c. Chronic metritis occurred at a much earlier age than the menopause and thus proved that the climacteric was not the causal factor. The diagnosis of chronic metritis was largely dependent on the result of treatment. In the early stage of the affection all the symptoms disappeared after dilatation and curettage of the uterus, thus demonstrating that the endometritis was the primary cause. In chronic metritis and chronic endometritis local treatment of the endometrium might fail to relieve the symptoms. This was probably due to re-inauguration of the endometritis.

The PRESIDENT thanked Dr. Shaw for his valuable paper. It was an important step towards putting the study of so-called "metritis" on a scientific basis. The President used the term "so-called metritis" because so far as he could see there was nothing indicating inflammation in any of Dr. Shaw's sections or descriptions; in fact, both "metritis" and "endometritis" as used at present by many did not necessarily mean anything connected with inflammation. These terms, however, led students and others astray and ought to be reserved for inflammatory processes. He would appeal to both Dr. Donald and Dr. Shaw, as among the pioneers in this research, not to countenance such misuse of terms.

Dr. CULLINGWORTH, speaking of the papers by Dr. Donald and Dr. Shaw, said that the two authors, though both were Manchester men, had not worked in collaboration, but approached the subject independently, the one from a clinical, the other from a pathological standpoint; they had gradually become aware of each other's work and of the fact that the conclusions at which they had arrived were practically the same.

Dr. AMAND J. M. ROUTH said that no subject in minor gynaecology was more perplexing than that of chronic metritis. Did Dr. Donald and Dr. Shaw consider all their cases to be "septic" in origin? Were not some of them really of the type usually known as arterio-fibrosis of the uterus?

Dr. H. RUSSELL ANDREWS said he thought that Dr. Shaw deserved the thanks of the meeting for his clear demonstration of the fact that there were no characteristic histological changes in "chronic metritis." One reason why some gynaecologists were loth to accept chronic metritis as a clinical entity was that the slides and micro-photographs used to illustrate some papers on this subject showed changes in the muscle, connective tissue, and vessel walls which were said to be pathognomonic of chronic metritis though they differed in no way from what was seen in normal multiparous uteri. He thought that this was one of the most interesting points in a very interesting demonstration.

Dr. OUTHBERT LOCKYER expressed his hearty appreciation of Dr. Shaw's admirable and painstaking work upon the much vexed question of the pathology of so-called chronic metritis. He thought that the society owed a debt of gratitude to Dr. Shaw for his paper and demonstration which constituted the first really scientific attempt at evolving order out of chaos (as far as this subject was concerned) which had been presented for discussion at the Obstetrical Society of London. Dr. Lockyer particularly noted that Dr. Shaw's series of cases did not include one type of uterus in which he himself was

especially interested and to which attention had been drawn by Dr. J. R. Goodall at the meeting of the British Medical Association at Toronto in August, 1906—viz., the arterio-sclerotic uterus. Attention had been drawn to this condition not only by Dr. Goodall but by Dr. A. H. Freeland Barbour in a paper entitled "Climacteric Hemorrhage due to Sclerosis of the Uterine Vessels," and, as that writer states, the only remedy for the hemorrhage was removal of the uterus. Dr. Lockyer cited a similar case from his own practice at St. Mary's Hospital, Plaistow, and it was surprising to him that in such an extensive research Dr. Shaw had not met with this condition. Dr. Lockyer would therefore like to hear from Dr. Shaw whether he regarded every case of so-called chronic metritis as of infective origin, or if he would admit the entity of a primarily arterio-sclerotic uterus occurring independently of any source of infection from without.

Dr. FRANK E. TAYLOR said that he had been much impressed by two points during the routine pathological examination of a considerable number of uteri, similar in character to those described by Dr. Donald and Dr. Shaw, which had been removed on account of excessive and intractable hemorrhage. The first point was the extreme variability of the histological findings presented by the various specimens examined, some uteri presenting histological features which differed very slightly from those of normal uteri, whilst others presented most striking changes, especially as regards the thickness of the vessel walls in the myometrium. All intermediate stages were likewise observed. The second point was the lack of a normal standard with which to compare the conditions found in chronic metritis—as to what amount of thickening of the vessel walls in the myometrium could be considered pathological and as to the significance of the relative proportion of fibrous to muscular tissue present, along with the difficulty of definitely ascertaining this proportion. Both Dr. Donald and Dr. Shaw had laid great stress on the importance of infection as a causative factor in the etiology of chronic metritis and had mentioned the frequency with which the symptoms dated from a confinement or miscarriage presumably septic. Now gonococcal was probably as frequent as puerperal infection of the pelvic viscera. Hence it might have been expected, if infection were really an important factor, that a history of gonococcal infection would have been present in a certain proportion of the cases, but of such a possible origin neither Dr. Donald nor Dr. Shaw made any mention.

Dr. DONALD and Dr. SHAW replied.

LIVERPOOL MEDICAL INSTITUTION.

Duodenal Ulcer.—Operations during Typhoid Fever.—Lymphatic Leukæmia.—Forgotten Medical Worthies.

A MEETING of this society was held on Dec. 20th, 1906, Mr. FRANK T. PAUL, the President, being in the chair.

Mr. G. P. NEWBOLT read notes of a case of Perforating Duodenal Ulcer complicated by Abscess of the Lung in a male patient, aged 30 years, who had previously been in robust health. The treatment was by injections of polyvalent serum. Frequent attempts were made to localise the abscess with exploring needles; the abscess eventually emptied itself, on some days from a pint to a pint and a half of pus being expectorated. Finally the patient made a good recovery. The organism isolated conformed to the type of streptococcus termed *streptococcus salivarius* by Andrewes and Horder.

Mr. W. THRELWALL THOMAS read notes of two cases of Surgical Operations during the Course of Typhoid Fever—one for perforation and one for appendicitis—both of which terminated in recovery. He drew attention to the fatal character of perforation unless surgically treated, when the recovery rate was 30 per cent. or more. Although in many cases the diagnosis was uncertain it would be wiser to explore (under local anaesthesia) than to wait until general septic peritonitis had set in. The treatment of the perforation by quick suture or the formation of a fecal fistula appeared to be the two alternatives—fancy work such as enterectomy with end-to-end anastomosis was not to be recommended; enterostomy had the further advantage of draining the typhoid intestine and keeping it at rest. The first patient was a man who had been walking

about until a few days before symptoms of perforation occurred; the case was diagnosed as perforative appendicitis and was immediately operated upon with the result that a typhoid perforation was found. The second patient was a young woman in the third week of typhoid fever; though a provisional diagnosis of perforation was made at the operation acute appendicitis was found. Mr. Thomas briefly described two other previous cases in which he had operated for typhoid perforation without being able to save the patients' lives.—The PRESIDENT referred to two cases: one illustrating the difficulty of making a certain diagnosis in typhoid perforation; in the other a perforation 12 inches from the cæcum occurred three months after the onset of typhoid fever. In the latter case the ulceration was so extensive that the perforation could only be closed by excising it and the patient died nine days after the operation.—Mr. T. O. LITTLE JONES mentioned a case which he had operated upon successfully last July. A lascar boy was taken to the Liverpool Infirmary at the end of the second day after perforation of a typhoid ulcer. Simple suture of the ulcer was performed and the abdomen was cleaned of intestinal contents. The boy was transferred to his ship three weeks afterwards. Perforation was rare in Hindus and the infection was comparatively slight.—Mr. R. W. MURRAY said that better results from operative interference would probably be obtained if, as a general rule, the bowel at the point of perforation was brought to the surface and a fecal fistula temporarily established. Such an operation could be quickly performed and would have the great advantage of permitting the inflamed bowel to rest.

Dr. R. J. M. BUCHANAN read a paper on Acute Lymphatic Leukæmia. He drew attention to the rarity of the disease and said that in its symptom complex it resembled in many ways an acute specific fever. The blood picture was one quite different from that seen in myeloid leukæmia and was due to a hyperplasia of definite cell elements. The features of the disease were illustrated by an acute case of nine days' duration in which the symptoms pointed in the later stages, on the one hand, to a morbid state of the blood and, on the other, to an acute abdominal lesion, most probably hæmorrhage into the pancreas. A blood count revealed a lymphocytosis of 523,000 per cubic millimetre. The case was under the care of Dr. O. R. Scholfield of Southport, to whom Dr. Buchanan expressed his thanks for the notes of the early condition.—The paper was discussed by Dr. E. E. GLYNN, Dr. W. CARTER, and Dr. R. R. HURTER.

Dr. A. CASSELS BROWN read a paper entitled "Two Forgotten Medical Worthies." The subjects of the paper were Dr. Gabriel Broughton and Dr. William Hamilton, both of whom played somewhat important parts in the early struggles of the "Company" in India.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Patients.

A MEETING of this society was held in the Edinburgh Royal Infirmary on Dec. 19th, 1906, Professor W. S. GREENFIELD, Vice-President, being in the chair.

Mr. J. M. COTTERILL exhibited the two following cases. 1. The Rare Condition of Lympho-Sarcoma occurring in the Lower Part of the Neck in a Young Man. He said that the diagnosis of such cases was difficult and that they were frequently mistaken for fibro-lipomata or tuberculous disease. The disease grew very quickly and irregularly; it also became adherent to the skin and other tissues without pain or inflammation and in both these respects it differed from tuberculosis. Tuberculosis of the glands usually began high up in the neck; this disease, however, usually commenced in the mediastinum or axilla and extended upwards to the neck. In the case described it occupied the lower portion of the neck on the left side and extended under the trapezius muscle. 2. A case in which Decompression for Brain Tumour gave great relief from the urgent symptoms. The patient was a man and the diagnosis was very difficult. A large piece of the frontal and parietal bones was removed for purposes of diagnosis. As it was impossible to remove the cerebral tumour, the bone was not replaced, thus allowing of a large hernia of the brain. This relief of pressure had afforded the patient great comfort, the intense headache from which he formerly suffered having disappeared and the sight in the left eye having undergone improvement; photophobia, which formerly was present, had disappeared. Mr. Cotterill referred

to another case in which he had removed a portion of bone with the result that a large hernia of the brain of the size of the two fists had formed. This gradually became absorbed and at the present time, eight years after the operation, the patient had only a depression in the skull and had almost completely recovered from his former condition.

Dr. ALEXANDER BRUCE showed a man suffering from Primary Progressive Myopathy. The condition was in the family and a brother of the patient suffered much in the same way. The muscles of the back and the gluteal muscles were so weak that the man had to throw his shoulders far back, so placing his centre of gravity well behind his feet. The most peculiar feature of the case lay in the marked atrophy of the muscles of the proximal parts of the arms and lower extremities. The hands remained almost as strong as ever and so did the muscles of the forearm, but the upper arm was very weak; the biceps was atrophied and he possessed very slight power of flexing his elbow-joint. In the right arm certain fibres of the triceps were well developed. There was a marked atrophy of the clavicular fibres of the pectoral muscles and there was a certain degree of alar winging. The thigh resembled the upper arm in the atrophy of its muscles, but the calves were very well developed, as were the muscles of the forearm.

Dr. R. CRANSTON LOW showed a case of Keloid Acne which had undergone great improvement after 12 exposures to the x rays during six months.

Mr. H. ALEXIS THOMSON showed a man, aged 45 years, after Incision and Drainage of a Mesenteric Cyst. It contained semi-fluid material of the colour of *café au lait* with fat droplets and cholesteroline. The cyst wall was partly calcified. The operation was performed three years ago and a sinus was still present.

Mr. C. W. CATHCART showed a patient after removal of the Gasserian Ganglion for Epileptiform Neuralgia. The patient, who was a woman, 35 years of age, was admitted to the Edinburgh Royal Infirmary on Nov. 4th, 1906, on account of severe epileptiform neuralgia on the right side of the face, head, and neck. The symptoms began about three and a half years ago by a pain in the lower jaw, coming on in spasms. After these had continued for about a year and had gradually increased, she was admitted on account of the pain to a hospital, where an operation was performed on the side of the neck. Portions of the cervical nerves supplying the face and neck were excised as the pain seemed to be most felt in the distribution of those nerves. The patient declared that she was worse after this operation and that the pain extended into the region of the upper as well as into the lower jaw. The teeth in both sides of the upper jaw were removed with no improvement. The teeth in the lower jaw were then also removed but without benefit. Portions of the supra- and infra-orbital, and mental nerves were then excised and for a month the patient was free from pain. It afterwards, however, returned and was only partially relieved by morphine, strychnine, bromide, and quinine. In October, 1906, she was under Dr. Byrom Bramwell's care for a fortnight and the hypodermic injection of strychnine in gradually increasing doses was tried but without avail. On going home after leaving the infirmary she was attacked by the pain with renewed vigour and was taken into the surgical side as no further medical treatment seemed available. She was fairly well for about a week but after that time the pains returned with terrible severity and her condition became pitiable. The whole ward was disturbed by her cries night and day in spite of large doses of morphine. The operation for removal of the ganglion was undertaken on Dec. 5th by Cushing's median direct method. A horseshoe incision was carried from the external angular process of the frontal bone to a point just in front of the ear. The skin flap was thrown down, the zygoma cleared of periosteum and removed, as well as a portion of bone in the temporal fossa extending from a little below the level of the anterior inferior angle of the parietal bone to a little below the infra-temporal crest. The brain and dura mater were lifted up and the ganglion was seized with forceps after having been freed from its sheath of dura mater. The superior maxillary division of the fifth nerve was torn through while the ganglion was being separated from the dura mater. The ophthalmic division of the fifth nerve was divided with scissors just as it left the ganglion and the inferior maxillary division of the fifth nerve was divided. In being twisted out the ganglion gave way where it was joined by the sensory root, but the latter had meanwhile been torn out of the pons and was easily removed after the ganglion had been taken away. The patient had made a

good recovery. She had had no pain in the head or neck, although the operation was performed in the middle of one of her bad periods. The regions of the distribution of the three divisions of the fifth nerve were now quite anæsthetic. It was noteworthy that in spite of the removal of portions of the three divisions of the fifth nerve, as well as of several branches of the cervical plexus to the head and neck, sensation had returned in all the regions which had been at first rendered anæsthetic by these operations.

Dr. EDWIN BRAMWELL showed an unmarried woman, aged 36 years, with very pronounced Weakness and Wasting of the Muscles of the Left Arm and Hand supplied by the seventh and eighth cervical and first dorsal spinal roots. There was some objective sensory loss in the corresponding distribution, while the left eye presented the oculo-pupillary syndrome which resulted from a destructive lesion of the cervical sympathetic. These symptoms had developed gradually three years previously and their onset had been accompanied by severe pains in the region of the left shoulder and the ulnar aspect of the forearm. At a later date paralysis of the right external rectus and of the right side of the face, together with deafness in the right ear, had developed. In addition there had been some paresis of the left lower extremity. The coexistence of two independent and probably extra-medullary lesions was suggestive of syphilis. A cutaneous scar presented characteristics of a healed luetic ulcer. The diagnosis was confirmed by the rapidity with which the cranial nerve palsied; the paresis of the left leg and the paresis in the left arm had yielded to anti-syphilitic treatment.

Dr. GEORGE MACKAY showed a miner incapacitated for work by Vertical Diplopia and wearing strong prisms nine months after a penetrating injury of the orbit by a piece of steel. The fragment was localised by the x rays and its removal was aided by Volkmann's magnet. The diplopia was practically removed by tenotomy of the superior rectus.

Dr. R. W. PHILIP showed a case of Extreme Dyspnoea successfully treated by means of Béraneck's tuberculin. The patient, who was a woman, aged 40 years, was sent to Dr. Philip's ward in the Royal Infirmary by Dr. John R. Hamilton of Hawick. She had been for four months in a sanatorium and had improved somewhat, having put on about 2 stones in weight. None the less she had remained extremely breathless, the dyspnoea being more or less constant and from time to time paroxysmally aggravated. The dyspnoeic attacks were most formidable and sometimes threatened suffocation, especially by night. Examination of the chest showed, in addition to considerable areas of dulness, a large number of rhonchi. The symptoms and signs had suggested the probability of pressure by enlarged, presumably tuberculous, bronchial glands. On this hypothesis Dr. Philip had treated her with tuberculin, using Béraneck's preparation. Commencing with 0.1 cubic centimetre of 1 in 100,000 saline solution he had gradually passed to 0.3 cubic centimetre of 1 in 10,000, the tuberculin being administered at intervals of two or three days. After the first few doses the dyspnoea began to lessen and for the last 12 days the patient had been completely free not only from the paroxysms but from breathlessness altogether. Her nights were completely undisturbed. Examination of the chest showed it to be free from respiratory accompaniments.

Mr. JOHN W. DOWDEN demonstrated cases of Fracture about the Elbow-joint.

Dr. HARRY RAINY showed a case of Paralysis Agitans which exhibited several unusual symptoms.

Mr. JOHN W. STRUTHERS showed a patient after recovery from Chronic Intussusception with Inversion of the Vermiform Appendix.

Mr. A. A. SCOT SKIRVING showed two patients after operation for Ruptured Gastric Ulcer.

Mr. E. W. S. OARMICHAEL showed a child, aged two and a half years, whose Cæcum and Ascending Colon had been Resected 16 months previously for tuberculous stricture.

Mr. L. O. PERL RITCHIE showed several cases of Surgical Tuberculosis treated by Tuberculin R.

Dr. G. A. GIBSON showed a case of Landry's Paralysis.

• ROYAL ACADEMY OF MEDICINE IN IRELAND.—A meeting of the Section of Obstetrics was held on Dec. 14th, 1906, Dr. R. D. Purefoy, the President of the Section, being in the chair.—Mr. G. R. Seymour Stritch described a New Form of Pessary which, he said, supported the uterus, in a patient,

aged 80 years, without pressing on an ulcerated cervix. The pessary was made in the form of a ring, supported by a vaginal stem, from the vulvar ends of which tapes were attached for fixation to a waistband. The ring could be hinged against its stem to facilitate its insertion and when in position it could be locked at the required angle to the stem. The uterus hung within the ring free of pressure irritation. The manufacturers were Messrs. Down Brothers of London.—Sir W. Smyly said that in two important points—namely, the joint and the waist attachments—Mr. Stritch's pessary was a distinct improvement on former ones.—Dr. Henry Jellett showed a Uterus affected with Cancer of both Cervix and Fundus. He said that cancer of the cervix was in the past considered to be one of the indications for supra-vaginal amputation of the cervix and he thought this specimen showed the untenable nature of such a position. The specimen was also a rare one, and Oullen in his work on cancer of the cervix only recorded half a dozen cases. Cases of cancer occurring at both the fundus and the cervix might be divided into two classes—namely, (1) those in which the two cancers were independent of one another; and (2) those in which it was possible to trace definite connexion. In the present case of a patient, about 54 years of age, he had operated for cervical cancer and had no reason to suspect fundal cancer. The first thing he saw on opening the abdomen was a slight adhesion of the intestines to the fundus. The operation was a fairly radical one and the patient unfortunately died from the shock 14 hours after. The operation had to be very extensive, on account of the necessity of taking away almost the entire upper third of the vagina. In the specimen a fine line of connexion could be seen between the two growths, and this presumably followed the lymphatics traversing the muscular wall from one growth to the other. The operation was performed by Werder's method, as described in Oullen's "Cancer of the Uterus."—The President said that the case reminded him of one that had been under his care, in which the uterus contained two varieties of cancer, one in the cervix and one deep in the tissue of the fundus, no microscopic or macroscopic connexion being between them. The disease in both localities was not very far advanced and the patient made a good recovery.—Sir W. Smyly presented a specimen of Ovarian Cyst. He said that the case showed all the characteristics of an ovarian tumour except that he could not isolate the uterus from the tumour. The uterus moved with the tumour and though he thought that it was ovarian in origin he could not make a positive diagnosis.—Dr. Alfred Smith showed a Vesical Calculus with a Nucleus consisting of Pedicle Silk. He said that about three months after the removal of a large ovarian cyst the patient began to suffer increasing pain during micturition and her medical adviser was satisfied that she had stone in the bladder. Her abdomen was so tender that it could not be palpated without an anæsthetic, but when the anæsthetic was administered he found the bladder filled with stone. Having crushed the stone and washed out the fragments he drew out by the urethra with the guidance of the finger and forceps, the ligature shown. The natural explanation of how the ligature got into the bladder would be that there was some inflammatory disturbance around the pedicle, but if such were present it would suppose some evidence of pain, but the only pain complained of was that already mentioned.—Dr. Robert J. Rowlette read, for Dr. Richard J. Kinkead and himself, a paper entitled, "A Case of Labour Obstructed by Fibroid Tumour: Red Degeneration of the Tumour." The patient, a multipara, was admitted to the County Galway Hospital, having been 30 hours in labour; a globular tumour, four inches in diameter, was presenting at the vulva, apparently springing from the anterior lip of the os. As the tumour was very vascular Dr. Kinkead decided to deliver the patient before removing the tumour. Drawing the latter down and forward he applied forceps and extracted a living child. When the placenta came away he cut the pedicle of the tumour with an écarateur. The patient left the hospital quite well on the thirteenth day. The tumour was a typical example of "red degeneration," showing necrosis and congestion. The condition was comparatively rare and was in gestation. The condition was associated with pregnancy. It usually gave rise to marked constitutional symptoms, such as pain, weakness, wasting, and gastric disturbances. Dr. Rowlette believed that the staining was due to a diffusion of the blood pigment consequent on a sudden necrosis of a congested tumour.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 2nd, Mr. T. Geraty being in the chair.—Dr. J. S. Bolton read a paper on the Treatment of Prostatic Congestion by Electrical Methods. In it he pointed out that although the functions of the prostate and its secretion were still imperfectly understood it might be taken as established that (1) urgent symptoms in cases of this sort were attributable to congestion in and about the prostatic urethra, and (2) although actual enlargement, whether glandular or fibrous, might exist in late middle life, the ultimate failure properly to empty the bladder depended on the loss of tone in the muscle-fibres common in old age. Dr. Bolton then related the case of a man, aged 60 years, who had suffered from retention, with a good deal of anal congestion and a foul and turbid condition of the urine. Treatment over several weeks with high-frequency currents applied to the prostate per rectum led to a marked relief of all the urgent symptoms as well as a return of the urine to a healthy state. Later x rays were on three occasions applied to the perineum and scrotum and this produced a considerable shrinkage in size of a large hydrocele which had been in evidence for some years. In a second case, that of a man, aged 54 years, the same conditions obtained, while the pain and frequent micturition had led to a thorough nervous breakdown. In this case also treatment by high-frequency currents was followed by a complete restoration of health and vigour so that the patient was able to return to his work in a tropical climate. The benefit conferred by such treatment appeared to be connected directly with the marked improvement of the pelvic circulation induced thereby.—Mr. Geraty, Mr. W. Morley Willis, Mr. R. G. Hogarth, Dr. W. Tibbles, and Mr. R. E. P. Squibbs discussed the subject and Dr. Bolton replied.—Mr. Hogarth and Miss E. M. Henwood communicated a paper on the case of a woman, aged 56 years, who came under treatment for Extensive Ulceration of the Rectum. The patient had had one severe attack of dysentery 20 years earlier and a second two years before the present illness. When seen by Mr. Hogarth she had been for some weeks in a most distressing condition. She was greatly emaciated, with a weak pulse of 120 and general abdominal pain, and there was continual tenesmus, with the passage of mucus, pus, and blood. Owing to the failure of medicinal and dietetic treatment colotomy was performed on the left side and the bowel below the aperture was kept entirely free from faecal matters and irrigated daily with boric acid solution for about six weeks. Immediately after the operation her condition was for some days exceedingly precarious, as troublesome vomiting set in and femoral thrombosis occurred in both legs. Valuable assistance in the case was given at this stage by Miss A. M. le Pelley and recovery took place. Five months after the original operation a second one to close the opening into the bowel was undertaken and this was improved by a further operation three months later. When seen less than a month ago, and 18 months after the original operation, the patient was in perfect health, had gained considerably in weight, and the rectum had returned to a thoroughly normal condition.—Mr. A. R. Tweedie, Mr. Willis, and Dr. Bolton discussed the case and Mr. Hogarth and Miss Henwood replied.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Jan. 4th, Dr. J. R. T. Conner, the President, being in the chair.—Dr. W. Langdon Brown showed the following pathological specimens: 1. The Brain of a man, aged 25 years, who after an attack of influenza developed tingling and numbness of the right hand, loss of memory, headache, vomiting, early optic neuritis, and subsequently right facial paralysis. A tumour in the left frontal lobe was diagnosed but trephining over that region revealed none. A hernia cerebri developed which the patient infected and he died from meningitis. Post mortem a cystic cartilaginous tumour was found situated in the left occipital lobe. 2. The Heart of a man, aged 46 years, who died from gonococcal endocarditis. When admitted to hospital the patient had a high temperature and marked mitral stenosis; he had previously had pneumonia and an attack of hæmaturia. Infective endocarditis was diagnosed and a blood culture showed gonococci. Post mortem both mitral and aortic valves were narrowed, puckered, and had vegetations on them. There was also acute nephritis which accounted for the hæmaturia. 3. A series of specimens showing hæmorrhage into, and new growths of, the suprarenal gland.

Reviews and Notices of Books.

New Serum-Therapy. By D. MONTGOMERIE PATON, L.R.C.S., L.R.O.P. Edin. London: Baillière, Tindall, and Cox. 1906. Pp. 311. Price 6s. net.

IMPRESSED by the results reported by certain observers from the administration of antidiphtheritic serum by the mouth not only in diphtheria but in other diseases, Mr. Paton during the past eight years has subjected the matter to clinical and experimental study in the course of which we are told that he has employed 3333 ounces of antidiphtheritic serum and 40 gallons of simple plasma from the horse, the sheep, and the ox. His results are given in the book before us, which contains a description of the methods adopted, a series of "clinical papers" on various diseases and pathological conditions in which he has tried the use of the serums, and a theory of natural immunity which he has elaborated to explain his results.

Mr. Paton maintains that antidiphtheritic serum orally administered is practically a specific for septic infections, whether primary or occurring as complications of other morbid processes or infections, while simple plasma—that is plasma from a normal animal—is useful in cases of deficient nutrition from various causes, such as over-lactation and anemia, and also in some cases of tuberculosis. The antidiphtheritic serums used were specially prepared for Mr. Paton by a firm of druggists, one being described as a low potency serum, containing 6000 units to the ounce, and the other, called "special" serum, being prepared by the use of diphtheria cultures grown on a 25 per cent. aqueous solution of normal horse serum. The serum obtained from the horse after inoculation with such a culture is described as having greater "antiproteolytic power" and as being more effective in cases of chronic suppuration. Both serums are given in doses of one drachm diluted to half an ounce with water, the dose being repeated hourly or half-hourly for three or four doses and then every two or four hours as the course of the case may require. So marked are the results as recorded by Mr. Paton that it is difficult not to suppose that his enthusiasm has led him to take a highly roseate view of the effects obtained by the measures which he recommends; at the same time it must be admitted that he records some of his failures as well as his successes, and that he is careful to point out those conditions in which he has found it unavailing, such as pneumonia, gonorrhœa, syphilis, malaria, and locomotor ataxy.

Space does not permit of even an enumeration of the various conditions in which the antidiphtheritic serums and simple plasma have proved of value in Mr. Paton's hands; broadly speaking, they may be classed as septic infections, simple and traumatic inflammations, and various conditions of malnutrition and anæmia. The explanation of the efficacy of the serums suggested by Mr. Paton is that every tissue has a capacity for nutrition, repair, and maintenance of function which may be called tissue tone. This condition or capacity becomes resistance to infection or tissue resistance when it is capable of carrying on the function of the tissue unimpaired in the presence of an infection. Further, this tissue resistance is the fundamental factor in immunity, antitoxins and antibacterial substances being adjuvants. The oral use of plasma from an animal is supposed to convey to the patient the elements elaborated by the animal to produce in its tissues the reactions necessary for the maintenance of the normal tissue tone and to stimulate similar reactions in the patient. Antidiphtheritic serum is assumed to contain a substance which acts upon the involuntary muscle of the body antagonising the depressant actions the products of infective organisms.

another resisting the digestive action of septic organisms distinguished as the antiproteolytic element, and a third leading to increased leucocyte production. By these substances the beneficial effects of the oral exhibition of serum are explained and not by the antitoxin it contains, which is generally believed not to be absorbed in any quantity when the serum is given by the mouth.

Without actual trial it is, of course, impossible, to estimate the value of Mr. Paton's results but as he gives his methods in detail there should be no difficulty in putting them to the test and if in other hands they give only a tithe of the good results claimed for them in this book we shall welcome a valuable addition to our means of treating a group of troublesome disorders. It must be confessed, however, that although illustrative cases are given showing benefit or relief in an extraordinary variety of conditions no actual statistics are given, while in some instances the number of cases has admittedly been as few as two or three. Again, in many cases the conditions were those of chronic disease and the improvement temporary, an association which not infrequently occurs after the administration of fresh remedies in such conditions but not necessarily as a direct result. Again, in appendicitis Mr. Paton maintains that the serum, if given before the formation of pus, "in almost all cases so raises the resistance that the process is quickly moderated and recovery follows." Such a conclusion it would be difficult to accept in a disease which so frequently subsides without suppuration, except after its trial in a very large number of cases. The same criticism applies to other conditions in which it has been tried in only a very few cases, such as acute nephritis, meningitis, and otitis. None the less, the improvement recorded in many of the cases is suggestive and the method is worth a trial but without more extended investigation it is impossible at present to appraise its value.

Pulmonary Phthisis: its Diagnosis, Prognosis, and Treatment. By H. HYSLOP THOMSON, M.D. Glasg., Visiting Physician to the Consumption Sanatorium of Scotland, Bridge of Weir, N.B. London: John Bale, Sons, and Danielsson, Limited. 1906. Pp. 188. Price 5s. net.

THE aim of this little book is to "provide a short and concise account of pulmonary phthisis and be of some help to the general practitioner in the diagnosis, prognosis, and treatment of the disease." It embodies the author's experience gained during five years' connexion with the sanatorium at Bridge of Weir, a period of time which, we may venture to suggest, does not necessarily qualify a writer as an authority on all aspects of the disease in question, but which affords a respectable basis for many observations of value. The first section of the book deals with the diagnosis of pulmonary tuberculosis, as we think the condition is better called, the word phthisis being banished except as a convenient abbreviation for purposes of conversation or note-taking. This section is, perhaps, the weakest in the book, the author scarcely seeming at times to appreciate the real extent of the difficulties presented in recognising the early stages of the disease, while not a little of the advice given appears to be second-hand. The statements themselves are unexceptionable but we doubt whether they will afford any great aid to the practitioner in difficulties; in truth, he must gain his experience for himself or take the advice of those who have done so. The second section deals with prognosis and here we meet with more evidence of the author's own experience and respect his dicta accordingly. As a point of interest we note his view that the occurrence of pyorrhoea alveolaris in the tuberculous patient is of evil omen. The third section is devoted to treatment and here again much useful advice is given as to general and symptomatic measures. Of interest is the author's observation that harm rather than good resulted in the one and only case in which he tried amy-

nitrite for hæmoptysis. We doubt whether there is any special merit in forbidding tuberculous patients in sanatoriums the use of hats. The last chapter of the book deals with tuberculosis in children. We fully endorse the author's regret at the absence of organised effort in this country to provide accommodation for the open-air treatment of pulmonary tuberculosis in the young; indeed, the provision for all forms of tuberculosis in children is sadly inadequate. A more careful revision of the proofs of the book would have removed some grammatical errors, such as "the presence of adventitious sounds are of greater import," "resume the *statu quo ante*," and a few others. We are grateful to the publishers for the rough surface of the paper employed, which is a welcome relief after the highly glazed pages of so many modern books.

The Practical Medicine Series, comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the general editorial charge of GUSTAVUS P. HEAD, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume III, on the Eye, Ear, Nose, and Throat. Edited by CASEY A. WOOD, O.M., M.D., D.C.L.; ALBERT H. ANDREWS, M.D.; and GUSTAVUS P. HEAD, M.D. Series 1906. Chicago: The Year Book Publishers. Pp. 268. Price 6s.

THIS valuable compendium of papers which have been written during the past 12 months on these special subjects has been very carefully compiled by the editors. The papers are, however, somewhat unequal in value. The first 142 pages, which are devoted to the eye and its diseases, are of a more generally worldwide origin than the other two sections, in which the tendency appears to be rather to rely on the journals especially devoted to diseases of the ear, nose, and throat. We think that if the editors could arrange with one or more authorities in each specialty in foreign countries for the transmission of all papers bearing on their specialty worthy of record the result might be a work of such value that no thoughtful worker could dispense with it. However, as things are, the only annual record (in book form) in our language of the work done in these departments is to be found in the *Practical Medicine Series*, and the specialties dealt with owe the editors a debt of gratitude for their energetic and painstaking work.

LIBRARY TABLE.

Aequanimitas. By Professor WILLIAM OSLER, M.D., F.R.S. Second edition, with three additional addresses. London: H. K. Lewis. 1906. Pp. 475. Price 8s.—We reviewed the first edition of Professor Osler's delightful volume of essays in THE LANCET of Dec. 24th, 1904. This, the second edition, besides the essays contained in the first, includes three valedictory addresses delivered before leaving America, one of these being that entitled "The Fixed Period," which created such an excitement at the time of its delivery on account of Professor Osler's ironical suggestion concerning persons over 60 years of age. The closing essay of the book, entitled "Unity, Peace, and Concord," is written with all the breadth of view and the beauty of style which make Professor Osler's writings so characteristic and so valuable, and as the *envoi* to the book we have the remarks of Professor Osler at the farewell dinner given to him by the profession of the United States and of Canada in New York on May 20th, 1905. In this Professor Osler gives his British readers a glimpse at his life in Canada and the United States, and upon reading it we realise more than ever the loss which the United States have sustained and the enormous gain to Oxford which the passage of William Osler from one to the other has brought about.

The Management of a Plague Epidemic. By E. F. GORDON TUCKER, Captain I.M.S. Calcutta: Thacker, Spink, and Co. 1906. Pp. 30. Rs.1.8.—The principles laid down in

this work concerning the management of a plague epidemic are founded on a paper by the author which appeared in *Indian Public Health*. They are published with the view of giving some definite and precise instructions to the medical or civil officer who finds himself in charge of a town or district threatened with plague; such a position is very different in India from what it would be in a European country, owing to the racial and religious prejudices of the people and the difficulty of persuading them to adopt the necessary measures. The author begins by describing the stages of a plague epidemic. As regards the primary infecting agent he places in the order of their importance the following: (1) infected human new arrivals; (2) infected clothing; (3) infected merchandise; and (4) infected rats. The crucial point in Captain Tucker's management is to work on the supposition that a plague epidemic results from a temporary soil infection and therefore to endeavour to educate the inhabitants of any given town or city up to the point of accepting reasonable evacuation of areas in plague seasons. The methods to be employed in evacuation for plague will appeal to all who have had experience in the East as remarkably reasonable and in addition they are of such a nature as not to excite any religious or racial animosity. This little work is likely to be of much assistance to those engaged in plague districts.

A History of Dancing. By REGINALD ST. JOHNSTON, M.R.C.S. Eng., L.R.C.P. Lond. London: Simpkin, Marshall, Hamilton, Kent, and Co. 1906.—Mr. St. Johnston's title is somewhat misleading and, indeed, it is impossible to compress a history of dancing, which is probably the most primitive way of expressing emotion, within the compass of 194 small pages. However, he has given us some interesting notes upon the subject. For instance, in Chapter II., which deals with dancing as a religious ceremony, he omits all mention of the solemn dance still held in the Cathedral of Seville on the Feasts of Corpus Christi and the Assumption, though he mentions that "right up to the middle of the eighteenth century there were traces of religious dances in cathedrals in Spain." At p. 49 he gives an account by an eyewitness of a Morris dance danced in Cheltenham about 40 years ago. A medical man informs us that more recently than this—namely, in 1878—he saw a Morris dance danced in Oxford; the exact date he cannot remember, but it was either just before or just after the day upon which the *Eurydice* foundered in the Channel (March 24th, 1878). The dancers, as in the Cheltenham dance, were dressed in knee-breeches, white shirts with sleeves tied up with ribbons, and carried short sticks. The choragus had a fox's brush attached to his hat and the hats were of a curious shape, something like a hunting cap. Mr. St. Johnston concludes his book with some accounts of modern dancers which are often imperfect, and modern theatre-goers would not acquiesce in the dismissal of the accomplished Mlle. Genée in three lines. The most interesting thing in the book to us is a reproduction of a delightful picture from an early copy of "The Pilgrim's Progress" showing a dance of joy of the pilgrims at the overthrow of Doubting Castle.

Annual Report of the Executive Medical Officer, Municipality of Bombay, for 1905. Pp. 93.—In his annual report Dr. N. H. Choksy deals with the deficient rainfall which occurred in Bombay again in 1905 as in the previous year. This, however, was not local but general over almost every collectorate and Presidency in India, although there were instances of excessive rainfall in places. Evil effects are to be feared from this deficiency during the next hot season, for refugees owing to famine will probably be flocking in numbers to the city, causing much overcrowding. The attitude of the vaccination department is entered into and the question of the somewhat large number of unregistered births is discussed. The annual

death-rate was 61·54 per 1000, against 54·99 in the previous year; excluding the mortality due to plague it was 43·25 per 1000. The increase in the year's rate of mortality was chiefly due to small-pox, measles, plague, fevers, and diseases of the respiratory system. The plague mortality commenced to rise from January and kept its high rate till the end of June, when it began to decline, being very low from October to December. The number of attacks and deaths from this disease registered during the year was respectively 16,308 and 14,193, as against 15,488 and 13,538 during the previous year. There was an epidemic of small-pox during the cold season in Bombay, the advent of the abnormal cold weather being very favourable to its dissemination. Still further, it threatened to spread through the city and to affect all communities alike. The divisional health officers and the district registrars and their staffs took vigorous measures to arrest the progress of the epidemic and to press vaccination by issuing instructions as to vaccination and revaccination and leaflets informing the public of the addresses of ambulances for the removal of patients suffering from small-pox. The mortality among the cases removed to the small-pox hospital was 25·66 per cent. as contrasted with that of those not removed, which was 62·81 per cent. A section of the report deals comprehensively with the subject of plague administration, especially with regard to the systematic examination of rats. Much valuable information has been gathered as to the relation of plague in rats to plague in man. Since the examination began in July the ratio of plague-infected rats to the total number daily collected has risen from 2 per cent. to 20 per cent. The rats were sent to the Farel Laboratory for examination, where bacteriological examination was made of every rat sent, and whenever a rat was found to be plague infected an intimation to that effect was at once sent to the place from which it was derived and also to the divisional health officer; the place was then disinfected. About 1600 rats were examined daily. The report states that it is too early as yet to form any conclusion from the inquiries hitherto made. As regards the effect of the serum treatment in saving life there could be no doubt as to its being of greater efficacy than the ordinary treatment. This report is very creditable as regards the large amount of work that has evidently been performed during 1905 by the health authorities in Bombay.

School Hygiene and the Laws of Health: A Text-book for Teachers and Students in Training. By CHARLES PORTER, M.D. Edin., Barrister-at-Law, Middle Temple. With 119 illustrations. London, New York, and Bombay: Longmans, Green, and Co. 1906. Pp. 313. Price 3s. 6d.—The matter upon which this book is founded formed the basis of a course of lectures delivered to the teachers acting under the Education Committee of Sheffield and the students of the Sheffield Training College. The idea of the education committee in arranging for the course of lectures was to afford the teachers an opportunity of acquiring such information as might assist them in protecting the health of school children. It was desired that the course might include not only instruction in what has been called the "laws of health," which the teachers might in turn impart to the children, but also hints on the manner of detecting diseases likely to be met with in schools. The lectures were largely modelled on the plans set out in the syllabus for the Royal Sanitary Institute examination in school hygiene; each system in the body was taken up in turn, the structure and functions of the organs composing it were considered, and the modes in which they might be affected by school conditions and diseases and how they were to be protected were described. In the first part of the book each system is treated of in a separate chapter. The second part deals with the school building and is largely an extension of the regulations of the Board of Education, 1905,

in connexion with school construction. In this part school furnishing, sanitation, ventilation, and such other subjects as could not well be discussed in the first part are considered. In Chapter XI., which deals with eyesight, the author has had the advantage of the advice of Mr. Simeon Snell, ophthalmic surgeon to the Royal Infirmary, Sheffield, and professor of ophthalmology in the University. One of the best portions of the book is the section which deals with the seating arrangements for the children. The proper seat is one that compels the pupil to sit upright with the head and trunk erect, with the work at the average near-point distance, with the thighs at right angles to the trunk and legs, and both feet flat upon the floor, not on foot-rests, at right angles to the legs. It would be well for all scholars if the adjustable seats and the Anglo-Swiss adjustable desk, or seats and desks of similar patterns, were introduced by compulsion. In many of our large public schools not only are the class-rooms badly lighted and ventilated but the forms and desks are so arranged as to permit boys to sit in a slouching manner during the hours of tuition and preparation; hence, in spite of cadet corps and gymnasiums, they often hold themselves badly. The book is an excellent manual; we wish that the head-masters and house-masters of our public schools were obliged to possess the knowledge which it contains. We look, however, in vain for any suggestions on the difficult subject of punishments for school-boys. At present, in some of our public schools, the cane applied over the nates or, what is worse, over the back indiscriminately, is used as the chief punishment both by the head-master and house-masters, with, we believe, disastrous results in many cases. The old form of birching for the graver offences is, in our opinion, less harmful in every way. We hope that Dr. Porter will add a chapter on the subject of school punishments should a second edition of his book be called for. The illustrations in the volume are good.

Plant Life. By HORACE F. JONES, F.O.S. London: Methuen and Co. 1906. Pp. 260. Price 3s. 6d.—The increasing attention which is being paid to nature-study in primary and secondary schools has resulted in the production of many books the object of which is to educate the observational powers of pupils and to stimulate their interest in the world around them. The present volume belongs to this class of publication. In designing a course of studies in plant life the author has had in mind the difficulties which beset the teacher owing to the limited time at his disposal for this kind of teaching as a special subject and also the obvious restrictions imposed by seasonal and climatic conditions generally. While clearly recognising that the study of plant life ought to be made in natural surroundings—in fields and country lanes—the author has endeavoured to minimise the inevitable restricted conditions of nature-study in schools by calling to his aid small cultivated pieces of ground, a few flower-pots, and some apparatus of a quite simple kind. The book is divided into two parts, the first dealing with plant life in the garden and the second with plant life in the school. Commencing in Part I with a study of the twig and the fall of the leaf, the author next discusses bulbs and tubers, insect visits, fertilisation, and the various devices of nature for the preservation of species and adaptation to environment, closing with an account of the grass family and ferns. In Part II. various experiments in connexion with the physical, chemical, and physiological functions of plants are indicated. An appendix gives some valuable information as to the best time of sowing seeds, transplanting seedlings and plants, and the means and cost of procuring apparatus. A feature of the excellent illustrations is that they have been so drawn as to be copied easily on a black-board. We are glad to see the suggestion that teachers in town schools should obtain and plant, where possible, specimens of common wild flowers. It is a matter for regret

that so few people in these days know the names of many of the most common of our wayside flowers and anything that can be done to foster a knowledge of our native flora is most desirable. The book is an eminently practical one and should form a welcome addition to a teacher's library. Though it may not be found possible in every school to teachers to work with their pupils through the whole course many useful suggestions and hints for object lessons in nature-study can be obtained from the book.

JOURNALS AND MAGAZINES.

Caledonian Medical Journal.—The opening article of the January number contains the clinical lecture by Dr. Willis Russell on Gastric and Duodenal Ulcer, which we publish in this issue of THE LANCET. Dr. W. A. Mackintosh of Stirling the President of the Caledonian Medical Society, describes a Gaelic Medical MS. attributed to the fifteenth century and now in the library of the University of Edinburgh; the part of it consists of translations from the "*Lilium Medicinæ*" of Bernard Gordon of Montpellier in France. The Rev. Hugh MacCallum of Blair Atholl contributes an interesting account of the outlying island of St. Kilda where he once lived for a year as a teacher. Colonel Kenneth Macleod, I.M.S. (retired), formerly editor of the *India Medical Gazette*, relates an unpleasant experience into which journalistic duties led him—namely, a charge of criminally defaming another officer of the Indian Medical Service. At the trial Colonel Macleod was sentenced to a fine of Rs. 300 or a month's imprisonment but on appeal the Chief Justice of the High Court quashed the sentence. Dr. R. C. MacLagar of Edinburgh, in a paper on Folklore, discusses the origin and etymology of the words Duncan and Duncanson; some idea of his arguments may be formed from the circumstance that he quotes without comment the suggestion that "donkey, the animal name, took its origin from some Duncan or other."

The Edinburgh Medical Journal.—The December number opens with an address by Sir Dyce Duckworth on the Dignity of Medicine in which he notes that "the relations between physicians and intelligent patients are hardly as satisfactory now as they were wont to be" and attributes some part at least in the change to defective general education in medical men. Dr. H. G. Melville writes of Primary Broncho-pneumonia in Adults which he considers to be by no means so rare as text-books would seem to imply, the difference between it and lobar pneumonia depending on the varying virulence of the causal organism, and Dr. J. Hally Meikle records some observations on Diphtheria Bacilli in the Throats of Convalescents and speaks in favour of careful local antiseptics. Mr. H. de Merio praises santal for the internal treatment of gonorrhoea.

The Scottish Medical and Surgical Journal.—In the December number of this journal Dr. G. Lovell Gulland writes of Blood Examinations in General Practice and notes incidentally that slight cases of pernicious anaemia are more common than is often supposed, he himself having seen 30 new cases in the last year. Dr. J. W. Simpson recommends the use of preparations of thyroid gland in infantile marasmus and Dr. Edwin Bramwell and Dr. Arthur H. H. Sinclair emphasise the importance of Ophthalmoplegia Interna Unilateralis (surely it should be unilateralis) as a symptom having the same significance as the Argyll-Robertson pupil.

BRISTOL DISPENSARY.—The annual report of the Bristol Dispensary for 1906, which has just been issued, states that during the year 10,323 patients were treated, being an increase of 282 compared with 1905. The financial statement was satisfactory and showed that during the year a legacy of £1424 had been received from the executors of the late Rev. S. Tebbs.

THE LANCET.

LONDON: SATURDAY, JANUARY 12, 1907.

The Benevolent Agencies of the Profession.

THE epitome of cases relieved by the British Medical Benevolent Fund which we print from time to time, and the voting papers issued by the Royal Medical Foundation attached to Epsom College serve to keep before the profession two unpleasant facts—namely, that many members fall upon evil times owing to advanced age or to permanent incapacity, and that when death calls them from a life of ceaseless toil those who are near and dear are too often left poorly provided for and in many cases absolutely dependent upon the charity of friends. To read the brief accounts of cases relieved by these two important medical charities is painful in the extreme, and were it not for the fact that they forcibly remind medical men of their duties to themselves and to their fellow members the publication of such lists would hardly be desirable. From the constant appeals which emanate from the treasurers of both institutions, and in view of the comparatively small grants which are made by the British Medical Benevolent Fund, we are forced to come to the conclusion that there is an almost culpable lack of interest in the benevolent agencies of the profession. This conclusion is supported by two facts. In the first place, out of the 19 candidates for pensionerships from the Epsom College Foundation at the last election in only two instances had the college been supported by the husband or candidate, and the parents of only five out of the 30 candidates for foundation scholarships had contributed to the college in their better days. When we remember that considerable privileges are given, under the by-laws of the college, to candidates whose families have been contributors, thus enabling the foundation to be looked upon as somewhat in the nature of a provident society, it is surprising that comparatively so few medical men avail themselves of the advantages offered. In the second place, most of the leading provincial medical benevolent societies have been established over 60 years and some for over a century, so that we apparently lack the foresight and perseverance of our forefathers. We do not overlook the fact that there are considerable invested funds in connexion with both the London institutions to which we have referred for the purpose of giving pensions, but inquiry would probably show that these are the result of benefactions on the part of deceased medical men and others and are not the savings out of the contributions from members of the profession in practice.

It is universally granted that professional men as a rule are not business-like, and members of our own profession would hardly claim to be excepted from the rule. This, then, is probably the reason that there is so lamentable a lack of forethought on the part of medical men generally, with the

result that the different agencies for rendering help in times of distress are not sufficiently known or fully appreciated. We have frequently drawn attention to the Society for the Relief of Widows and Orphans of Medical Men, the invested funds of which amount to close upon £100,000. Any qualified practitioner living within a radius of 20 miles from Charing Cross may be proposed as a member, the annual subscription being only two guineas, yet, though the names of 6500 medical men appear in the London part of the Medical Directory, there are only 296 members of this society in all. The benefits to be obtained by widows and orphans are far greater than those given by any insurance society, as two or three instances will show. A widow received for herself and family the sum of £2272, though her husband had paid only £18 18s. in subscriptions; three widows received an average of £700 each, whilst another received for herself and family £1654. Yet in spite of the repeated notices which appear in our columns as to the work carried on by the society so small a percentage of medical men eligible to be proposed as cardinals avail themselves of the advantages of this society. There are also several provincial medical charities which are doing much good and which would be able to extend their work materially if they were but better endowed. The Birmingham Medical Benevolent Society carries on a useful work and in two instances £15 15s. paid in subscriptions were returned in grants amounting to £686 and £1247 respectively. The West Riding of Yorkshire Medical Charitable Society is well supported but it deserves to be helped by every medical man in that wealthy and extensive county. The Royal Medical Benevolent Fund Society of Ireland does good work but its honorary local secretaries and the council constantly complain of the lack of support. Benevolent societies also exist for Devon, Essex, Hertfordshire, Kent, Lincolnshire, Surrey, and Sussex, the last-mentioned having been established only two years ago. The Surrey Medical Benevolent Society is deservedly successful and possesses four presentations to Epsom College, the holders being admitted at a very moderate fee, but medical men in that county none the less put off the duty of joining the society. It must be recollected that in the cases of all local societies help is given with much less routine than when societies are dealing with strangers. It may be said that local societies are not well supported because subscriptions go to such general institutions as the British Medical Benevolent Fund, which disburses large sums annually in grants and pensions, and the Epsom College Foundation, which gives 50 pensions of £30 a year and boards, clothes, and educates free of charge 50 foundation scholars, but a glance at the lists of subscribers to both these charities will show that this is not a sound argument. If any page be taken from either list and the names of laymen, of livery companies and commercial firms be eliminated, and the remaining names be compared with the Medical Register, it will be seen that the support given by the profession is paltry in the extreme.

What is urgently wanted in the case of our benevolent agencies is not the generous support of a few conscientious men but the assistance, in however small a way, of all members of the profession. Every medical man entirely dependent upon his profession who is living within 20 miles of Charing Cross should look upon it as a duty to join the Society for the Relief of Widows

and Orphans of Medical Men; those living in counties where medical benevolent societies exist ought to be only too glad to avail themselves of the opportunities provided for them through the efforts of their far-sighted forefathers, so that if the hand of misfortune should fall upon them or their families timely help will be forthcoming more as a right than as a favour; and those medical men who possess the gift of business capacity should endeavour to institute local benevolent societies in counties where at present none exist. With loyal support such societies would not only be able to provide annuities and grants, but, as in the case of the Surrey Medical Benevolent Society, should be able to arrange for boys to enter Epsom College on favourable terms. In conclusion, the two great London charities, the Royal Medical Foundation of Epsom College and the British Medical Benevolent Fund, ought to receive the support of every medical man who can afford to subscribe half-a-guinea or 5s. annually, for even if county associations give pensions and grants to their members the annuities from these two charities would supplement the local aid, apart from being the sole assistance in the case of numerous applicants who otherwise would not be helped. As for the work done by the Epsom College in maintaining 50 foundation scholars, thus enabling boys in many cases to regain the position lost through the premature death or permanent incapacity of their fathers, some of our readers will frankly confess that they practically owe all that they possess to the help rendered by the college.

We may, in conclusion, refer briefly to the work of THE LANCET Relief Fund, the annual report of the Almoners of which, with the balance-sheet audited by the veteran Sir HENRY PITMAN, now but six months away from the hundredth anniversary of his birthday, appears in this issue. The proprietors of THE LANCET have since 1889 placed £300 to the credit of this Fund upon the first day of each year (making in all a total of £5700 contributed by them since its commencement) and have left the distribution, with the consent of the Councils of the Royal College of Physicians of London, of the Royal College of Surgeons of England, and of the General Medical Council, in the hands of the Presidents of those bodies, who have in their different personalities invariably consented to be associated with them as Almoners. Last year 33 cases were relieved, at a cost of £460 7s. 9d. The Fund is designed to meet cases of sudden emergency in a way that the usual benevolent agency cannot effect, and information derived during its administration has proved over and over again to us the value of its work.

An Editor's Responsibility.

A VERY important prosecution was brought to a satisfactory conclusion on Dec. 19th, 1906, when the Court for the Consideration of Crown Cases Reserved affirmed the conviction of EDWARD DE MARNY, editor of *Judy*, which took place some weeks before at the Old Bailey. On Tuesday last, Jan. 8th, DE MARNY surrendered to his bail and was sentenced to two months' imprisonment in the second division. The charge arose out of the publication by the defendant in his paper of a number of advertisements of indecent books and photographs, but the importance of the case from our point of

view lies in its bearing upon advertisements of abortifacients and of quack medicines sold as such. The conviction of DE MARNY should result in the encouragement of the police in taking proceedings in respect of a grossly mischievous laxity into which those responsible for many newspapers and magazines constantly fall. The precise offences with which DE MARNY was charged were stated in various counts of an indictment which set forth under alternative aspects that he aided and abetted in the dissemination of indecent matter by causing and procuring to be sold the books and photographs described, and by causing and procuring them to be sent by post. A page of *Judy* containing advertisements lies before us and constitutes a document of which it might well be said that if the law were powerless to deal with it the sooner the legislature turned its attention to strengthening the law the better. The page in question is from the issue of Oct. 20th, 1906, and contains 19 advertisements, of which six refer to books and photographs in terms which leave no doubt as to the character of the literature offered, and the rest present the claim to public support of "female pills," of "cures for irregularities," of "cures" for "exhausted vitality and all special diseases and weaknesses of man," and of "rubber goods." The most prominent advertisement in the page, occupying a whole column, opens with the offer at 1s. 3d. post free of a book entitled "Marriage and Mysteries," for which its publisher, whose address is at Nottingham, claims the distinction that it has been "twice seized by the police." Some of the advertisements of photographs are those of dealers with addresses abroad, others of dealers at home; whether, in fact, these all relate to indecent publications we are not aware but they are so worded that they would obviously suggest an opportunity for the purchase of indecent pictures to persons in search of such. The other advertisements referred to are of the usual kind. Another page of the same issue before us contains yet more advertisements of like character to those described, and as the number of the paper which we have obtained is of a date subsequent to the commencement of proceedings against its editor we may safely infer that the advertisements for which he will now suffer imprisonment did not fall short of those which we have examined.

In addition to the advertisements which he inserted being themselves absolutely disgusting in their barefaced audacity, he had been warned distinctly by the police of the nature of the goods which the vendors sought to make known with his connivance and assistance, and that this had some effect in rendering his conviction inevitable may safely be inferred. The police supplied evidence of the actual nature of the goods advertised, producing photographs and books which they had obtained by writing to the addresses given. The points left to the consideration of the jury by the Common Serjeant who tried the case at the Old Bailey may be noted as indicating what would have to be proved should prosecutions take place in respect of other advertisements as has been suggested above. He directed them to convict should they be satisfied (1) that the books and photographs received by the police from the advertisers were in fact obscene; (2) that the defendant knew when he printed the advertisements that the things

advertised were obscene; and (3) that the advertisements brought about the sale and transmission by post of the books. He further laid down that it was not necessary that the defendant should be proved to have known in detail the actual subjects of the books and photographs, and that the jury, in estimating his knowledge, might take into account the warnings given to him by the police, the nature of the advertisements under consideration, and the nature of the other advertisements in the same issue of the defendant's paper. The points of law submitted to the Court for the consideration of Crown Cases Reserved were, firstly, that as the vendors of indecent matter lived and carried out their transactions beyond the jurisdiction of the court there could have been no conviction of them as principals, and that as a matter of law there could be no conviction for "aiding and abetting" principals who could not themselves be convicted as such. Secondly, it was argued that by publishing advertisements the defendant could not be deemed to procure the publication of the obscene matter any more than a sandwichman could be said to procure a theatrical performance by carrying a poster relating to it through the streets. Lord ALVERSTONE, however, who delivered a judgment with which the four judges who sat with him concurred, declined to accept these propositions and held that the Common Serjeant had directed the jury rightly in accordance with the precedents contained in cases already decided. His lordship pointed out that the defendant had for his own profit inserted in his newspaper advertisements which informed people where certain matter could be obtained, and it was found as a fact in the case that he knew that the matter advertised was of an indecent character and that if they were at liberty to draw any conclusion from the advertisements themselves there could be no doubt that he knew. His lordship added with emphasis that, in his opinion, it would be a lamentable thing if the law were not strong enough to deal with such a case.

DE MARNY therefore goes to prison with the full assurance that his punishment is strictly justified by the legal aspect of his offence and that all right-minded citizens must feel that it is richly deserved from the point of view of those who consider the moral welfare of the community. His trial has established the fact that a jury will hold that the editor of a newspaper knows as well as his readers do the ordinary import of the advertisements which he or the proprietor of the journal is paid to publish and that the law allows him to be credited with that knowledge. After all there is no particular hardship involved in this. It is not necessary that he should exercise an extraordinary amount of intelligence or of vigilance, and he is not likely to be charged with an offence where an isolated insertion of objectionable matter has been due to a mistake. Traders who sell indecent pictures and literature and those of the other class to which we have referred who deal in quack concoctions, which they sell as abortifacients, have to inform those members of the community for whom they cater of the nature of the goods that they hold for sale. In order to do this it is essential for them that they should address a circle of readers as wide as possible, and that they should do so in such plain and simple language

that persons not usually of a very intelligent class may understand at a glance what is offered. Their advertisements are written with this object, and that they attain it is shown by the fact that whenever an abortionist is arrested and his place of business is inspected by the police it is found that the correspondence elicited has been enormous. Indeed, the number of these advertisements and their obvious costliness afford by themselves ample evidence of the prosperous trade which they enable the quack to carry on. Editors and proprietors of newspapers are usually credited with a certain amount of intelligence and acuteness of perception, as well as with some knowledge of the world. In order to hold them responsible as knowing what they advertise a jury must tellere them to be as capable of understanding certain phrases and expressions of no particular obscurity as the servant girls and others of similar educational attainments to whom the matter in question is largely addressed. If certain advertisements now appearing in newspapers which could readily be named do not disappear before long we shall hope to see similar prosecutions to that of DE MARNY instituted, particularly in respect of abortifacients. Here the goods advertised are sold and bought with a view to the commission of felony and are used to endanger and to destroy human life, a matter which seems to demand police interference no less than the corruption of the young by the dissemination of lewd literature and pornographic photographs. We should like the prosecutions also, where possible, to have regard to the position of the proprietors of the offending journals. It is the proprietor, not the editor, whose purse is directly enriched by the money of advertisers. To some extent the proprietor is in the power of the editor, with whom the refusal of a doubtful advertisement must lie; but, on the other hand, the editor is in the hands of the proprietor who can order him to insert any particular advertisement or to send in his resignation.

"The Surgeon's Power of Life and Death."

DR. J. A. RIGBY has contributed to the December number of the *Independent Review* an article entitled "The Surgeon's Power of Life and Death," and has thereby stirred into enthusiasm the *gobe-mouches* of the local press of the district in which he resides, and has to our mind, presumably without the least intention, done a certain amount of damage to his profession. Dr. RIGBY informs the readers of the *Review* that "gradually, progressively, almost imperceptibly, there has of recent years arisen in our midst a new tribunal—endowed with the power of deciding questions of life and death," and that "there is no appeal whatever from its decisions, which are practically immutable and irresistible." He goes on to say, in words too numerous for precise quotation, that as soon as a man has obtained any medical qualification he is at once given in a vast number of cases the power of deciding whether a person consulting him shall be submitted to an operation "which may cost him his life or leave him seriously maimed or incapacitated for life. This terrible power of life and death is placed in the hands of an inexperienced youth, practically without any safeguard," and that when an operation has been performed

has been given by the operator, "there is an end of the matter." This is an extraordinary farrago to be put forward by a medical practitioner and the author goes on to illustrate and to support his position by an account of an "illegitimate and indefensible operation" which was performed, in spite of his opposition, by a "well-known operating surgeon," at the house of the patient, who was a blacksmith "suffering from a cancer affecting the parietes of the abdomen just over the region of the liver." The operator, we are told, has long been dead, and there is therefore no possibility of obtaining any version of the story which might remove its apparent contradictions and bring it into line with ordinary experience, but, even as it is told, it does not seem to us to reinforce Dr. RIGBY's contentions.

Dr. RIGBY divides operations into three classes: (1) the legitimate and defensible; (2) the illegitimate and indefensible; and (3) such as are on the borderland between the preceding; and he omits to point out to his lay audience that, even assuming his classification to be correct, the tendency of events is towards the constant removal of his second and third classes into the first. Such a removal, indeed, is in brief the history of surgery. A man of original mind sees the possibility of relieving some ailment by surgical means, but he does not at once perceive all the difficulties which may stand in the way of a successful issue. He tries, and perhaps accomplishes the operative procedure at which he aims, but he does not succeed in curing the patient. He tries again and succeeds. He compares the conditions of the first case with those of the second and by proceeding in this way he gradually learns to eliminate the cases which are unsuitable for operative treatment and to obviate the causes of death in those for which operations are performed. Such, for example, was precisely the history of ovariectomy. The discovery of an ovarian cyst was, before the operation for the condition was devised, a sentence of death, but the patient might look forward to an average respite of about four years, mostly years of suffering and of incapacity. The removal of the cyst, when first undertaken, was immediately fatal in about three cases out of five; and distinguished surgeons were of opinion that the operation, to use the words of Dr. RIGBY, was "illegitimate and indefensible." By patience and perseverance the difficulties were overcome, and when Sir SPENCER WELLS was able to chronicle a hundred consecutive cases without a single death the operation took its rank among the natural resources of surgery, no longer as a forlorn hope which might be offered but as an ordinary method of treatment, of the benefit of which it was not right that any patient should be deprived. Before this stage was fully reached we heard of a case in a provincial city in which a surgeon who was abreast of the knowledge of the day suggested that the operation should be performed. The friends desired that an elderly physician of the locality should be consulted. He came but altogether refused to sanction the operation. He did not, however, desire that the patient should be left untreated. "What I should do," he said, "would be to rub her belly with a little goose grease." The history of the operation for appendicitis, now every day performed successfully, is much the same as the history of ovariectomy, with the difference that

many cases of appendicitis would recover if treated by medical means alone. Notwithstanding this difference, there can be no doubt that the operation has greatly diminished both the general mortality arising from the condition and the duration of illness in cases which might have recovered under medical treatment alone. Its systematic performance could not be relinquished except at the cost of many lives.

Dr. RIGBY's assertion that the responsibility of deciding in a question of life and death is left, "in a vast number of cases," in "the hands of an inexperienced youth" is, amazing to us from a medical man's pen. An "inexperienced youth" does not attend a "vast number of cases" of any sort; and very few patients would accept his recommendation to be operated upon until it had been confirmed by practitioners of longer standing than his own. The regulations of most hospitals are such as to afford only limited opportunities of operating to the junior members of the surgical staff, and consultations are usually required before operations are undertaken. On the whole, in such matters the mental tendencies of the profession are, we think, decidedly conservative. In the early history of ovariectomy, while two or three men were working silently and strenuously to bring it to perfection, the general attitude of the profession was distinctly hostile. The first amputation at the hip-joint ever performed in England was done by Mr. ORTON, a general practitioner in a Nottinghamshire village, on a young man who had been sent home from the Nottingham Infirmary to die. Mr. ORTON asked the surgeons to the infirmary to be present and they came, but they declined to take the responsibility of rendering him any assistance and remained as passive spectators of his proceedings. Fifty years afterwards the patient followed the remains of Mr. ORTON to the grave, and an operation which Dr. RIGBY would, we fear, have denounced as unjustifiable was fully justified by its results.

As long as human nature is fallible, surgeons, like other men, will sometimes do what it would be better to omit and will sometimes omit what it would be better to do. But the path of duty in relation to the matters dealt with by Dr. RIGBY is not only perfectly plain but it is also perfectly well understood and systematically acted upon. It is unjustifiable to perform an operation which offers no reasonable prospect of success and, *pace* Dr. RIGBY, few surgeons would attempt such an one, even if it were only from regard to their own reputations. The death of a patient, and especially of an operation case, is often extremely injurious to a practitioner. It is equally unjustifiable to withhold from a patient a possible means of safety and of cure, or to depend upon "goose grease" when an operation is required. The plain duty of the surgeon, in every case, is to place the truth of the matter, so far as it is known to him, before the patient and the patient's friends, to suggest a consultation in cases as to which he is in doubt, and not to refuse to give a chance of life and of recovery, even when it may seem to him to be a slender one. As for the patient, if he chooses to place the issues of life and death in the hands of "an inexperienced youth" he has only himself to blame. The want of experience should be misleading. The alarm sounded by Dr. RIGBY appears to us to be a

false one; and we think his paper calculated to excite a prejudice against the medical profession, and against operating surgeons more especially, which the facts, far from justifying, are calculated entirely to remove.

Annotations.

"No gold snails."

THE VITAL STATISTICS OF LONDON IN 1906.

THE public health committee of the London County Council has just submitted the report of the medical officer of health of the county of London for 1906, and the report of the committee calls attention to the marked decline in the death-rate prevailing in recent years among the nearly five millions of persons residing within the county of London. We shall review Sir Shirley Murphy's report in full in subsequent issues of THE LANCET, but in the meantime it may not be without interest to supplement this report with a few facts relating to the health of London in the year 1906, derived from the Registrar-General's weekly and quarterly returns. The death-rate of the London population in 1906 was equal to 15.7 per 1000, against 16.6 and 15.6 in 1904 and 1905. As evidence of the remarkable improvement in the health of London during recent years it may be noted that during the last four decades of the nineteenth century the metropolitan death-rate was successively 24.4, 22.5, 20.5, and 19.6 per 1000, while the mean annual death-rate during the first six years of the present century has further declined to 16.5, showing a far more rapid rate of decrease than prevailed in any of the four preceding decades. That the London death-rate in three of the last six years should have fallen considerably below 16.0 per 1000 can only be regarded as a triumph of progressive sanitary administration and as confuting the alleged progressive physical degeneration. This evidence of sanitary progress should, however, act as a powerful incentive to further effort to combat the unquestionable degeneracy which still exists in many parts of the metropolis and which will be reflected in some of the local district death-rates, when they are available. For instance, in 1905 the corrected death-rate in the metropolitan boroughs ranged from 10.5 in Hampstead to 20.6 in Shoreditch, and there is little ground for supposing that the local rates for 1906 will not differ fully as widely. It is also eminently satisfactory to find that the rate of infantile mortality has recently, to some extent, shared in the general decline of the London death-rate. During last year the deaths of infants under one year of age were in the proportion of 133 per 1000 registered births, against 146 and 131 in 1904 and 1905. The mean rate of infantile mortality in London during the ten years 1891-1900 was equal to 160 per 1000, and considerably exceeded the mean rate during the preceding 50 years; the mean rate in the past six years of the current decade, 1901-6, has fallen, however, to 139 per 1000. It is true that this infantile death-rate last year slightly exceeded the rate for 1905, but it must be borne in mind that the meteorological conditions during last summer, of high temperature and exceptionally small rainfall, considerably increased the fatality of diarrhoea, which caused 3536 deaths in London in the summer quarter of 1906, against 2708 in the corresponding quarter of 1905. Due allowance for the effect of those unfavourable meteorological conditions fully accounts for the slight increase last year in the rate of infantile mortality compared with the still lower rate that prevailed in 1905. Notwithstanding this satisfactory recent

decline of infantile mortality in London there is still abundant proof of much waste of infant life in the metropolis. In 1905, for instance, when the general rate in London did not exceed 131 per 1000, the rate ranged upwards in the several metropolitan boroughs to 151 in Bethnal Green, 153 in Poplar, and 167 in Shoreditch. Public interest in this discreditable loss of infant life has been so thoroughly aroused by the recent National Conference on Infant Mortality that further reduction in the near future may be confidently anticipated in London as well as in those provincial towns in which the waste of infant life is still more conspicuous.

HOSPITALS AND THE PREVENTION OF DISEASE.

IN the first report of the Stepney Visitors' Association, a copy of which has been sent to us, there is a note under the above heading calling attention to neglected opportunities for the education of the public in the elements of hygiene. It is suggested that the resources of the great voluntary hospitals might be applied to measures directed to exterminate disease, in addition to those of the actual treatment with which they are at present mainly concerned. The outline of the scheme suggested may be given in the writer's own words: "It is submitted that the romance attached to hospitals and the faith of the public in the clinical economy within their walls afford a *prima facie* reason for the great success of any movement which had as its object the elementary education in the first principles of health and the prevention of preventable diseases, of district visitors, of parties of mothers, of members of artisans' clubs, and of classes of school children. General hygiene might be considered, with particular attention to such special subjects as tuberculosis, vaccination, diets for different ages, the abuse of alcohol, and first-aid to the injured." The writer proceeds to detail suggestions by which these objects might be carried out as follows: first that a series of "talks upon health topics" might be held for patients in hospital or convalescent home during convalescence; secondly, that parties of artisans and housewives gathered by social or religious workers should be instructed in the matters concerned in elementary hygiene and that children from public elementary schools might be brought periodically for part of their ordinary school work, while special opportunities might be afforded to accredited district visitors; and, thirdly, that co-operation with voluntary visiting associations should be secured by the hospital authorities in order to help in the carrying out of directions given to the out-patients at the hospitals. In the event of resistance or opposition to such proposals by hospital authorities on the ground that they are fulfilling their work in the treatment of the sick and in the education of medical students it is suggested that pressure should be brought to bear, through the executive of the great hospital funds, by the charitable public ear-marking their subscriptions for institutions carrying out these or similar functions. While we are in general sympathy with any movement likely to be effective in promoting a useful knowledge of the laws of health and of the prevention of disease, it may be questioned if such a scheme is practicable and whether the hospitals can be expected to do more than co-operate. The education of the public in such matters is surely the province of educational authorities and of the medical departments of local boards or borough councils. The hospitals were instituted for the treatment of disease and in this they have shown commendable real in keeping abreast of modern advances; indeed, in most cases of pioneering them, by which their resources have become taxed to the utmost, so that the expression "gigantic resources" used by the writer of this note is hardly felicitous. To carry out effectively the suggestions made would entail considerable labour and expense and would require a special organisation. On

the other hand, such work might well be carried out at certain selected hospitals in populous districts under the ægis of, and at the expense of, the local sanitary or health board.

ELECTRIC LIGHT IN MARYLEBONE.

SURGEONS undertaking to perform operations with the aid of artificial light within the limits of the metropolitan borough of Marylebone will do well to assure themselves that they are not wholly dependent upon the electric light supplied by the corporation. Twice during the past two months a considerable district in and around Oxford-street has been plunged into darkness suddenly and without warning after the lamps had been lighted for the evening in shops and houses. These incidents have been made public by the newspapers and have forced themselves upon the notice of those who witnessed them, but minor failures of current have been frequent since the council of the borough undertook to light it after internal discussions and dissensions as to the expediency of its so doing which will be fresh in the minds of all. What the immediate causes of individual cases of extinction of light may have been we are not concerned to inquire; such events are, however, very unusual in other parts of London and the area supplied by the Marylebone corporation contains a residential district largely inhabited by medical practitioners and dentists and also a great number of private hospitals and nursing homes. The winter is a season of fogs and darkness in London, when at other times than at night artificial light is absolutely necessary and when its sudden failure where patients are seriously ill or are actually undergoing operations may mean not only inconvenience and anxiety but danger to human life. Gas is rarely provided coextensively with electricity in private houses, at any rate, and in many of these where electricity has for some time been in use oil-lamps and candles have ceased to be kept ready or have practically disappeared. It is to be hoped that if any legal remedy is found to be in the hands of those deprived of their light in the recent cases mentioned it will be strenuously enforced on public as well as on private grounds, and that any liability there may be for the inconvenience and loss suffered by shopkeepers and others will be brought home to all who can be made responsible.

THE MEDICAL ART IN THE HOMERIC POEMS.

THE Homeric Epics, as many of our readers know, afford a large amount of evidence as to medical and surgical knowledge among the ancient Greeks, the *Iliad*, in particular, containing statements which throw light upon the scientific knowledge of this extraordinarily gifted blend of races. By far the more numerous allusions to these subjects occur in reference to the sons of Asclepius, Machaon and Podalirius, the former of whom Homer styles the faultless or excellent, *ἀμύμων*, physician. His value to the warriors must have been great, for we are told that his one life was worth a host, so useful was he for extracting the cruel bronze and mitigating pain (*Iliad* XI., 500 and sequel). According to the "Little *Iliad*," however, the Greeks finally lost his irreparable services, for he was, it will be remembered, killed by Eurypylus. The medical officers of the expedition to Asia were not non-combatants any more than the officers of our Army Medical Service are, whatever official view is held on the matter; they took their part in many fierce fights. On one occasion when their services were sorely needed Patroclus explains that Machaon just wounded in action was lying in a tent needing medical assistance himself; whilst Podalirius was engaged in the plain fighting the Trojans. There were, however, other surgeons among the Hellenes than the semi-divine sons of Asclepius, for Idomeneus fetches another medical man to

attend a comrade wounded in the thigh (XIII., 833-36); and at the commencement of Book XVI, it is explained that many of the more famous warriors lying wounded on the ships are being attended by physicians, *ἱγτροὶ πολυφάρμαχοι*. These other practitioners doubtless fought, if necessary, as did the two sons of Asclepius, but were only ordinary warriors, whereas the demigods were heroes and chiefs with many followers, coming as they did to join in the campaign with a fleet of 30 galleys. Those familiar with the story will recall that Podalirius and Machaon had been pupils of Chelron the Centaur,¹ who had also given lessons to Achilles, so that the latter subsequently, during the siege of Troy, was able to render first aid to the wounded Eurypylus and "applied a pain-assuaging drug, bruised in his hands, and spread upon the wound, stanching the blood flow, and so the anguish healed." Achilles, indeed, appears to have made good use of his medical knowledge, for we have an elegant vase painting depicting him binding up the wounded arm of his comrade



Patroclus. Strangely, however, there is no allusion in our present Homer² of Patroclus receiving a wound that was bandaged by Achilles, and so the painting must refer to some statement by the rhapsodist poets relating to the Trojan war or to some part of Homer's epic now lost. It will be seen that the point of a dart has penetrated the buckler arm of Patroclus, probably with but little force, having first had to transfix the shield. The Duc de Laynes, in describing this tableau, says the manner in which Achilles applies the bandage to the arm of his friend indicates the hero's dexterity and that of his surgical contemporaries or of Chelron the Centaur, his tutor, for it is done on a similar method as to-day. Achilles has commenced the unwrapping from the centre of the strip of material and not from the end of a roll, as advised by Hippocrates in cases of loss of blood. It is curious that Homer makes no allusion to medical men among the Trojans but speaks of wounded Agenor having his injury dressed by Helenus. He, however, is rather inclined to represent the Trojans as being more barbaric than the Achæans and may purposely have omitted to mention their medical arrangements. Incidentally he tells us the gods had their doctors like mortals, Pæon, their chief "medicine man," being absent when sadly needed by Venus,

¹ Chelron may have been medical pupil of Pæon or even of Apollo, for Healed, in a fragment, tells us the latter "knew all the remedies."
² The Egyptian Homeric papyri give many additional lines in all the books of the *Iliad* to those in our manuscripts of Homer, as if the Alexandrian scholars, and Aristarchus in particular, had reduced the length of the *Iliad* by nearly a tenth.

a misfortune he doubtless deeply regretted. The beautiful patient was, however, healed by her mother Dione, her hand having been pierced by the spear of Diomedes.

WHAT IS WHISKY?

WE understand that the settlement of this question is promised by a conference of all the parties concerned. At the County of London Sessions on Jan. 4th the appeal case was mentioned and the appellants, through their counsel, asked that the hearing of the appeal should be postponed until next April. The bench decided to suspend the appeals which will accordingly come up for consideration in the Sessions House, Clerkenwell, on April 12th. It appears that negotiations have been proceeding between the representatives of the Islington borough council and a committee of the patent spirit distillers of the United Kingdom. Whatever may be the agreement arrived at, any proposals to standardise whisky or, we presume, any other potable spirit must receive the sanction of Parliament. It is suggested that a committee should be appointed by the Local Government Board to decide upon this question of a standard. In that case, and if a satisfactory conclusion be forthcoming, the appeal will probably be withdrawn.

DECEMBER AT HOME AND ABROAD.

	Highest temperature.	Lowest temperature.	Mean daily maximum.	Mean daily minimum.	Mean temperature for month.	Range of temperature.	*Days with rain.	Total fall in month.
Scilly	54	34	43	43	46.0	6	17	3.12
Jersey	56	23	48	48	43.9	8	18	3.54
Torquay	57	23	47	39	42.3	8	14	1.53
Bournemouth ...	55	24	44	35	39.5	9	13	2.15
Bath	55	21	44	34	39.6	10	11	1.61
Manchester ...	54	21	43	34	38.7	9	?	?
Birmingham ...	53	21	42	33	37.7	9	15	2.16
Nottingham ...	55	16	42	32	35.8	10	16	2.41
London	55	23	42	33	37.7	9	13	2.03
Paris	53	13	41	23	34.9	12	11	1.55
Berlin	50	10	33	25	29.2	7	14	1.99
Nice	63	28	50	37	43.5	13	3	0.24
Florence	60	24	47	36	41.6	11	10	4.23
Rome	61	30	53	42	47.4	11	15	3.37
Naples	65	34	52	44	47.9	8	12	4.46
Palermo	69	35	53	44	50.9	14	16	5.63
Malta	69	43	60	52	56.8	8	17	3.74
Algiers	70	39	61	49	56.1	12	18	6.69
Blarritz	59	30	49	40	44.7	9	18	8.63
Lisbon	64	26	56	45	50.9	10	2	1.06

* Days with at least 0.04 inch.

The above table gives the chief meteorological elements at many places at home and abroad for last month. Compared with the corresponding figures for November the temperature shows a very general and substantial decrease of warmth. London in November had a mean temperature of 47.0° F., against 37.7° during December, and nearly every other place except Scilly, Torquay, and Lisbon experienced a similar reduction. As a whole, however, the Continent lost considerably more heat than this country; Berlin was 15° colder than it was during November, Paris 11°, and Florence 10°. Perhaps the most striking feature in the temperature statistics for December was the relatively small range between the warmth of the day and night. As is almost invariably the case the isolated Scilly Isles had the least range—the remarkably small difference of 6°—but next in order comes Berlin, where the mean nocturnal

temperature of 26° was only 7° lower than the mean temperature of the afternoon. Generally the month was more equable with us than abroad, but everywhere the diurnal range was rather less than usual. Scilly, which, with some of the most southern resorts abroad, successfully resisted the frost, had a greater mean daily warmth than Biarritz, Nice, and Florence, while the nights were milder than those at Rome and only slightly cooler than those at Naples and Palermo. Jersey and Torquay were also milder than Florence and the former milder than Nice, while the Devonshire resort had a mean temperature only about half a degree below that at Nice. Among the home resorts it is somewhat surprising to note the great difference in warmth between Torquay and Bournemouth, as well as the close resemblance between the figures of London and Birmingham. The warmest, and also one of the most equable of the foreign places, was Malta, where the temperature approximated very closely to that of the Channel Islands during an ordinary May. Abroad the weather was more rainy than during November except at Nice and Lisbon, but only at Biarritz and Algiers was the rain frequent as well as heavy. Nice had less rain than most places on the Riviera and also much sunshine, but the finest place of all the stations was probably Lisbon, where, except on two or three days, the month was remarkable for its fine, bright weather. Along the south coast of England the sunshine averaged rather more than two hours per day.

THE EMPIRICAL ORIGIN OF DRUGS.

IN the *Progrès Médical* of Oct. 20th, 1906, Dr. J. Noir deals in an interesting manner with the origin of drugs. He points out that modern medicine owes much to the empiricism, the folklore, the superstition, and even to the prejudices of past ages. It is obvious that in early times it was impossible for the physicians of the day to try all known plants for all known diseases. Some basis of selection being required, it occurred to these early physicians, deeply imbued as they were with religious and mystical ideas, that the Creator had not only endowed men with maladies but had also put within their reach appropriate remedies. They thought, indeed, that the Creator had indicated which remedies were to be used in special cases by causing plants to bear physical resemblances to the maladies for the cure of which they were intended. This theory dates back to a remote antiquity and it was generally entertained during the Middle Ages. Though fantastic, and now discredited, it served, however, a useful purpose, since it brought to light many remedies that otherwise would probably never have been known. Dr. Noir mentions several interesting examples of the empirical origin of drugs. The colour and shape of the chestnut (*le marron d'Inde*) were once considered to indicate its usefulness in the treatment of hemorrhoids. The narcotic properties of opium are considered first to have been known through the recognition of a faint resemblance between a poppy capsule and a human head. The little centaury possesses undoubted febrifuge properties but these might never have been discovered had it not been for the early empiricists who recognised in the four angles of the stem a sure indication of the proper sphere of usefulness of the plant in quartan fever. Indeed, they went so far as to reserve the triangular stems of centaury for the treatment of tertian fever. The demulcent properties of the lichens were first discovered through the obvious resemblance of certain lichens to the ramifications of the bronchi. Polygonum, the astringent properties of which are still sometimes employed in the treatment of dysentery, obtained a place in the ancient materia medica simply because the folds of the root resemble the loops of the intestines, thus clearly indicating its natural use. It is not surprising that so empirical a basis of selection should

have led to erroneous results. For example, the mandrake (*mandragora*) held high place in mediæval medicine owing to a resemblance between the roots and the human body. But, rightly or wrongly, mandrake is no longer used in medicine. There is, no doubt, some credit due to the early empiricists but it is probable that the properties of many remedies were originally discovered by accident. However, modern medicine owes much to ancient superstition and empiricism; indeed, it may be said that *empiricism* is still a potent force in medicine and it is doubtful whether it ever will be entirely eliminated from the therapeutic art.

RECOVERY FROM CEREBRO-SPINAL MENINGITIS UNDER INJECTIONS OF COLLARGOL INTO THE SPINAL CANAL.

COLLARGOL is a colloid, allotropic, soluble form of silver which was introduced by Credé in 1897 as an internal antiseptic. It may be administered by inunction, by the mouth, or by intravenous injection. Brilliant results have been reported from its use in infective disease by Professor Netter and others. At a meeting of the Société Médicale des Hôpitaux de Paris held on Oct. 19th, 1906, M. F. Vidal and M. Louis Raymond reported a case of cerebro-spinal meningitis in which a remarkable effect had been obtained from injecting collargol into the spinal canal. A woman, aged 31 years, was admitted into hospital on Nov. 14th, 1905, suffering from continuous headache with exacerbations which were provoked by the slightest sound or exposure to light. The neck was rigid and there were backache and Kernig's sign. The knee-jerks were exaggerated. The meningeal streak was easily obtained. The left pupil was more dilated than the right. The temperature was $102^{\circ}2^{\circ}\text{F}$. Lumbar puncture yielded turbid fluid containing cells, principally polynuclear, and meningococci. Other symptoms—retention and incontinence of urine and mental obtundation—developed. On the 21st the temperature was 104° , the pulse (which previously had been 120) rose to 144, and a fatal result seemed imminent. Lumbar puncture yielded fluid which was scarcely clouded. Five cubic centimetres of a 1 per cent. solution of collargol were injected into the sub-arachnoid space. Some hours later improvement was evident; the patient could understand questions, although she did not answer them. On the following day she could answer and the temperature had fallen to $100^{\circ}7^{\circ}$ and the pulse to 112. Recovery was interrupted by an attack of pneumonia but eventually was completed. During the whole of the disease polynuclear cells predominated in the cerebro-spinal fluid. This has been shown by Vidal, Sicard, and Ravaut to be the rule in acute non-tuberculous meningitis. During convalescence lymphocytes become predominant. In this case the total number of leucocytes in the cerebro-spinal fluid fell from 10,000 per cubic millimetre on admission to 671 when the symptoms were at their worst and the number of meningococci visible in the fluid was greatest. Four days after the injection of collargol the number of leucocytes rose to a height never before attained—14,000 per cubic millimetre. Most of the meningococci then seen were intracellular and there were also in the cells chocolate-coloured masses of collargol of varying size. Two days later only a few meningococci could be seen and these were dead, for they yielded no cultures on gelose. Netter has reported several cases of cure of cerebro-spinal meningitis by inunction or injection of collargol. Barth, Mauban, Papillon, and Esbach have published cases of recovery following intraspinal injection. Recovery from cerebro-spinal meningitis may take place spontaneously. But in the case reported above the rapid improvement and the remarkable changes in the cerebro-spinal fluid showed the beneficial action of the injection. At the same meeting Professor Dopfer reported

the case of a young soldier who had suffered for 20 days from cerebro-spinal meningitis which did not yield to ordinary treatment. 0.05 of a gramme of collargol was injected into the spinal canal. On the following day the temperature had fallen from 106° to $103^{\circ}2^{\circ}$, and the mental condition was improved. Recovery was then uninterrupted.

THE COLD MEAL.

THE solubility of most substances is increased by warmth and that fact alone suggests that the cold meal must be less digestible than the meal which consists of warm food. It is conceivable also that for the purposes of easy digestion the nearer the constituents of food are to a liquid state the more easily assimilable they must be. Certain fats are solid and hard at ordinary temperatures—as, for example, mutton fat or suet—while others, such as butter, are liquid at the body temperature, and the state of liquid being more readily amenable to digestive processes than the state of solid it follows that butter is more easily absorbed than suet. As a matter of fact, it is so physiologically. Frequently in chemical reactions, though the substances concerned refuse to act in the cold, yet on the slightest warming a mutual action takes place and soon is complete. Apart from these considerations warm food stimulates the flow of the digestive juices and thus prepares a condition decidedly in favour of its dissolution. As if to compensate for the uninviting and possibly, at the outset, depressing aspect of a cold meal it has been observed that the person to whom for some special, and it may be unfortunate, circumstances a warm meal is the exception commonly exhibits a desire to indulge in alcoholic stimulants. So far, therefore, the argument is opposed to the cold meal. On the other hand, very hot food may give rise to mischief, chiefly because during the meal there are almost certain to be considerable alternations of temperature which are calculated to excite a condition favourable to the production of local injury to the stomach. In point of fact, nothing which is very much hotter or colder than the stomach need be allowed to pass into that organ. Even an ice can be suffered to melt in the mouth before it is swallowed, and physiological considerations teach that such would be a wise course to adopt. The lower animals, as a rule, refuse hot food and when their food is animal prey the temperature of it is within a degree or two of that of their own bodies and, curiously enough, the ideal temperature of the food for man would appear to be that which is neither higher nor lower than his own body. Somewhere between 45° and 130°F . may be regarded as the limits of safety for food, and for drink the discreet range would be 50° as the minimum and 90° as the maximum.

SLUM DWELLINGS AND THEIR SUBSTITUTES.

THE accidental burning to death of a child, aged three years, whose clothing had been set on fire in a house in Grotto-place, Southwark, afforded recently an occasion to Dr. F. J. Waldo, coroner for the City and for Southwark, to call public attention to a dangerous and insanitary area in which he has for some time taken an interest. As medical officer of health of Southwark Dr. Waldo was able to call attention some years ago to three areas, known as Webber-row, King's Bench Walk, and Grotto-place, as insanitary areas which should be dealt with as such, and the London County Council's committee recommended that two of them should be included in a rebuilding scheme but was of opinion that Grotto-place did not urgently require reform. Dr. Waldo's observations at the late inquest, as reported in the *Globe*, show what Grotto-place is like. From there we gather that the houses have two rooms only, the lower one being below the level of the street. Each room

has one window only in front and none at the back, and the inhabitants of opposite houses can shake hands with one another from their upper windows across the intervening foot-way. The coroner called them cupboards, in which the circulation of fresh air was impossible, and it is to be hoped that the attention drawn to them by him may accelerate their much-needed demolition. Curiously enough another inquest held a few days later by the same coroner was on a child overlain by her mother in Webber-street, above mentioned. This occurred in model dwellings erected by the London County Council in substitution for the old ones, and it was elicited that the rents were as follows: one room, 5s.; two rooms, 6s. 11d. The former price certainly seems unduly high compared with the fluctuating and uncertain incomes of the working classes, and high rents are naturally conducive to overcrowding.

THE SURGICAL TREATMENT OF STERILITY IN THE MALE.

At a meeting of the American Association of Genito-Urinary Surgeons held at New York last year Dr. Edward Martin of Philadelphia brought forward a new and simple operation for sterility in the male, which is published in the *Boston Medical and Surgical Journal* of Dec. 6th, 1906. Sterility is an occasional result of gonorrhoea when it is due to occlusion of the vas deferens on both sides from double epididymitis. It is supposed that the occlusion occurs in the tail of the epididymis, where induration often may be felt. Adopting this view, Dr. Martin, in conjunction with Dr. Carnet, Dr. Levi, and Dr. Pennington, performed experiments on dogs to ascertain whether it was possible to short-circuit the vas deferens and the head of the epididymis and to provide a new route for the spermatozoa. The vasa on both sides were cut and ligatured a short distance from their origin in the epididymis and the proximal end was split and sutured into an opening made in the head of the organ. Subsequent ejaculations contained a normal number of motile and seemingly healthy spermatozoa. There appeared little tendency towards closure by cicatrization of the communication between the vas and the epididymis. The question remained, however, whether the spermatozoa thus short-circuited were fertile, since these bodies normally undergo some development in their passage through the epididymis. In the first case, in which the operation was performed in man, there was the usual history of repeated gonorrhoea, double epididymitis, a childless marriage, a wife treated by gynaecologists, and, finally, the discovery of azoospermia. The operation was performed on the left side; 14 days later the semen showed active motile spermatozoa, although not as many as normal. Marital relations were resumed 11 days after the operation and 281 days later the patient's wife was delivered of a child who strikingly resembled him. The spermatozoa again disappeared but returned after a long course of prostatic massage. The operation was performed in five other cases. One patient was lost sight of and conception did not follow in the other four cases, but in each there were other reasons for this result. The technique of the operation is very simple. Dr. Martin has operated under local anaesthesia without giving pain but he prefers to use ether. An incision one and a half inches long is made over the head of the epididymis in the back of the scrotum. The vas is freed from the cord. The epididymis is exposed and a small fragment of it is snipped out. A slit one-third of an inch long is made in the vas. This is best done with a sharp-pointed tenotome and a probe-pointed knife, similar to that used in incisions into the lacrymal duct. Four sutures, of silk or fine wire, are then passed with needles slightly curved, like those used by ophthalmic surgeons.

The needle is passed from the outer to the inner surface of the epididymis, and thence from the inner through the outer surface of the vas, one stitch being placed at either end of the incision and one at each side. The sutures are not tied until they are all passed. The tunica vaginalis is closed by buried catgut sutures and the wound in the skin by a continuous suture of either silk or catgut. The testicle is swathed in sterile cotton and immobilised by strapping. The patients were allowed to get up on the following day and to resume sexual relations within a week.

INEBRIATE REFORMATORIES AND DISEASE.

THE case of a woman named Rippin, charged before Mr. Fordham with being "drunk and incapable," brought out curious and undesirable conditions attaching to confinement in the institution for the care of inebriates carried on by the London County Council at Farmfield. The defendant had been sent to the Farmfield Inebriate Reformatory for a period of three years but had been let out on licence after two years because she was suffering from Bright's disease and because it was contrary to the regulations of the Farmfield Reformatory that persons suffering from disease requiring constant medical attention should be kept there. Owing to the comments made by Mr. Fordham when the case first came before him a gentleman from the solicitor's department of the London County Council attended at the adjourned hearing and stated that steps would now be taken to place the woman in the Eastern Counties Home and also that the County Council had modified views previously held by it as to the desirability of letting out inmates of such homes on licence. Mr. Fordham is to be congratulated upon having called public attention to a matter of some importance. The cure of inebriates is frequently a process the ultimate success of which is doubtful, and satisfactory results are likely to be rendered impossible and good work to be thrown away if the period of confinement is arbitrarily curtailed; at the same time, the inebriate whose persistence in the drink habit has rendered him liable to such detention is not unlikely to be found subject to disease requiring medical attention. That such a person needs to be kept in an inebriate home no less than his healthier fellow-drunkard hardly seems to be a matter for argument.

THE CULTIVATION OF MEDICINAL OPIUM IN INDIA.

A CORRESPONDENT to the *Times* has recently pointed out that although enormous quantities of opium are produced in India we are almost entirely dependent on Turkey for supplies of medicinal opium. The Indian drug contains only from 4 to 8 per cent. of morphine—a percentage too low for the economical manufacture of morphine, codeine, and other preparations of opium. The manufacturer prefers the Turkish variety, containing from 12 to 18 per cent. of morphine. Owing to measures which are being taken throughout the world to repress the opium habit¹ the area under poppy cultivation in India will dwindle year by year, and the suggestion is made that a part of the land should be devoted to the cultivation of opium sufficiently rich in morphine to be employed in medicine. It has already been experimentally shown that opium prepared from poppies grown in the hilly districts of the Himalayas yields 50 per cent. more morphine than that obtained from plants grown in the plains.² It rests with the Government of India to initiate experiments to determine whether it is not possible to produce on the commercial scale an opium containing as much morphine as the Turkish variety. It is very probable that something may be done in

¹ See THE LANCET, Oct. 13th, 1906, p. 1010.

² *Pharmaceutical Journal*, Sept. 22nd, 1906, p. 337.

this direction because no less than 587,000 acres were under poppy cultivation in India in 1904-05, and considerable reductions will be effected in the area under cultivation during the next few years. The growers are licensed by, and sell the products to the Government and unless the difficulty is met with energy great hardships will be inflicted upon the cultivators. India has passed through many similar agricultural troubles. When the demand for quinine reached large dimensions the Dutch ascertained by experiment which of the many species of cinchona gave the highest yield of the alkaloid and planted that species in Java on a large scale with very great success. About the same time over 1,000,000 cinchona trees were planted by the Government in India, but unfortunately the species chosen gave a poor yield of quinine, with a result that the trees had to be replaced. Thus the Dutch maintained the first position as producers of quinine to the detriment of India. Then, again, it is well known that the commercial production of artificial indigo has crippled another huge industry in India which was formerly the centre of the cultivation of indigo. The Government of India and its botanical advisers are now offered an excellent opportunity of atoning for the cinchona blunder, made in a former generation, by finding out methods of cultivating and producing opium as rich in morphine as the Turkish variety. India would then be able to share with Turkey the market for medicinal opium, the demand for which increases year by year.

THE PLAGUE FLEA AND ITS DESTRUCTION.

It has been definitely ascertained that the flea from a plague-infected rat contains the bacillus pestis in its stomach and that if a susceptible animal such as a rat, guinea-pig, monkey, or rabbit be placed in a room with infected fleas, the animals just mentioned will contract plague. The bacillus pestis will also be found in the faeces of the fleas and this excrement when rubbed into a susceptible animal's skin will prove fatal to that animal. The flea, therefore, either by direct inoculation, by bite, or by the faeces gaining access to the body by abrasion of the skin, conveys plague from animal to animal and place to place and from animal to man. Such is the substance of the observations made by Dr. John A. Turner, executive health officer of the Bombay municipality, in a paper read before the Bombay Medical and Physical Society in September, 1906. In some experiments which he was instrumental in having made the indications were clearly that the rat and the flea are disseminators of plague and therefore they must be exterminated. The flea persists in a room after the use of perchloride of mercury and even after sulphur fumigation. "Pesterine," a crude form of petroleum, was tried with the result that its application was found to render the room free from fleas. The plan which was adopted was to sprinkle the "pesterine" on the floor of the room to be disinfected and to spread it by means of a brush over the ceiling and the upper parts of the walls not omitting the lower parts; carefully going over all nooks, cracks, and ledges. A quantity is further poured down any rat hole seen in the floor. After 24 hours the room so treated is regarded to be fit for re-occupation. Pesterine appears also to be useful for disinfecting latrines and for killing flies, mosquitoes, and other insects and their eggs and larvae. It seems also to arrest putrefaction and its application checks the production of offensive smells. As an instance of its efficacy in destroying plague-contaminated fleas the following example, amongst many others, is given. A case of plague occurred in the room of a certain house on June 5th, 1906, the patient being removed to hospital two days afterwards. Guinea-pigs were kept in the room on the day of the outbreak and before disinfection. One of them was examined on the next day and was found to be full

of fleas. The place was disinfected, with pesterine in the manner described and the same two guinea-pigs infected with fleas were put in the room after disinfection. As a control two flea-free guinea-pigs were put in the room after disinfection and all four guinea-pigs were examined on the next day with the result that no flea was found. Finally, the guinea-pigs put in the room before the application of pesterine afterwards died from plague, while the other two remained alive. There was no doubt of the existence of rat fleas in the room before disinfection.

THE MANUFACTURE OF LEAD PAINTS AND COLOURS.

IN THE LANCET of July 14th, 1906, p. 107, we referred to a draft of regulations which, at the instance of the Home Office, the Secretary of State had issued in regard to the manufacture of lead paints and colours. These regulations are intended to supersede the existing special rules made under Section 79 of the Factory and Workshops Act, 1901. Employers were invited to send in any objections which they felt called upon to make with respect to these draft regulations. After consideration of the objections which were subsequently sent in the Secretary of State has now decided to make certain amendments in order to meet the difficulties pointed out by persons concerned. These alterations, we understand, can be made without materially affecting the utility of the regulations which will now be accepted by manufacturers without further objection. The provisions of the Act, however, require that the draft shall be republished as amended and in accordance with this requirement the Secretary of State has issued a formal notice intimating that further objections must be sent in by Jan. 17th, 1907.

THE STANDARDISATION OF DISINFECTANTS.

IN his annual report recently presented to the Minister of Agriculture Mr. H. Watkins-Pitchford, the Government bacteriologist and analyst of the laboratory at Pietermaritzburg, gives an interesting summary of his experience with the methods of determining the efficiency of disinfectant preparations. He concludes that while no entirely satisfactory system of standardising disinfectants exists at present the method devised by Dr. S. Rideal and Mr. J. T. Ainslie Walke appears to point the way to this desired end. The results he says, obtained by different workers and even by the same worker employing this method frequently vary within allowable limits. These variations he attributes to the following causes: (a) Unnoticed and trivial variations in technique; (b) differences in the resisting power of various strains of the same organisms and differences in physical characters of the growths of different organisms; (c) probable variation in the germicidal value of different samples of the same disinfectant; (d) too short a period for the final incubation; (e) too great intervals between the strength of dilutions; (f) the agents and durations of exposure of the organism to the action; (g) the necessity for introducing supposititious symbols when the two tables do not exactly coincide; (h) the acceptance as final of the results of only one series of observations; (i) other causes not yet determined; and lastly (j) the absence of a complete code of conditions rigid in every particular. The various disinfectants, he finds, possess specific powers over, or "germicidal affinities" for, particular micro-organisms. Discrepancies in the results obtained by this method would, he thinks, largely disappear if the carbolic co-efficient were taken to be the mean of several co-efficients obtained under standard conditions. Lastly, he suggests that the relative strength of a simple disinfectant might with advantage be expressed in terms

THE LANCET RELIEF FUND.

*For Members of the Medical Profession and their Widows
and Orphans when in Distress.*

—:—

ALMONERS.

THE PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE PRESIDENT OF THE GENERAL MEDICAL COUNCIL.

THOMAS WAKLEY, F.R.C.S. Eng.

THOMAS WAKLEY, Jun., L.R.C.P. Lond.

HON. AUDITOR.

SIR HENRY PITMAN, M.D. Camb., F.R.C.P.

—:—

THIS FUND will be provided year by year in the month of January to the amount of at least £300 solely by the Proprietors of THE LANCET, and administered free of cost, for the purpose of affording immediate pecuniary assistance to Medical Men, or their Widows and Orphans, in cases of *Acute Distress and Emergency*, by the grant of money by way of loans free of interest, or gifts, as the circumstances of the various cases may require.

Applicants must satisfy the Almoners of the Fund that they are qualified under the following regulation:—

* "The recipients shall be such persons as satisfy the Almoners that they possess one or other of the following qualifications—that is to say: (a) That the applicant holds a registered medical qualification, and that he has fallen into pressing need of immediate pecuniary relief; or (b) That they are persons who have been, previously to the date of application, legitimately dependent upon some person holding a registered medical qualification, and that they have pressing need of immediate pecuniary relief."

(In the case of Widows and Orphans, in order to come within the scope of the Fund, the death of the Husband or Father must have been of recent occurrence.)

To ensure the utmost despatch, the "Application Form" upon the other side should be filled up and forwarded (in an envelope superscribed "THE LANCET Relief Fund"), to the Secretary, Mr. CHARLES GOOD, THE LANCET Offices, Strand, London, W.C.

The application must be accompanied by two separate Testimonials (originals, not copies)—one from the Clergyman of the Parish or other resident Minister of religion, and one from a registered Medical Practitioner. Each Testimonial must state—(1) that the application addressed to the Almoners has been read; (2) how long the writer has known the applicant; (3) that the writer believes the statements made by the applicant to be perfectly truthful, and such as may be acted upon without further inquiry; and (4) may state any other particulars that the writer desires to place before the Almoners.

Testimonials written for the Almoners of the Fund will in no case be returned.

Private and Confidential.

APPLICATION FORM.

To the Almoners of The Lancet Relief Fund.

The applicant should here state shortly :—

1. The nature of the emergency that has arisen.

(In the case of Widows and Orphans the full names and date of death of the Husband or Father must be given.)

2. The circumstances out of which it has arisen.

The amount of the grant desired, and whether by way of loan (free of interest) or of gift.

4. If by way of loan, state when the loan will be repaid; and from what source the funds to repay it

expected to be forthcoming.

5. Whether the applicant is entitled or able in the circumstances which have arisen to look to any other source of assistance; and if so, what is the expected nature and extent of such assistance.

6. Whether the applicant is receiving, or has received during the past six months, pecuniary aid from any Medical Charity.

7. State how the applicant is qualified to receive assistance; vide regulation * on first page.

8. Particulars of:

Applicant's age _____

Number in family _____

How many are self-supporting _____

How many are partially dependent _____

How many wholly dependent _____

Applicant's Signature _____

Address _____

Date _____

No. _____

THE LANCET RELIEF FUND

Name _____

Address _____

Received _____

Considered _____

Result _____

Date _____

of its value for the typhoid bacillus alone, the determination of its germicidal powers for organisms other than the typhoid bacillus being made the subject of a separate inquiry. Although for practical purposes it might suffice to state the relative value of any agent with respect to the typhoid bacillus alone, yet the ideal estimate of its utility as a general disinfectant would be secured, he thinks, by obtaining the mean of its several true carbolic co-efficients for all the organisms which can be cultivated in liquid media and with which the agent is required to deal.

THE Department of Public Health of Queensland in a bulletin dated Nov. 24th, 1906, reports that after an interval of 151 clear days bubonic plague has again made its appearance in Brisbane. 1 case was reported on Nov. 16th and 1 on the 23rd. Both patients were males, both died, and in both the diagnosis was confirmed by bacteriological examination. A bulletin dated Dec. 1st states that no further cases or suspicious cases occurred during the week ended on that date.

Professor Sir Robert William Boyce, Professor Ronald Ross, C.B., and Dr. John Lancelot Todd have been given his Majesty's Royal licence and authority respectively to accept and wear the Cross of Commander of the Order of Leopold II., which decoration has been conferred upon them by the King of the Belgians, Sovereign of the Independent State of the Congo, in recognition of their valuable services to the cause of medical science.

Mr. R. Henslowe Wellington, L.R.C.P. Lond., M.R.C.S. Eng., barrister-at-law, deputy coroner for Westminster lecturer on medical jurisprudence at the Westminster Hospital Medical School, and secretary of the Medico-Legal Society, has been elected a Corresponding Member of the Société de Médecine Légale de France, Paris.

THE usual clinical lectures and demonstrations at the Hospital for Sick Children, Great Ormond-street, on Thursday afternoons at 4 P.M., for the session January to March, will commence on Jan. 17th, when Dr. A. F. Voelcker will lecture on Peri- and Endo-carditis.

SALFORD SEWAGE DISPOSAL.—Salford has long been struggling with the difficulties of sewage disposal. A scheme by which it is hoped that these difficulties will be overcome is now approaching completion. Two bays of aerating filters about 3466 square yards in extent, which were begun last year, have been completed. These, with two others of the same area, are now working satisfactorily and two more bays are being proceeded with. Up to the present the outlay on the sewage works reconstruction scheme has been £124,535.

KALYRA SANATORIUM.—Kalyra Sanatorium for tuberculous patients is in South Australia, near Adelaide. In his report on the work of the institution for the 12 months ended June 30th, 1906, Dr. C. H. Reissmann states that during that period 117 patients were admitted, 32 were discharged "arrested," 44 were discharged "improved," 40 were discharged "unimproved," and four died. By "arrest" he means absence of all evidence of disease other than fibroid transformation or scarring. There must be no evidence of active disease either in the chest or elsewhere and no rales, rhonchi, or other adventitious sounds must be audible. There must be neither cough nor expectoration and no tubercle bacilli discoverable. The pulse, temperature, and respiration must be normal before and 20 minutes after returning from hill-climbing exercise. Dr. Reissmann considers that results based on tests less rigorous are misleading and tend to bring sanatorium treatment into disrepute, for readmissions will be numerous. He gives no details of treatment but promises to deal with this part of the subject in the *Australasian Medical Gazette*.

BRITISH MEDICAL BENEVOLENT FUND.

At the December meeting of the committee 25 applications were considered and sums amounting to £185 voted in relief to 19 of the cases. Two applications were passed over and four were postponed for further inquiry. An abstract of the cases assisted is appended:—

Daughter, aged 25 years, of late M.B. Lond., who practised in the West End. Just self-supporting, but recently had to borrow £10 to pay her mother's funeral expenses. Recommended by Dr. G. Fielding Blandford. Voted £5 in one sum.

Daughter, aged 56 years, of late F.R.C.S., L.S.A., who practised in Norfolk. Income £17 a year; has endeavoured to support herself for the last ten years by letting lodgings but has now broken down in health and has lost friends who could have helped. Recommended by Dr. R. L. Bowles and Dr. C. K. Boves. Voted £3 in 12 monthly instalments.

M.R.C.S., aged 52 years. Has practised for many years in Devonshire but is now obliged to give up on account of ill-health. Recommended by Dr. C. A. Hington. Voted £15 in 12 monthly instalments.

Son, aged 22 years (applying on behalf of younger members of the family), of M.R.C.S., L.R.C.P., who practised in Kent and in Lancashire but was killed a few months ago in a motor-car accident. The estate will only be able to pay about 5s. in the pound and a fund has been raised by the medical men of the towns in which the deceased practised to relieve the immediate need of the family and to send two of the boys out to Canada in the spring. Recommended by Dr. A. J. Allott. Voted £10 to be added to the fund mentioned.

Daughters, aged 53 and 51 years, of late L.F.P.S. Glasg., who practised in Scotland. Live rent free in house which belonged to their father and endeavour to exist by keeping a small shop. The elder sister has been an invalid for many years. The profits of the shop are very small and recently the applicants have been obliged to part with articles of furniture to avoid destitution. Recommended by Dr. William Frew. Voted £12 in 12 monthly instalments.

Daughter, aged 56 years, of late M.R.O.S., L.S.A., who practised in Bucks. Income insufficient for maintenance and is prevented earning a living by deafness and other infirmities. Recommended by Dr. E. Casey. Voted £5 in one sum.

Daughter, aged 45 years, of late M.R.C.S., L.S.A., who practised in London. Used to maintain herself as a secretary and companion but has had a long illness and is quite incapacitated. Is a candidate for the C.K.B.A. Recommended by Mr. Henry Stear, honorary local secretary. Voted £10 in two instalments.

Widow, aged 59 years, of L.R.C.P., L.R.C.S. Edin., who practised in London and Liverpool. Quite unprovided for at husband's death. Health now very bad. One son, aged 30 years, self-supporting but not able to help. Relieved eight times, £51. Recommended by Dr. C. E. Underhill. Voted £12 in 12 monthly instalments.

Daughter, aged 59 years, of late M.D. Edin. who practised in Herts. Has maintained herself until recently but is now obliged to nurse an invalid sister—an annuitant of this fund. Recommended by Dr. T. Orme Duffield. Voted £12 in 12 monthly instalments.

Widow, aged 63 years, of M.R.C.S., L.S.A., who practised in Essex. Only income a small pension; children unable to help; health indifferent. Relieved four times—£24. Recommended by Dr. J. E. Nevins, honorary local secretary. Voted £5 in one sum.

Daughter, aged 48 years, of late M.R.C.S., who practised in Yorkshire. Has nursed her mother for the last ten years and has now entirely broken down in health. No income. Relieved once, £12. Recommended by Mr. H. B. Maingay. Voted £12 in 12 monthly instalments.

Daughter, aged 62 years, of late L.S.A., who practised in Norfolk. Permanently incapacitated and only income £20 a year from the Royal Hospital for incurables. Relieved five times, £42. Recommended by Dr. S. J. Barton. Voted £5 in two instalments.

Widow, aged 59 years, of M.R.C.S., L.S.A., who practised in Leicester-shire. No income; lets lodgings and is at present in great and unavoidable distress. Five children, aged 18 to ten. Relieved six times, £22. Recommended by Dr. W. M. Renton. Voted £20 in 12 monthly instalments.

Widow, aged 66 years, of M.R.C.S., L.S.A., who practised in Staffordshire. Income only 25s a year; children unable to help. Is a candidate for Epsom College. Relieved three times, £32. Recommended by Mr. H. W. Kishmark. Voted £12 in 12 monthly instalments.

Daughter, aged 52 years, of late L.S.A., who practised in Staffordshire. Maintained herself as a governess for many years but is now incapacitated for any permanent work and dependent on a relative. Relieved five times, £56. Recommended by Dr. A. Boswell. Voted £5 in six instalments.

Widow, aged 61 years, of M.R.C.S. Eng., L.R.C.P. Edin., who practised in London. Income £24 a year from the rent of a house, but has been obliged to borrow to pay for necessary repairs. Relieved seven times, £72. Recommended by Dr. William Ewart. Voted £12 in 12 monthly instalments.

Daughter, aged 55 years, of late F.R.C.S., who practised in Cheshire. Maintains herself as a companion, &c., but at present has no engagement. Relieved once, £5. Recommended by Dr. W. Menden. Voted £5 in one sum.

Widow, aged 40 years, of L.S.A., who practised in Cheshire. Supports herself as a lady help but the salary is insufficient for the maintenance of her only child—a son, aged 11 years, who is a candidate for Epsom College. Relieved once, £12. Recommended by Mr. H. W. Kishmark. Voted £12 in 12 monthly instalments.

Widow, aged 64 years, of M.R.C.S., L.S.A., who practised in Staffordshire. Only income a pension of £20 a year. No children; health indifferent. Relieved eight times, £51. Recommended by Mr. H. Parsons Smith. Voted £5 in six instalments.

THE LANCET RELIEF FUND.

THIS Fund, which came into operation on the 1st of February, 1889, has for its Almoners the President of the Royal College of Physicians of London (Sir RICHARD DOUGLAS POWELL, Bart., K.O.V.O., M.D. Lond.), the President of the Royal College of Surgeons of England (Mr. HENRY MORRIS), the President of the General Medical Council (Dr. DONALD MACALISTER, M.A., LL.D., F.R.O.P. Lond.), Mr. THOMAS WAKLEY, F.R.O.S. Eng., and Mr. THOMAS WAKLEY, jun., L.R.O.P. Lond., with Sir HENRY PITMAN, M.D. Cantab., F.R.O.P. Lond., as Honorary Auditor.

FOR the guidance of those seeking assistance and of those desirous of recommending deserving cases, it may be useful to record that THE LANCET Relief Fund is sustained solely by the Proprietors of THE LANCET, who provide every January the sum of at least £300, which is administered free of cost, with the object of affording immediate pecuniary assistance to registered medical practitioners, or to their widows and orphans, in cases of distress and emergency, by the grant of money by way of loans free of interest, or gifts, as the circumstances of the various cases may require. In the case of widows and orphans, in order to come within the scope of the Fund, the death of the Husband or Father must have been of recent occurrence.

WHEN the Fund was inaugurated considerable misapprehension existed as to the precise objects for which it had been established, and, as a result, the majority of the earlier applications, being cases of *chronic* distress, and not coming, therefore, under the designation of *emergency*, could not be entertained. As the Almoners still receive applications for assistance for cases which are obviously of a *chronic* character, it is thought advisable to append a statement concerning cases of this nature which appeared in THE LANCET of Feb. 16th, 1889:—

"We are requested by the Almoners to state that, from the character of a number of the applications received, both personally and by letter, for relief, it is evident that in many cases the object for which this Fund has been established is not quite clearly understood; and if relief had been afforded in the cases of those who suffer from chronic distress the Fund would have been completely exhausted within the first few days of its existence. They would therefore be greatly obliged if those readers of THE LANCET who may be asked to endorse applications would carefully peruse the Application Form and explain the precise object of the Fund to those applicants whose cases do not seem to come within the scope of the purpose for which the Fund has been established, which is to afford prompt aid to registered medical practitioners, or to the widows or orphans of members of the profession, who, in consequence of the supervention of some unexpected emergency, which is not likely to recur, have pressing need of immediate and temporary pecuniary relief"—

And who, it may be again pointed out, are likely to be benefited permanently thereby.

Eighteenth Annual Report of the Almoners,

For the year ending December 31, 1906.

In presenting their Eighteenth Annual Report the Almoners have to record that the balance in hand on Dec. 31st, 1905, was £232 13s. 1d., to which, on Jan. 1st, 1906, the Proprietors of THE LANCET added the sum of £300, making, with £1 repaid on loans, a total sum of £533 13s. 1d. available for grants during the year 1906.

The number of applications received by the Almoners during the year for assistance was 73, of which number 20 were rejected by the Secretary as quite outside the scope of the Fund; 8 were declined by the Almoners after due consideration; 2 applicants wrote acknowledging ineligibility after reading the regulations of the Fund; 10 Application Forms failed to be returned—doubtless owing to the applicants realising that their cases were not of a nature qualifying them to receive assistance from the Fund; 1 applicant had a self-propelling invalid chair, costing £6 7s. 9d., loaned for his use; and 32 applicants were relieved by gifts or loans of money ranging from £5 to £25. The relief of these 33 cases, a detailed list of which is given in the accompanying Statement of Accounts, involved the expenditure of the sum of £450 7s. 9d.—a sum considerably

above the normal income of the year, omitting balances brought forward and possible receipts from repayments of loans, and the largest sum voted in any one year, since the inauguration of the Fund in 1889. The total amount voted by the Almoners since the commencement of the Fund is £5643 6s. 3d.

The Almoners continue to receive expressions of gratitude for the assistance which they have afforded to applicants—in some urgent cases the relief was given on the day on which the application was received. As in past years, the timely help of the Fund has enabled more than one applicant to keep his practice together when pressing claims threatened to destroy his home and his means of livelihood and the widow and the orphan have also been helped at the moment of their greatest need.

The cases of "chronic" distress brought to the notice of the Almoners during the past year have not decreased in number; on the contrary, they have materially increased. Whilst sympathising with the applicants in their distress, the Almoners are quite unable to help them. The Fund at their disposal is not intended for such cases and would be

exhausted in the first month of the year were such claims to be met. The Almoners must again emphasise the fact that THE LANCET Relief Fund exists to meet cases of *sudden emergency*; and they will be especially obliged if gentlemen giving testimonials or recommending cases will bear this in mind.

Mr. Henry Morris having succeeded Mr. John Tweedy as President of the Royal College of Surgeons of England in July last, thereupon became an Almoner of the Fund, and kindly consented to act as such. The Almoners desire to record their warm appreciation of the valuable services rendered to the Fund by Sir John Tweedy during the period of his almonership, and to congratulate him upon the honour of Knighthood conferred upon him by His Majesty.

In conclusion, the Almoners would point out that they will at all times be glad to have their attention called to any cases of genuine distress coming within the scope of the Fund, but they trust that those recommending cases or giving testimonials will first take steps to satisfy themselves of the *bona fides*, as well as of the suitability, of such cases before endorsing them. In the administration of such a Fund as this the Almoners are of necessity largely guided in their decisions by the testimonials accompanying the applications

(Signed) R. DOUGLAS POWELL. HENRY MORRIS.
DONALD MACALISTER. THOMAS WAKLEY.
THOMAS WAKLEY, Jun.

January 7th, 1937.

THE LANCET RELIEF FUND.

STATEMENT OF ACCOUNTS FOR THE YEAR ENDING DEC. 31st, 1906.

STATEMENT OF ACCOUNTS FOR 1906				£	s.	d.
DR.						
To Balance at the London and Westminster Bank, Limited (Westminster Branch), Jan. 1st, 1906	...	232	13 1			
„ Proprietors of THE LANCET, Jan. 1st, 1906	...	300	0 0			
„ Repayment of Loan:—						
Case No. 591	...	1	0 0			
CR.						
By Loans:—						
Case No. 669	...	20	0 0			
„ 688	(Invalid chair)	6	7 9			
„ 690	...	20	0 0			
„ 693	...	15	0 0			
By Gifts:—						
Case No. 661	(voted 1905)	20	0 0			
„ 667	...	25	0 0			
„ 668	...	5	0 0			
„ 670	...	10	0 0			
„ 671	...	25	0 0			
„ 672	...	20	0 0			
„ 673	...	20	0 0			
„ 674	...	20	0 0			
„ 675	...	10	0 0			
„ 677	...	4	0 0			
„ 678	...	10	0 0			
„ 679	...	10	0 0			
„ 680	...	5	0 0			
„ 681	...	20	0 0			
„ 682	...	20	0 0			
„ 683	...	10	0 0			
„ 684	...	10	0 0			
„ 685	...	10	0 0			
„ 686	...	20	0 0			
„ 687	...	10	0 0			
„ 689	...	5	0 0			
„ 691	...	10	0 0			
„ 692	...	15	0 0			
„ 694	...	5	0 0			
„ 695	...	10	0 0			
„ 696	...	5	0 0			
„ 697	...	10	0 0			
„ 698	...	10	0 0			
„ 699	...	10	0 0			
„ 700	...	25	0 0			
„ 702	...	10	0 0			
Balance at Bank, Dec. 31, 1906				...	73	5 4
£533 13 1						
£533 13 1						

I find by the Bankers' Book that the actual Balance on Jan. 1st, 1906, to the credit of the Fund was £232 13s. 1d., to which the sum of £300 was added by the Proprietors of THE LANCET on Jan. 1st, 1905.

The balance at the Bank on Dec. 31st, 1906, was the sum of £73 5s. 4d. I have also checked the receipts for disbursements and find the above account strictly accurate.

January 3rd, 1907

HENRY A. PITTMAN, Hon. Auditor.

THE WORKMEN'S COMPENSATION ACT, 1906.

THE Workmen's Compensation Act is here translated into ordinary language; its various parts are brought into consecutive order, references being given to the clauses, subsections, and pages, in order that medical men who have the leisure may refer to the printed Act without much trouble, and those who have not may be placed in possession of its details, so that they may be able to deal with their own affairs under the Act, or when asked by patients, as many of them will be, to give them information which will be of service. A correspondent with intimate knowledge of the Acts of 1897 and 1900 has added in brackets comments which we think may be of use, but we shall return to the consideration of the Act in an early issue of THE LANCET.

SHORT TITLE.

THE WORKMEN'S COMPENSATION ACT, 1906.

1. (1) (p. 1). A workman suffering personal injury by accident arising out of and in the course of his employment shall be compensated in accordance with the First Schedule of the Act.

First Schedule. 1. (1) (p. 18). If at death the workman leaves dependants on his earnings, his employer shall pay a sum equal to three years wages, or £160, whichever is the larger, but not exceeding in any case £300. If the workman has not been employed for three years by the employer, then the amount shall be calculated at 156 times his average weekly earnings while he has been employed.

(2) If the dependants are only partially dependent upon the earnings the amount is to be assessed by agreement or arbitration.

(3) If he leaves no dependants, reasonable expenses of medical attendance and burial not exceeding £10 shall be paid.

1. (1) (b). Where total or partial incapacity results from the injury a weekly payment not exceeding 60 per cent. of the average weekly earnings, not to exceed £1 per week, shall be paid.

1. (1) (b) (p. 19). If the workman is under 21 years of age and his weekly earnings under 20s. he is to receive 100 per cent., instead of 60 per cent., of his average weekly earnings, not, however, to exceed 10s. per week.

[This latter clause will make an immense difference to the rates of insurance for the cheaper kind of laundry, factory, and domestic labour.]

First Schedule. 2. (17) (p. 22). After a weekly payment has been continued for not less than six months the employer may redeem the further payments by payment of a lump sum based on the cost of an immediate life annuity purchased from the National Debt Commissioners, equal to 75 per cent. of the annual value of the weekly payments, but nothing in this section is to prevent mutual agreements to settle.

[An annuity of 75 per cent. of £58 a year in a person of the age of 25 would cost about £700; this will bring home to everyone the importance of being covered by insurance.]

Second Schedule. (9) (a), (b), (c), (d), (e). Very stringent rules are made requiring any settlement whether made by committee, arbitrator, or by agreement to be registered at the county court, and the registrar may refuse to register, or the judge may within six months remove a settlement from the register; if it is thought that the settlement was obtained by "fraud or undue influence or other improper means."

[This is most important as it will prevent the sharp and unreasonable settlements which have been made by lay inspectors and unqualified men, late medical students or unqualified assistants who have been freely employed by certain insurance offices.]

1. (2) (a) (p. 1). The employer shall not be liable in respect of an injury which does not disable for at least one week.

First Schedule. (a) (p. 18). If the incapacity lasts less than two weeks no compensation shall be payable in respect of the first week.

[These two clauses are giving great anxiety to employers and insurance managers, for it follows that in any disability lasting over a fortnight the workman will be able to claim compensation from the date of the accident and therefore there will be great temptation to magnify slight injuries. If medical men have this clearly before them they will be chary of giving medical certificates before the expiration of the first fortnight after the accident, especially as this will not in any way prejudice the workman, for, as will be seen later, a medical certificate is not required to be sent with the notice of accident.]

1. (2) (c) (p. 2). A workman cannot claim compensation for injury if it is attributable to his "serious and wilful misconduct," unless the injury results in death or serious and permanent disablement.

[The Act of 1897 made no exception for death or serious injury.]

(3) Any disputed matters are to be settled as provided in the Second Schedule, p. 24—namely, by a committee, an arbitrator, or, in absence of agreement as to these, by a county court judge.

Second Schedule. (5) (p. 24). A judge may, if he thinks fit, summon a medical referee to sit with him as assessor.

[This is an innovation, and if it is acted on will constitute an ideal method of dealing with disputed claims, as the judge will be able to give his decision, after hearing an unbiased medical opinion and after being able to ask any questions on the medical points that he may consider necessary.]

(4) If an action is brought against an employer independently of this Act and it falls the Court may assess the compensation due under this Act and deduct therefrom all or part of the cost caused by the bringing of the abortive action.

2. (1) (p. 2). Notice of the accident must be given "as soon as practicable" and before the workman has voluntarily left the employment

in which he was injured and within six months of the accident or date of death; (a) and (b) (p. 3), however, provide that any defect or inaccuracy in the notice shall not be a bar to the proceedings if the employer is not thereby prejudiced in his defence, or if a failure to make a claim was occasioned by mistake, absence from the United Kingdom, or other reasonable cause.

2. (2) (p. 3). Notice of accident shall give the name and address of the person injured and state in ordinary language the cause of the injury and date of the accident and must be served on the employer by delivering it at his address or by registered letter.

[The questions of schemes of insurance of workmen, subcontracting, and bankruptcy of employers on pages 3, 4, 5, 6, and 7, are omitted as ordinary medical men would not be interested.]

7. (1) (p. 7). All members of the crew of any British ship are brought under the Act, and it was stated in the House of Commons that this includes lascars and other foreign seamen employed.

8. (1) (p. 9). Where a certifying factory surgeon certifies that a workman is disabled from earning full wages, or is suspended from work or that his death has been caused by either of the following diseases he or his dependants shall be entitled to compensation as if the disease was a personal injury by accident, under, however, certain special regulations set forth on pages 9, 10, 11.

Third Schedule.—Section 8.

Disease.	Description of process.
Anthrax.	Handling of wool, hair, bristles, hides, and skins.
Lead poisoning or its sequelae.	Any process involving the use of lead or its preparations or compounds.
Mercury poisoning or its sequelae.	Any process involving the use of mercury or its preparations or compounds.
Phosphorus poisoning or its sequelae.	Any process involving the use of phosphorus or its preparations or compounds.
Arsenic poisoning or its sequelae.	Any process involving the use of arsenic or its preparations or compounds.
Ankylostomiasis.	Mining.

8. (6). The Secretary of State may make orders extending the provisions of this section to other diseases, or injuries due to the nature of the employment not being injuries by accident, with or without modification.

8. (f). An employer or workman aggrieved by the action of a certifying or other surgeon in giving or refusing a certificate of disablement or in suspending or refusing to suspend a workman for the purposes of the section, can, under the regulations of the Secretary of State, have the matter referred to a medical referee whose decision shall be final.

9. (1) (pp. 12 and 13). The Act is extended to all servants of the Crown, except the naval and military, and the head of any department is to be deemed the employer.

10. (1) (p. 13). Power to the Secretary of State to appoint legally qualified practitioners as medical referees, their remuneration to be paid out of moneys provided by Parliament.

The following clause being important to the profession is quoted in full: "Where a medical referee has been employed as a medical practitioner in connexion with any case by or on behalf of an employer or workman or by insurers interested, he shall not act as medical referee in that case."

First Schedule. 1. (4) (p. 20). Any workman after giving notice of accident must submit himself for examination by a duly qualified medical practitioner provided and paid by the employer, if required, but by

(15) (p. 21), he shall not be required to submit himself for examination under paragraph (4) or (14) otherwise than in accordance with the regulations of the Secretary of State, or at more frequent intervals than may be prescribed in these regulations. When a workman has submitted himself to examination by a medical practitioner paid by the employer or himself, and either has within six days sent a copy of the medical report to the other, and in the event of no agreement being come to as to the workman's condition "the registrar of a county court on the application of both parties may on payment by the applicants of such fee not exceeding £1 as may be prescribed, refer the matter to a medical referee." The medical referee's certificate is to be conclusive evidence as to the matters so certified. If the workman refuses to submit himself to the examination of a medical referee, his right to compensation will be suspended until such examination has taken place.

(16) Any weekly payment may be reviewed at the request of employer or workman, and increased or diminished in default of agreement by arbitration.

(18) Any workman ceasing to reside in the United Kingdom will not be entitled to any weekly payment unless a medical referee certifies that the incapacity resulting from an injury is likely to be of a permanent nature, in which case, however, he may have quarterly payments subject to proof of identity and continuance of the incapacity.

(19) No weekly payment or sum paid in redemption can be assigned, charged, or attached.

[It will be seen that the duties of the medical referees are very largely increased and that their decisions will be conclusive and final; the success of the Act will therefore depend, so far as regards the medical arrangements, on (1) whether the medical referees who are appointed have the confidence of the profession in their several districts; (2) on the support given to them by the county-court judges; and (3) on the regulations for medical examinations which are to be made by the Secretary of State.]

13. (p. 14). "Workman" does not include any person employed otherwise than by way of manual labour whose remuneration exceeds £250 a year, or a person whose employment is of a casual nature and who is employed otherwise than for the purposes of the employer's trade or business, or a member of a police force, or an outworker, or a trade or business, or a member of a family dwelling in his house but, save as aforesaid, means any person who has entered into or works under a contract of service or apprenticeship with an employer, whether by

way of manual labour, clerical work, or otherwise, and whether the contract is expressed or implied, is oral or in writing.

[The Act therefore includes ordinary workmen of all kinds regularly employed, clerks, secretaries, medical assistants and dispensers, curate, lay readers, and nurses, and last, but not least, all domestic servants.]

16. (1). The Act will come into operation on the first day of July, 1907, and will not apply to any case where the accident happened before that date, except so far as it relates to references to medical referees, and proceedings consequential thereon.

Looking Back.

FROM

THE LANCET, SATURDAY, Jan. 10th, 1829.

*On Dancing and on its advantages to young Persons, when it is scientifically taught.*¹

THOSE who affect to think that the most indifferent of our actions should always be described in a manner which indicates the highest degree of morality, speak of dancing in terms that I shall not repeat: religious fanatics speak of it in a way that is connected with their modes of thinking; the dealers in gymnastic exercises, as they are called, mention dancing in terms which show that they think it very inferior, in point of utility, as well as in the power of exciting pleasurable sensations, to their own exercises. Those who attend to these discourses, will be in a condition to judge how far those opinions are correct; but as I differ in opinion, upon this subject, from all those persons that have been mentioned, I shall only consider dancing as something that either has, or may have, peculiar effects upon the health, as well as upon the form of those who practise it. Dancing is one of the most healthy, as well as one of the most pleasing, amusements that has been, or that can be practised, by females of the superior classes of society; if it is learned from those who are well qualified to teach it, and practised, as it ought to be, consistently with the instructions by which it is taught, it will contribute more to improve the health, as well as the form, of those who practise it, than any other exercise. I advance this decisively, because I have lately seen a book, from which I have extracted the following passage:—

"I have adverted to the over anxiety to educate girls in the fascinating accomplishments of music, drawing, and dancing; in the prosecution of which, they are confined in hot rooms, and forced into strained attitudes for hours together; and to the manner in which it has led, in different ways, to the most distressing circumstances. If long perseverance, in any habit, be sufficient to produce distortion and deformity in the spinal arrangement of adult and athletic males, it will surely be much more likely to induce them in the sickly and pampered children of the affluent. Though various causes may be assigned for the increased prevalence of these complaints in our own time, I am convinced that the relaxing effects of hot rooms, and a too ardent pursuit of feminine accomplishments, are the principal ones. By admitting the elasticity of the fibrous structure, and its disposition to stretch under certain favourable circumstances, we are enabled to understand many obscure actions which are going on in the animal economy, and in particular, to fix the doctrine of spinal distortion upon a simple and lasting foundation."

It would be an unwarrantable display of false tenderness to the writer, to use any of the terms that are commonly employed to describe the writings of medical men, to give a character to this passage; it will, however, be doing him justice, to use a term that is well understood in a neighbouring country, when they say a thing is all botheration; or if he should prefer an English explanation, I would say, the whole is a tissue of vulgar impudence that has no foundation in truth, and has been used to confound those who only wish to know the plain meaning of plain words. This being the case, as I shall have occasion to pay much attention to the writings of this person, at a future period, I shall only endeavour, at present, to show what are the real effects of dancing, that those who are interested in understanding it, may see how little this person knows about the matter.

MEDICINE AND THE LAW.

The Food of the People.

AMONG recent cases in which the purity of food offered for sale has formed the subject of legal proceedings may be noted a seizure of unsound fruit in Battersea with regard to which Mr. De Grey held that the defendant, a wholesale dealer, was protected by a notice in his yard that "Packets of fruit are sold on the express condition that the buyers shall sort the said contents and before offering any part to the public destroy the unsound portion." It will be interesting to see if this rather ingenious notice is adopted as widely as its success in a particular instance would suggest that it may be and whether other magistrates will follow Mr. De Grey's example should a similar case come before them. It seems open to the objection that the vendor was imposing a condition which he would find extremely difficult, if not impossible, to enforce. In another case at Greenwich police-court a butter merchant, trading at Sydenham, who had been previously convicted, was fined £40 with 12s. 6d. costs, or in the alternative two months' imprisonment, for selling butter adulterated with 80 per cent. of foreign fat. At Enfield two defendants have been fined £10 each with the alternative of one month's imprisonment for selling beer not brewed by the firm whose labels were affixed to the jars. The defence was raised that the printed slips of paper which the prosecution said were labels to deceive the customer were the headings of invoices stuck on as pieces of paper only, in order that the defendant might write upon them, with the further suggestion that the ales of the eminent firm of brewers in question would thereby be advertised. At an inquest held in Battersea by Mr. Troutbeck the death of a woman who had died from eating fried fish was inquired into with no very definite result, the coroner dwelling upon the importance of the constant inspection of the people's food-supply. The fish in this instance had not been fried in oil but in dripping purchased from a restaurant, which increased the difficulty of tracing the source of whatever caused the death of the deceased, and the jury brought in a verdict of "Accidental death."

Confidence withheld from a Medical Man.

At a recent inquest at Battersea held before Mr. Troutbeck the evidence showed that the deceased, a married woman, died from a fatal dose of ammonia which she had taken by mistake for gin, and that her husband, who was aware of what she had done, called in a medical man; but apparently, through a desire to conceal his wife's drinking habits, did not tell him of it. Indeed, when Mr. Percy A. Palmer, who attended her, asked him whether she had taken poison he denied it and did not admit it until it was too late. As Mr. Troutbeck observed, medical men are sometimes expected to divine what their patients are suffering from as if they were magicians, and to cure them in spite of their, or their friends', denials of material facts and their refusal to volunteer information. To persist in the endeavour to elicit all necessary details would seem to be the only course open but this cannot always be done effectually when the symptoms are not marked enough to assist the cross-examination. Apparently no liquid has a sufficiently powerful and distinctive odour to prevent it from being mistaken for the spirits usually consumed by those who habitually drink to excess.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 9714 births and 6379 deaths were registered during the week ending Jan. 5th. The annual rate of mortality in these towns, which had been equal to 19.1 and 19.7 per 1000 in the last two weeks of December, further rose to 22.4 in the week under notice. During the 13 weeks of last quarter the death-rate in these towns averaged 16.2 per 1000; the rate during the same period in London being 16.0. The lowest death-rates in the 76 towns during last week were 6.4 in Hornsey, 12.2 in East Ham, 13.1 in West Hartlepool, and 13.5 in Darrow-in-Furness; the rates in the other towns ranged upwards to 27.6 in Preston, 28.0 in Oldham, 32.4 in Sunderland, and 36.4 in Middlesbrough. The 5379 deaths in the 76 towns showed a further increase of 891 upon the numbers in recent

¹ Excerpt from "Lectures on Muscular Action, and on the Cure of Deformities." By Mr. Stedman.

weeks, due in great measure to delay of registration during Christmas week. They included 478 which were referred to the principal epidemic diseases, against 425 and 430 in the two preceding weeks; of these, 158 resulted from measles, 99 from diphtheria, 90 from whooping-cough, 54 from diarrhoea, 44 from scarlet fever, 33 from "fever" (principally enteric), and not one from small-pox. The deaths from these epidemic diseases were equal to an annual rate of 1.6 per 1000 in the 76 towns; the rate in London from the same diseases being 1.5. No death from any of these epidemic diseases was returned last week in Brighton, Hornsey, York, West Hartlepool, Ipswich, or in five other of the 76 towns; the annual death-rate therefrom, however, ranged upwards to 3.1 in Salford and Hull and 6.7 in Rotherham and Warrington. The fatality of measles showed the largest proportional excess in Rochdale, Wigan, Rotherham, and Warrington; diphtheria in Aston Manor, Rotherham, Reading, and Derby; and whooping-cough in Blackburn, Tottenham, Leyton, Hastings, and Middlesbrough. Scarlet fever caused 12 deaths in Manchester and Salford, and nine in Sheffield. Four deaths from "fever" were returned both in Bristol and in Birmingham. No case of small-pox has been under treatment in the Metropolitan Asylums Hospitals since the end of June last. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 3807 and 3846 in the two preceding weeks, declined to 3707 at the end of the week under notice; 309 new cases were admitted to these hospitals during the week, against 334 and 237 in the two previous weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had steadily increased in the five preceding weeks from 312 to 561, further rose to 718 in the week under notice, and exceeded the corrected average in the corresponding week of the last five years by 280; 87 deaths were also referred to influenza. The causes of 87, or 1.2 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, and in 43 other of the 76 towns; the proportion of uncertified deaths, however, again showed a considerable proportional excess in Liverpool, Birmingham, Sunderland, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 19.9 and 19.0 per 1000 in the two preceding weeks, rose again to 22.9 in the week ending Jan. 5th, and exceeded by 0.5 the mean rate during the same week in the 76 English towns. The rates in the eight Scotch towns ranged from 15.0 and 21.2 in Perth and Leith, to 29.0 in Dundee, and 31.8 in Paisley. The 796 deaths in the eight towns showed an increase of 144 upon the number returned in the previous week and included 71 which were referred to the principal epidemic diseases, against 69 and 55 in the two preceding weeks. These 71 deaths were equal to an annual rate of 2.0 per 1000, which exceeded by 0.4 the rate from the same diseases in the 76 English towns; they included 18 which were referred to whooping-cough, 16 to diarrhoea, 14 to "fever," 11 to diphtheria, ten to measles, two to scarlet fever, and not one to small-pox. The 18 fatal cases of whooping-cough corresponded with the number in the previous week, and included 11 in Glasgow and two both in Dundee and Aberdeen. Of the 16 deaths attributed to diarrhoea five occurred in Edinburgh and in Dundee, and three in Glasgow and in Paisley. The 14 deaths referred to "fever" showed a marked increase upon recent weekly numbers; no fewer than 13 were returned in Glasgow, of which seven were certified as cerebro-spinal meningitis. Diphtheria caused four deaths both in Glasgow and in Edinburgh; measles, six in Aberdeen and two in Glasgow and in Edinburgh; and the two fatal cases of scarlet fever were returned in Glasgow. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 119 and 167 in the two preceding weeks, further rose to 182 in the week under notice, and exceeded the number returned in the corresponding week of last year by 49. The causes of 46, or 5.8 per cent., of the deaths registered during the week were not certified or not stated; the mean proportion of uncertified deaths in the 76 English towns during the week did not exceed 1.2 per cent.

HEALTH OF DUBLIN.

The annual death-rate in Dublin, which had been equal to 28.8 and 18.4 per 1000 in the two preceding weeks, rose to 31.9 in the week ending Jan. 5th. During the 13 weeks of last quarter the death-rate in the city averaged 23.9 per 1000, the mean rate during the same period in being only 16.0 in London and 16.2 in Edinburgh. The 239 deaths of Dublin residents during the week under notice showed an increase of 110 upon the exceptionally low number returned during the Christmas week; they included 19 which were referred to the principal epidemic diseases, against nine and five in the two preceding weeks. These 19 deaths were equal to an annual rate of 2.5 per 1000, against 1.5 in London and 1.8 in Edinburgh. The 19 deaths from these epidemic diseases in Dublin last week included nine from diarrhoea, seven from whooping-cough, three from measles, and not one either from small-pox, scarlet fever, diphtheria, or "fever." The fatal cases of diarrhoea, whooping-cough, and measles showed a considerable increase upon recent weekly numbers. Nine inquest cases and seven deaths from violence were registered during the week; and 79, or 33.1 per cent., of the deaths occurred in public institutions. The causes of 16, or 6.7 per cent., of the deaths registered in the city during the week were not certified; the percentage of uncertified deaths in the week under notice did not exceed 0.1 in London, while it was 9.5 in Edinburgh.

VITAL STATISTICS OF LONDON DURING DECEMBER, 1906.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious disease it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 7.5 per 1000 of the population, estimated at 4,721,217 persons in the middle of last year. In the three preceding months the rates had been 9.0, 11.1, and 9.5 per 1000 respectively. The lowest rates last month were recorded in Kensington, Hammer-smith, City of Westminster, St. Pancras, Holborn, and the City of London; and the highest rates in Paddington, Fulham, Bermondsey, Battersea, Deptford, and Woolwich. The prevalence of scarlet fever showed a further decrease during December as compared with other recent months; among the various metropolitan boroughs this disease was proportionally most prevalent in Paddington, Fulham, Bermondsey, Battersea, and Woolwich. The Metropolitan Asylums hospitals contained 3787 scarlet fever patients at the end of last month, against 3360, 4111, and 4003 at the end of the three preceding months; the weekly admissions averaged 328, against 461, 543, and 430 in the three preceding months. Diphtheria was considerably less prevalent last month than it had been in the preceding month; this disease showed the greatest proportional prevalence in Fulham, Battersea, Wandsworth, Deptford, Greenwich, and Lewisham. The number of diphtheria patients under treatment in the Metropolitan Asylums hospitals, which had been 844, 1062, and 1076 at the end of the three preceding months, had declined again to 995 at the end of last month; the weekly admissions averaged 128, against 130, 175, and 153 in the three preceding months. The prevalence of enteric fever showed a marked decline last month; among the various boroughs this disease was proportionally most prevalent in St. Marylebone, St. Pancras, Finsbury, the City of London, and Camberwell. There were 134 enteric fever patients under treatment in the Metropolitan Asylums hospitals at the end of last month, against 139, 200, and 161 at the end of the three preceding months; the weekly admissions averaged 18, against 28, 34, and 24 in the three preceding months. The greatest proportional prevalence of erysipelas was recorded in Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Bermondsey, and Deptford. The 22 cases of puerperal fever notified during the month included two each belonging to Paddington, Kensington, Fulham, St. Pancras, Lambeth, Battersea, and Camberwell.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in public institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ending Dec. 29th the deaths of 6626 persons belonging to

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING DECEMBER, 1906
(Specially compiled for THE LANCET.)

CITIES AND DISTRICTS.	Estimated population in the middle of 1906.	NOTIFIED CASES OF INFECTIOUS DISEASE.										DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.														
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Bacterial fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Bacterial fever.	Other continued fevers.	Diarrhoea.	Total.	Annual rate per 1000 persons living.	Deaths from all causes.	Death-rate per 1000 living.	Deaths of Infants under one year to 1000 births.
LONDON...	4,721,317	1460	650	2	123	1	1	53	454	1	2723	7.5	100	44	75	98	1	30	1	67	414	1.1	6026	18.3	144	
West Districts.																										
Paisley...	148,013	104	14	1	2	1	1	2	14	1	126	11.0	1	5	4	4	1	1	4	1	1	15	1.1	182	16.9	153
Kensington...	180,962	28	16	1	4	1	1	2	12	1	61	4.4	1	1	4	3	1	1	3	1	13	0.0	233	10.8	162	
Hammermouth...	120,679	21	11	1	3	1	1	2	9	1	44	4.8	1	2	2	3	1	3	1	1	10	1.1	137	14.8	92	
Fulham...	161,855	80	37	1	4	1	1	2	18	1	141	11.3	1	2	2	2	1	1	8	1	16	1.2	200	10.8	167	
Chelsea...	74,672	20	6	1	2	1	1	1	7	1	35	6.1	1	1	1	1	1	1	2	1	4	0.7	80	16.6	172	
City of Westminster...	173,000	28	13	1	4	1	1	1	12	1	58	4.3	1	1	1	1	1	1	1	1	7	0.6	200	10.7	116	
North Districts.																										
St. Marylebone...	128,650	24	10	1	6	1	1	1	10	1	68	6.7	2	1	3	1	1	1	1	1	0	0.6	180	18.0	68	
Hampstead...	89,633	34	11	1	3	1	1	2	3	1	51	7.4	1	1	1	1	1	1	1	1	2	0.3	63	9.2	33	
St. Pancras...	236,455	27	13	1	13	1	1	2	21	1	70	4.2	1	2	4	10	1	3	1	1	14	0.8	377	20.8	168	
Islington...	344,067	90	28	2	6	1	1	1	32	1	162	6.1	2	2	1	10	1	2	2	2	25	0.0	530	20.3	177	
Stoke Newington...	53,217	13	3	1	1	1	1	1	6	1	22	6.4	1	1	1	1	1	1	1	1	2	0.6	46	11.3	71	
Hackney...	230,721	60	20	1	8	1	1	1	21	1	130	7.0	1	1	1	3	1	2	1	0	14	0.8	263	10.0	97	
Central Districts.																										
Holborn...	65,805	7	4	1	1	1	1	1	5	1	17	4.0	1	1	1	1	1	1	1	1	2	0.6	104	24.3	140	
Finsbury...	97,466	10	6	1	6	1	1	1	16	1	43	6.8	2	1	1	7	1	3	1	1	14	1.0	100	26.4	194	
City of London...	21,367	1	1	1	1	1	1	1	1	1	3	1.6	1	1	1	1	1	1	1	1	1	—	38	23.2	168	
East Districts.																										
Brompton...	116,108	30	11	1	3	1	1	1	20	1	70	7.0	1	3	3	3	1	1	3	1	13	1.6	212	23.8	176	
Dulwich...	130,650	41	21	1	4	1	1	1	22	1	88	8.8	0	2	2	6	1	1	1	1	20	2.0	216	21.0	210	
Stepney...	367,178	73	53	1	14	1	1	1	30	1	170	7.6	42	2	4	4	1	3	4	60	60	2.6	480	20.8	143	
Poplar...	170,673	33	14	1	5	1	1	1	22	1	74	5.7	6	1	4	1	1	1	1	5	16	1.1	258	10.7	161	
South Districts.																										
Southwark...	200,143	84	20	1	7	1	1	1	17	1	120	8.0	1	1	1	8	1	2	5	17	1.1	325	20.3	160		
Bermondsey...	128,629	61	23	1	2	1	1	1	20	1	106	10.7	8	2	6	2	1	1	2	10	1.0	248	26.1	176		
Lambeth...	316,774	93	34	1	5	1	1	2	23	1	167	6.6	1	2	4	3	1	2	4	10	0.7	466	18.8	138		
Battersea...	179,622	62	64	1	3	1	1	2	14	1	166	12.0	1	6	2	5	1	1	3	10	1.2	233	10.0	140		
Wandsworth...	273,381	74	63	1	1	1	1	1	22	1	161	7.7	7	3	8	5	1	3	3	27	1.3	318	16.1	130		
Camden...	274,132	120	34	1	12	1	1	2	26	1	164	6.2	1	3	4	12	1	3	5	28	1.3	370	17.0	139		
Deptford...	116,465	47	34	1	3	1	1	1	16	1	90	11.2	1	1	3	1	1	1	1	2	7	0.8	166	17.6	111	
Greenwich...	166,350	38	27	1	3	1	1	1	8	1	77	9.6	1	3	3	1	1	1	1	0	0	0.7	137	17.0	107	
Lewisham...	148,463	38	24	1	1	1	1	1	7	1	80	7.0	1	1	4	2	1	1	1	1	7	0.1	166	13.7	107	
Woolwich...	127,346	63	23	1	2	1	1	1	11	1	90	10.1	10	1	3	1	1	1	2	1	23	2.4	172	17.6	10	
Port of London...	—	—	—	—	—	—	—	—	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

* Including membranous group.

were registered, equal to an annual rate of 18·3 per 1000; in the three preceding months the rates had been 17·1, 13·6, and 14·7 per 1000 respectively. The death-rates last month ranged from 9·2 in Hampstead, 11·3 in Stoke Newington, 13·7 in Lewisham, 14·8 in Hammersmith, 15·1 in Wandsworth, and 15·5 in Chelsea, to 21·6 in Bethnal Green, 23·2 in the City of London, 23·8 in Shoreditch, 24·3 in Holborn, 25·1 in Bermondsey, and 25·4 in Finsbury. The 6626 deaths from all causes in London last month included 414 which were referred to the principal infectious diseases; of these, 100 resulted from measles, 44 from scarlet fever, 75 from diphtheria, 98 from whooping-cough, 30 from enteric fever, and 67 from diarrhoea. No death from any of these diseases was recorded in the City of London; among the metropolitan boroughs they caused the lowest death-rates in the City of Westminster, Hampstead, Stoke Newington, and Holborn; and the highest rates in Finsbury, Bethnal Green, Stepney, Bermondsey, Lewisham, and Woolwich. The 100 deaths from measles were 85 below the corrected average number in the corresponding periods of the four preceding years; among the various metropolitan boroughs this disease was proportionally most fatal in Bethnal Green, Stepney, Poplar, Bermondsey, Wandsworth, and Woolwich. The 44 fatal cases of scarlet fever were slightly in excess of the corrected average number; this disease showed the highest proportional mortality in Hammersmith, Paddington, Shoreditch, Bermondsey, Battersea, and Greenwich. The 75 deaths from diphtheria were also just above the average for the corresponding periods of the four preceding years; the highest death-rates from this disease were recorded in Paddington, Shoreditch, Bermondsey, Wandsworth, Deptford, Greenwich, and Lewisham. The 98 fatal cases of whooping-cough were 16 fewer than the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in Islington, Finsbury, Bethnal Green, Southwark, Battersea, and Camberwell. The 30 deaths from enteric fever showed a considerable decline from the average number in the corresponding periods of the four preceding years; the greatest proportional mortality from this disease was recorded in Hammersmith, St. Pancras, Finsbury, Stepney, and Woolwich. The 67 fatal cases of diarrhoea were almost identical with the corrected average number; the highest death-rates from this disease were recorded in Paddington, Fulham, Chelsea, Shoreditch, and Poplar. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was more than 20 per cent. below the average.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 144 per 1000. The lowest rates of infant mortality were recorded in Hammersmith, St. Marylebone, Hampstead, Stoke Newington, Hackney, and Woolwich; and the highest rates in Chelsea, Islington, Finsbury, Shoreditch, Bethnal Green, and Bermondsey.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: W. M. Craig to the *President*, for three months' course at West London Hospital; and R. O. Munday to the *Aboukir*. Staff Surgeons: H. O. Arathoon to the *Diamond*; and W. G. Westcott to the *Essex*. Surgeons: G. M. Eastmont to the *Magnificent*; A. R. Thomas to the *Terrible*; H. L. Geoghegan to the *Victorious*; R. B. Scribner to the *Majestic*; W. P. Yetts to the *Leviathan*; G. E. Macleod to the *Glory*; J. R. Muir to the *Albion*; R. O. P. McDonagh to the *Cressy*; E. S. Wilkinson to the *Andromeda*; R. Kennedy to the *Spartiate*; S. Croneen to the *Cornwall*; W. L. Martin to the *Cumberland*; H. A. Browning to the *Donegal*; T. W. Jeffery to the *Aboukir*; G. O. O. Ross to the *Niobe*; P. F. Minett to the *Europa*; A. H. S. Richardson to the *Cambridge*; G. Taylor to the *Ariadne*; N. J. Roche to the *Hannibal*; and G. E. Duncan to Plymouth Hospital.

In accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet Surgeon John Walter Slaughter has been placed on the retired list of his rank, at his own request (dated Jan. 3rd, 1907).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel G. W. Brazier-Greagh, C.M.G., and Lieutenant-Colonel R. W. Wright have joined at Woolwich.

Captain G. J. S. Archer, from the Royal Army Medical College, has been appointed to Londonderry for duty.

ARMY MEDICAL RESERVE OF OFFICERS.

The undermentioned Surgeon-Captains to be Surgeon-Majors:—Alexander B. Lyon (dated Feb. 10th, 1906); James P. S. Ward (dated Nov. 21st, 1906); Robert T. Ferguson (dated Dec. 5th, 1906). Surgeon-Lieutenant Harry Stallard to be Surgeon-Captain (dated Dec. 27th, 1906).

DEATHS IN THE SERVICES.

Surgeon-Major-General Frederick William Wade, A.M.S. (retired), on Dec. 26th, 1906, aged 69 years. He entered the service as assistant surgeon in 1857, became surgeon in 1872, surgeon-major in 1873, deputy surgeon-general in 1883, surgeon-colonel in 1887, surgeon-major-general in 1892, and retired in 1894.

Surgeon-General Richard Chapman Lofthouse, A.M.S. (retired). He entered the service as assistant-surgeon in 1854, became surgeon in 1867, surgeon-major in 1873, brigade-surgeon in 1879, and retired in 1884 with the rank of deputy surgeon-general. He served with the Prince of Wales's 10th Royal Hussars in the Crimean war and was present at the siege and fall of Sevastopol (medal and clasp and the Turkish medal). He served in the Indian Mutiny with the 14th King's Light Dragoons under Sir Hugh Rose and Sir Robert Napier, took part in many important actions, was mentioned in despatches, and received the medal and clasp for Central India. He also served during the occupation of Egypt from 1882 to 1884.

THE PROMOTION EXAMINATIONS OF ARMY MEDICAL OFFICERS.

When the new Army Medical Advisory Board gets to work it might usefully turn its attention, among other things, to the subject of the examination of medical officers for promotion. It is questionable whether the tendency of the present day is not to a system of over-examination, as we are disposed to think is the case, but this is not the point with which we are now more immediately concerned. This is, rather, whether the subjects taken up should not, as applied to a scientific branch of the service, undergo some modification in order to give them a more direct and practical bearing upon a medical officer's special duties with the view of showing his efficiency in that respect. While we recognise that it is desirable that a medical officer for administrative and disciplinary purposes should in a general way be acquainted with such subjects as military law, the terms of the Geneva Convention, the laws and customs of war, and with the medical organisation and regulations of the armies of other countries, we nevertheless think that such knowledge must be regarded as relatively unimportant and subordinate to that directly bearing upon the special work and duties of a medical officer as such.

PROMOTION IN THE ARMY MEDICAL SERVICES.

That this has been the subject of a feeling of unrest and dissatisfaction of late in the Army Medical Services is much to be regretted, but the existence of this state of affairs cannot, we think, be denied. Whether rightly or wrongly we cannot say, but by some this was ascribed to the influence of the Advisory Board. We regard it, however, as a move in the right direction that all selections for promotion of officers to ranks having a fixed establishment are primarily to be made by a board consisting of the Director-General and the surgeons-general serving at home, who will make their reports and recommendations directly to the Selection Board at the War Office.

FOREIGN UNIVERSITY INTELLIGENCE.—Berne:

Dr. Kurt Kottmann has been recognised as *privat-docent* of Medicine.—*Bonn*: Dr. Robert Bonnet of Greifswald has been offered the post of Professor of Anatomy in succession to Dr. Freiherr v. la Valette St. George, who retires at the close of the winter session.—*Clausen*: Dr. Konrad has been recognised as *privat-docent* of General Pathology and Therapeutics.—*Freiburg*: Dr. Wilhelm Hildebrandt has been recognised as *privat-docent* of Medicine.—*Paris*: Dr. Raphaël Blanchard has been appointed Professor of Parasitology and of Medical Natural History.—*Vienne*: Dr. Max Richter has been appointed Extraordinary Professor of Forensic Medicine; Dr. Theodor Panzer, Extraordinary Professor of Medical Chemistry; Dr. Otto Loewi, Extraordinary Professor of Pharmacology; and Dr. Otto Ritter von Fürth, Extraordinary Professor of Medical Chemistry.—*Würzburg*: Dr. Brückner has been recognised as *privat-docent* of Ophthalmology.

Correspondence.

"Audi alteram partem."

SCARLET FEVER MORTALITY AND HOSPITAL ISOLATION.

To the Editors of THE LANCET.

SIRS,—I fear the purport of my letter published in THE LANCET of Dec. 15th, 1906, p. 1685, has been misunderstood by yourselves and Dr. W. G. Willoughby. Perhaps I did not express myself with sufficient clearness. Your original article claimed that hospital isolation had had a beneficial effect on gross scarlet fever mortality and that proposition I ventured to dispute. Now hospital isolation can only lower gross scarlet fever mortality either by generally reducing the incidence of the disease and thereby curtailing the number of fatal cases, or by supplying hospital patients with treatment of superior efficacy to that obtainable at home, or by a combination of these two accomplishments. In your article you set aside the first claim—"the statistics quoted above seem to suggest that its prevalence does not appear to have declined notably"—but, on the contrary, in your reply to me you assert it—"The most obvious advantage of isolation is to check distribution of disease and thus to reduce the number of cases and consequently of fatal cases." These statements seem to me to be mutually exclusive. The reason for which I compared home and hospital treatment was merely to show that on such evidence as was at hand there could be no claim for distinct superiority in favour of the latter. So that if isolation hospitals do not appreciably limit the prevalence of scarlet fever, and if they do not provide appreciably better treatment than is obtained at home, they cannot appreciably affect gross scarlet fever mortality. Dr. Willoughby will, I am sure, excuse me if I point out that after citing the figures, comparing home and hospital mortality, I said, "There is a certain selection acting against the hospital of course," an expression designed to cover precisely the conditions he gives in detail.

But, apart from the point at issue, Dr. Willoughby seems to credit me with the desire of "doing away with the hospitals," and I gather that you suspect me of similar heretical leanings. My wish is rather to plead for the preservation of an attitude of intellectual disengagement on the whole question, not claiming more for the hospitals than evidence warrants and not unreservedly condemning them because they have not fulfilled the function prophesied for them. We are faced with the paradox that the segregation of certain infectious patients in many—indeed, in most—large towns has not been followed by any decided drop in the prevalence of the disease from which they suffer, and the chief lesson that paradox would appear to indicate is that diligent inquiry should be made into the factors which have prevented that result ensuing. I am not at all sure that Dr. Willoughby has not "got the right sow by the ear." He is able to show scarlet fever results of a peculiarly gratifying kind. To what are they attributable? Dr. Willoughby has the sanitary direction of one of the best-planned and best administered towns in England, a town where the standard of comfort and decency is exceptionally high, where overcrowding is practically unknown, where houses are well built and well drained, where slums do not exist, where employment is regular and well paid—a town, in fact, where every prospect pleases and even man is not vile. Backed by these enviable conditions, armed with a wieldy, airily situated, well-broken-up isolation hospital, entrusted with the medical supervision of elementary school children, and supported by a body of loyal medical colleagues, he is in a position to demonstrate that in Eastbourne scarlet fever is a manageable disease. To my mind, the suggestion is rather that a community framed on humane and discriminating lines may find such a hospital a serviceable handmaid in dealing with infectious disease than that viciously planned and corruptly disposed cities can reasonably hope by the wholesale provision of isolation hospitals to stay the natural consequences of flagrant sanitary errors. The two conceptions of hygienic strategy differ *totally*.

I am, Sirs, yours faithfully,

Oster Temple, W.C., Jan. 1st, 1907.

HUBERT E. J. BISS.

AMYL NITRITE IN HÆMOPTYSIS.

To the Editors of THE LANCET.

SIRS,—In the communication of Dr. Francis Hare in THE LANCET of Dec. 29th, 1906, p. 1830, anent my note concerning the mechanism of the action of amyl nitrite, the following pertinent interrogations are presented: 1. How could any contraction of the bronchial tubes express the blood from the pulmonary parenchyma? 2. Would not contraction of the bronchial tubes cause obstructive dyspnoea similar to, if not identical with, that which constitutes an asthmatic paroxysm? 3. How can the action of amyl nitrite upon systemic hæmorrhage, say from the uterus, be explained? I used the sponge as a simile in describing how blood was expressed from the lungs because the latter are of a spongy, elastic texture. It is conceded that the vagus contains fibres which can contract or dilate the bronchi. This fact has been conclusively shown by Dixon and Brodie. For the facts relating to its clinical demonstration I must refer to my several communications on the subject.¹ The dual function of the vagus fibres must be expressed on two kinds of muscles. Anfrecht² has shown that the belief of only a circular layer constituting the musculature of the bronchi is wrong and that by using the Biondi-Heidenhain stain a longitudinal muscular layer also exists. If our conception of the bronchial tubes were limited to the relatively rigid cartilaginous structures it would be difficult to understand how their contraction could express the blood from the lung parenchyma. Our conception of the tubes, however, is strictly in accord with the anatomic understanding. They are tubes until they end in the smaller subdivisions of the lungs called lobules and they contain muscular fibres even after the cartilaginous element is lost. The primary effect of amyl nitrite inhalation is to dilate and the secondary effect is to contract the lungs by virtue of its action on the longitudinal fibres. In the latter sense the action is tantamount to forced expiration, such as is observed in Valsalva's experiment whereby the lungs are emptied of blood. That amyl nitrite should have a specific action on the longitudinal to the exclusion of the circular fibres is not phenomenal. We have our angiospastics and our angioparalytics, and we possess myotics and mydriatics. Assuming that amyl nitrite anæmises the lung superficies, how is this effected? To attribute such action to the direct effects of the drug on the pulmonary vessels would be wrong for two evident reasons. The drug is a vaso-dilator and to admit that its action is one of vaso-constriction on the pulmonary blood-vessels is to create a theory which has no precedent in pharmacodynamics. True, we possess drugs which have a localised action either as vaso-dilators or vaso-constrictors, but when such action is expressed elsewhere it is either by dilatation or constriction of the vessels. In the blood-vessels of the lungs the influence of the vaso-motor nerves is minimised. In hæmoptysis the genesis of the bleeding is from veins as well as arteries. While Mall has demonstrated a vaso-motor influence on the portal vein such influence on the pulmonary veins is a matter of conjecture only.

In answer to the second question, I will say this, that we must differentiate the action of the circular and longitudinal muscular fibres of the bronchial musculature. My theory of asthma³ is the modified spasmodic theory. It assumes that the theory of asthma must not alone be based on a spasm of the circular but on the inability of the weaker longitudinal fibres to expel residual air imprisoned by the circular fibres. This action has its analogue in the bladder musculature when, in consequence of a spasm of the sphincter vesicæ, the weak detrusor vesicæ cannot expel the urine and ischuria spastica results. The hypodermic use of adrenalin chloride is often more efficacious than morphine in subduing an asthmatic paroxysm. Such an injection, even in a normal subject, will translate a percussion sound of resonance into dullness or even flatness—in other words, the action of adrenalin is on the longitudinal fibres and provokes the lung reflex of contraction. There is a secret remedy used in the United States which is phenomenally efficacious in aborting asthmatic attacks. It is used by means

¹ New York Medical Journal, June 13th, 1896; American Medicine, March 1st, 1902; Philadelphia Medical Journal, Sept. 28th, 1900; American Medicine, Jan. 3rd, 1903; Diseases of the Lungs and Pleura, 1903, p. 60.

² Deutsches Archiv für Klinische Medizin, Band XLVII, Hefte 5 and 6.
³ The Medical News, June 2nd, 1904; American Medicine, Jan. 3rd, 1905.

of a nebuliser. All chemical analyses of the preparation in question are untrustworthy, for formulae made according to such analyses do not show the effects of the original preparation. I have sought to determine the nature of the secret remedy by studying its physiologic action which is essentially as following: When sprayed into the nose, even of a normal subject, there is almost an immediate translation of the normal lung resonance to dullness or flatness (lung reflex of contraction). The weakness of the longitudinal fibres is also demonstrated by my tracheal traction test,⁴ which is a simple method of recognising an asthmatic lung. In accordance with the theory propounded, I treat my asthmatics in the paroxysmal and interparoxysmal periods by respiratory exercises which tend to strengthen the longitudinal fibres. I have known asthmatics whose attacks resisted even the influence of an anæsthetic for hours and which yielded after a few minutes of systematic compressions of the thorax during expiration.

Relative to the final question, I believe it has already been answered. Amyl nitrite acts on the fibres of the uterus with secondary constriction of the blood-vessels, just as it acts on the longitudinal fibres of the bronchial musculature and in the former action it is essentially an oxytocic. The lowering of the blood pressure must also be taken into account as cited in my previous communication.

I am, Sirs, yours faithfully,

Paris, Jan. 2nd, 1907.

DR. ALBERT ABRAMS.

GAS FIRES.

To the Editors of THE LANCET.

SIRS,—I have already discussed the report of the Coal Smoke Abatement Society in the columns of the *Gas World* (Dec. 8th) and whilst agreeing with some of the conclusions arrived at by Mr. Francis Jones as to the inadequacy of hasty tests carried out in larger rooms than ordinary living rooms, I must respectfully protest against his urging the results he himself arrived at six years ago as being of any greater value than those he now impugns. In March last Mr. Jones was good enough to send me a copy of his pamphlet, "The Air of Rooms, &c.," and in a correspondence which ensued therefrom I pointed out that the room in which his tests were made erred considerably on the side of being *too small*, being only of 935 cubic feet capacity. In this room Mr. Jones used a gas fire the consumption per hour and the pressure of which he never took the trouble to inquire. It had eight bunsens, and as each would consume five cubic feet of gas it was obviously too large for the room in which the tests were made. I gathered from his letters that the gas fire was fitted into the same flue as the coal fire without any consideration as to the satisfactory carrying away of the products. Upon the point of fixing Mr. Jones, in a letter dated April 7th last, said:—

I made no suggestions but wished the fire to be arranged the same way these workmen are accustomed to do in ordinary Manchester houses; if there were a more perfect way it would not suit my purpose since I wished to test the fire in the way it is commonly used.

Where such an indifference is displayed is it reasonable to publish broadcast results the value of which might absolutely be nullified by the single mistake of a workman or gas-fitter? If one is seeking after scientific truth it is important that nothing be left to the frailties of even corporation gas-fitters. Far from the fire being fitted in "the ordinary way" one can only describe both the method of procedure, the size of the fire, and the dwarfed room as most extraordinary.

Although Mr. Jones took records of the temperature of the room he did not think them of sufficient importance to publish in his pamphlet! The following are extracts from my last letter dated April 11th, 1906, to Mr. Jones on this subject:—

A coal fire can be no better ventilating agent than a gas fire if, in the latter, we generate as many units of heat as are generated in a coal fire. It is all a question of arrangement between the method of heating and the method of carrying off the products or promoting draught.

You do not think the size of the room will make any difference seeing that the experiments were comparative you might as well put a gaslight or gas fire into a hermetically sealed box, and because the oxygen gives out assert that it is conclusive proof that gas is extremely poisonous and ought not to be used. My point is, that the size of the room compared with the type of stove or method of gaslighting used has everything to do with it, and when one is correctly adjusted to the other, the carbonic acid can be kept below 10 parts in 10,000.

⁴ Ibid.

The fire used would be consuming anything from 35 to 50 cubic feet of gas per hour, whereas for a room of that size satisfactory heating would be accomplished with a gas fire consuming not more than 8 to 10 cubic feet per hour. I must say that if you had been endeavouring to get the percentage of carbonic acid in the atmosphere as high as possible you could not have adopted better conditions than a room far below normal capacity, and a fire far above normal consumption (and probably badly fitted to the flue) for your purpose.

Mr. Jones hopes the Coal Smoke Abatement Society will continue its tests. May I, too, express a similar hope—i.e., that Mr. Jones will revise his own tests, using normal conditions from which to make deductions intended for wide publication? I would not have troubled you with this letter were it not for the fact that our competing friends the electricians make as much capital as they can from such letters as the one from Mr. Jones, as is evidenced by an editorial thereupon in the *Electrical Engineer* of Dec. 21st in which appears the following summing-up:—

We think it will be admitted that the evidence which Mr. Jones produced in support of his statement was convincing proof of its accuracy, while his criticism of the society's report is fair and reasonable.

Whilst I would be the last man in the world to impute other than the highest motives to Mr. Jones, I could not, in April last, accept his own statement of his own investigations as convincing proof of their accuracy, nor am I yet able to see eye to eye with the editor of the *Electrical Engineer*, to whom, doubtless, "the wish is father to the thought."

I am, Sirs, yours faithfully,

JNO. HY. BREARLEY,

President of the Manchester District Institution of Gas Engineers.

Dec. 24th, 1906.

TUBEROSE SCLEROSIS OF THE BRAIN.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Dec. 8th, 1906, p. 1583, appeared a description, by Dr. Margaret B. Dobson, of a case of tuberoze sclerosis of the brain. On Dec. 22nd, 1906, you commented upon this paper in an annotation in which you call attention to the presence in this patient of the "rare skin affection known as adenoma sebaceum." As Dr. A. W. Campbell's work is apparently unknown to Dr. Dobson and is not mentioned in your note I venture to call the attention of your readers to his paper in *Brain*, 1905, p. 382. Here they will find a full account of this curious pathological condition accompanied by a complete microscopical examination of the brain and other parts, including the kidneys, from a typical instance of this disease. His paper contains a list of the principal papers that have been written on this subject.

I am, Sirs, yours faithfully,

Jan. 3rd, 1907.

THE EDITOR OF "BRAIN."

SOME CASES OF ORCHITIS PAROTIDEA OR TESTICULAR MUMPS.

To the Editors of THE LANCET.

SIRS,—In the early part of last November, and within 48 hours of one another, I had under my care four cases of acute orchitis. Each case presented practically the same symptoms—rigor, high temperature, nausea, and a painful swelling of one testicle. There was no history of injury, no urethral discharge, and no swelling of the salivary glands. The disease lasted from 14 to 21 days and then disappeared. The parotids escaped from first to last. It was clear I had to deal with a specific infectious disease, an acute epidemic orchitis. I had no suspicion at the time that I was dealing with the virus of specific parotitis. Two days after I had seen my first case I was called to see a man who had had rigors, a high temperature, and who was now suffering from acute orchitis. A glance at his face showed the characteristic swellings under the lobes of the ears. This case, of course, suggested the true nature of the epidemic.

Orchitis as a complication of mumps in the adult male is a frequent complication. I have known cases in which the orchitis developed before the parotitis. But I have never seen cases of testicular mumps in which the parotids entirely escaped. On consulting Osler's "Principles and Practice of Medicine" (third edition, p. 91) I find that he says, "In rare instances orchitis may be the only manifestation of the infection."

I send you this note to call attention to a simple everyday disease which for some unexplained reason may present

itself in one of its rare manifestations and may thus cause considerable anxiety with the possibility of an erroneous diagnosis.

I am, Sirs, yours faithfully,

JOSEPH A. W. PEREIRA, M.D. Brux.,

L.R.O.P.Lond., M.R.C.S.Eng.,

Exeter, Dec. 13th, 1906. Medical Officer, Exeter City Workhouse.

A NEW METHOD OF PROTECTING THE SCALP OR SKIN FROM THE X RAYS.

To the Editors of THE LANCET.

SIRS,—Whilst working with the x rays in St. Mary's Ringworm School, Eltham, there appeared to me very great difficulty in exposing contiguous areas of tinea accurately to the x rays. The methods of using circular lead glass tubes or sheet lead invariably left small sections of scalp untreated between the diseased areas. To obviate this it occurred to me to apply to the head a plastic mass, impermeable to the x rays, leaving only that portion of the scalp exposed to the rays which it was desirous to treat. Accordingly, I began to experiment with plasticine, the material with which children model. To this plasticine I added the salts of different metals and even the powdered metal itself in varying proportions, to see if I could make a mass impermeable to the rays; when I had succeeded in obtaining it the mass was so dry that it had lost all its plasticity and was useless. I found, however, a suitable substitute in a lead putty, merely ordinary putty with a fair amount of red lead added; this, even in a thin layer, was impermeable to the rays, which I was able to prove by covering the free end of a lead glass tube with it and using the fluorescent screen. To use the putty I roll out a sheet of it about 15 inches square and a quarter of an inch thick; this I place on the patient's head, moulding it smoothly over, then with a blunt spatula I remove a window over the area to be treated and no matter how irregular in shape this space may be the hair epilates uniformly after exposure to the rays and no untreated or over-treated sectors occur.

I shall be very pleased to show this method to anyone interested in the x ray treatment of ringworm or allied diseases, and if any difficulty is found in making the putty it can be obtained from Mellin and Co., chemists, High-street, Eltham, London, S.E.—I am, Sirs, yours faithfully,

JOHN D. RICE, M.B., B.Ch. R.U.I.

New Eltham, S.E., Dec. 28th, 1906.

MEAT DIET AND THE TEETH.

To the Editors of THE LANCET.

SIRS,—In his letter in THE LANCET of Jan. 5th, p. 51, Dr. J. Sim Wallace points out that some facts mentioned in my paper to the Pathological Society of London have a bearing on an important and keenly debated question in dental pathology and he asks for a fuller statement of the observations and conclusions drawn from them. In the first place, I desire to point out that any credit which may be due for the observations on the teeth referred to at that meeting and reported in your issue of Dec. 29th, 1906, p. 1777, should be given to G. W. Watson, L.D.S., and Dr. J. H. Gibbs, who made the investigation and gave a demonstration of their results to the Physiological Society in June, 1906.

Two series of observations were made into the state of the teeth in meat-fed rats. In one series young rats when weaned were fed on an ox-flesh diet, this régime being continued for from five to eight months; eight animals were employed for this investigation, an equal number of bread-and-milk fed subjects from the same litters being taken as controls. The second series comprised the progeny of meat-fed rats, 30 in number, with a like number of controls; the ages of these animals, which were also fed on an exclusive meat diet, ranged from one day to three months. The methods of investigation were: (1) a naked-eye examination of the size and general appearance of the teeth; (2) grinding down the teeth and submitting to microscopic examination; and (3) comparison of the histological appearances of the decalcified tissues. All the teeth examined in the meat-fed and bread-and-milk-fed animals alike appeared perfectly normal with three exceptions. One of these was a meat fed animal and two were control bread-and-milk-fed subjects. These showed developmental defects, which, Dr. Gibbs informs me, are identical with those frequently present in the teeth of

children, in whom they constitute a strong predisposition to caries.

The conclusions drawn from these observations are as follows: (a) The great increase in the consumption of meat in the past 50 years, to which I have recently drawn attention, is not an important factor in the development of dental caries, the increasing prevalence of which was proved by the recent investigation by a departmental committee; and (b) in view of the deficiency of lime in the meat diet and of the imperfect development of the osseous system generally under this régime, as described in THE LANCET of Dec. 8th, 1906, the results of this research to my mind conclusively negative the view that a deficiency of lime salts in the dietary makes the teeth susceptible to caries. Dr. Sim Wallace is therefore right in assuming that the facts ascertained from this research support his teaching on this subject.

I am, Sirs, yours faithfully,

Edinburgh, Jan. 6th, 1907.

CHALMERS WATSON.

THE USE OF CLAY IN SURGERY.

To the Editors of THE LANCET.

SIRS,—Respecting the annotation in THE LANCET of Jan. 5th, p. 44, on the use of clay in surgery, may I say that in 1865, when I was dresser in Lord Lister's wards, a sheet of pure tinfoil and a thick layer of "antiseptic putty" were used as the ordinary dressing to surgical wounds of almost all kinds.

I am, Sirs, yours faithfully,

Worcester, Jan. 7th, 1907.

T. BATES.

THE CASE OF MR. PEERS.

To the Editors of THE LANCET.

SIRS,—Please permit me to offer my sincere thanks to all who have expressed their disapproval of the county court judgment and their sympathy with me in such a kind and acceptable manner. The amount I have received (£35 6s.) will practically reimburse me, but I value far more the generous feeling displayed towards me by my fellow practitioners and by the distinguished men who have joined with them in their expression of sympathy. To them and to you, Sirs, for placing your columns at my service I once more tender my grateful thanks.

I am, Sirs, yours faithfully,

T. H. PARKES PEERS.

Surrey-square, Old Kent-road, London, S.E.,
Jan. 7th, 1907.

THE TREATMENT OF INFECTED EARS.

To the Editors of THE LANCET.

SIRS,—As an old advocate of conservative methods in the treatment of infective otitis I am interested in Dr. F. Spicer's letter. Of course, many cases of suppurative otitis will recover after a partial operation on the membrane with subsequent efficient attic irrigation. The membrane often heals, sometimes too readily, for one should be sure that the cavities are disinfected before allowing it to close; and this is by no means easy to be sure of. I have always taught that every case should be treated on its merits and some cases require no operation at all. But I have seen many cases in which unsuspected mischief has been progressing behind a healed membrane, and, except in comparatively recent cases, I believe it to be the safer practice to remove the membrane completely. Some time back I performed a post-mortem examination on a case of meningitis. In this case both membranes were entire but there was caries of the attic roof the result of old middle ear disease. My other point is that, as Mr. M. Yearsley points out, the hearing is often far better after removal of the membrane. Some years ago I showed a number of patients with good hearing who had had both membranes completely removed. I could have shown at the same time several patients who had apparently recovered with healed membranes. More than one of these latter cases has since developed symptoms requiring operation. Removal of the membrane will sometimes restore hearing in advanced cases of chronic progressive deafness. Yesterday a lady came to see me whose left membrane I removed in 1904. At that time she was absolutely deaf in the left ear in spite of much advice. She can now hear a sermon in church, though the right ear, which was also affected, is now absolutely deaf.

She tells me that the hearing improved more during last year than in 1905, an interesting fact in opposition to the predictions of more than one otologist.

I am, Sirs, yours faithfully,
Jan. 5th, 1907. F. FAULDER WHITE.

GASTROSTAXIS.

To the Editors of THE LANCET.

SIRS,—In his interesting address on Gastrostaxis published in THE LANCET of Nov. 3rd, 1906, p. 1189, Dr. W. Hale White refers to 29 cases which he has collected. May I draw attention to another case in which I operated, published in the *Intercolonial Medical Journal* of Feb. 20th, 1901? This patient was diagnosed as suffering from gastric ulcer at the Prince Alfred Hospital, Sydney, as well as by two physicians at St. Vincent's Hospital, Melbourne, was operated on, and died, and post mortem no lesion could be found anywhere in the alimentary canal from oesophagus to rectum, or in any abdominal organ. Another unpublished case was the following, seen on July 18th, 1906, with Dr. Alan Mackay and Dr. W. A. Wood. A married lady, aged about 30 years, had for several years been subject to very severe attacks of hæmatemesis with epigastric pain. In several of these she was so collapsed as to be apparently on the point of death. In spite of treatment and most rigid dieting the attacks recurred at varying intervals. The possibility of gastrostaxis was considered and mentioned to the patient and her husband but gastro-enterostomy was advised and performed. The interior of the stomach was very thoroughly examined, the mucous membrane being protruded through the gastric incision, but no ulcer or other lesion of the mucous membrane could be found. On the second day after the operation she developed acid intoxication with symptoms exactly like those of diabetic coma. The urine contained no sugar but traces of diacetic acid and much indican. She died on the third day after operation. Unfortunately no post-mortem examination could be obtained.

Melbourne, Dec. 4th, 1906.

I am, Sirs, yours faithfully,
G. A. SYME.

HOSPITAL REFORM AND THE CLERGY.

To the Editors of THE LANCET.

SIRS,—I have been reading with much interest your article on hospital administration and reform. As you point out, the root of the evil lies in the fact that large numbers of people have come to expect free treatment as a right and that charitable persons insist on a return for their subscriptions in the shape of a subscriber's letter.

Now these are two serious faults which can only be checked, not cured, by the appointment of almoners. An alteration of public opinion on these points is needed and it can be effected by no body of men so well as by the clergy. It seems ridiculous that we should often have to spend a large part of our time in making the necessary inquiries before signing a letter, doing work that an almoner at the hospital could do so much better, while all the time we are neglecting the teaching of self-reliance and of higher ideas of charity which certainly should be part of our duties. May I suggest, therefore, that every member of the medical profession should do his best as occasion serves to bring this matter before individual clergymen, pointing out to them the waste of their time and the harm of the present methods while urging them to preach higher conceptions of social duty?

But I have a further object in writing. It is not merely that I grudge the time we have to spend in making inquiries before signing letters, and regret the abuse of the hospitals where such inquiries are not made; I regret even more the fact that we clergy are looked upon by the working-classes as mere amateur relieving officers. I am convinced that so long as there is any expectation on the part of the poor that they may receive material help from us our real spiritual work is ruined. I see no chance of any great spread of religion among the masses till it is entirely separated in their minds from the receiving of relief. If medical men will point out to us that in working for hospital reform we are making possible our own special work, each profession will be helping the other for the common good. But there is a mass of false opinion on the subject which will only be altered if each individual medical man

will approach each individual clergyman whom he knows with the object of converting him.

I am, Sirs, yours faithfully,
(Rev.) CLEMENT F. ROGERS.

Southampton-row, W.C., Dec. 23th, 1906.

WEST AFRICAN MEDICAL SERVICE.

To the Editors of THE LANCET.

SIRS,—A month or two past I read a letter in THE LANCET contrasting the West Indian with the West African Medical Service rather to the advantage of the latter. Perhaps in writing to give you a few of the real facts, about the conditions out here I may be doing a service both to the members of the West African medical staff, of whom I am one, and to anyone who, knowing no more of the matter than he can learn at the Colonial Office, may think of coming out here and benefiting himself thereby. Economy—on paper—is the fashionable watch-word of the administration at present and it is with economy as practised at the expense of the medical service that this letter chiefly has to do. The ordinary person at home would naturally think that in a climate such as this the medical officers would be people of considerable importance, well paid, well equipped, and with every facility given them for the proper performance of their work.

Let us contrast this with the facts in being. In the first place, there are never enough of us on the coast to supply all the stations. I think I may state as a fact that every station has never been in possession of a medical officer at one and the same time, and some stations have been without any medical officer for months at a time, not once but two or three times in my own experience. There may be a station in Southern Nigeria which is fully equipped with surgical instruments, drugs, and appliances, but though I have been stationed in several places and have discussed other stations with their medical officer I have yet to meet or to hear of one which at all nearly approaches that standard. Many I know have a few old knives and scissors, probably some antiquated tooth forceps, and a post-mortem case, as their equipment for looking after the lives of white men. I have never seen an ophthalmoscope, a liver-abscess outfit, a case of eye instruments, or a case of sounds for stricture—to mention a few out of many absent important instruments provided in any station. That these and other necessities have been applied for times without number I know well, the answer given being that the huge vote of £1000 a year for drugs, instruments, and sundries for some 80 stations will not cover such expenditure. Many men bring out their own instruments rather than be called upon to face an emergency without proper tools. As to drugs and appliances, one's requisition list is usually shorn of all that is individual to the man making it, and every medical man knows what it means to be without the drugs which he is particularly fond of, and I know of a case where the item of two towels and two dusters for hospital work were out of a requisition, the result being that the medical officer had to use his own or do without; he did the former. There may be military expeditions on which a medical officer is equipped with an amputation case and a bullet extractor; I daresay there have been but I know of two cases where neither of these necessities was included, and one of these expeditions lasted over five months. In this last instance the medical officer applied for a trephine; it was refused with instructions to send any patient needing such an instrument to the nearest big station. Oddly enough, a case for trephining did occur, and the patient was sent to the nearest big station, with a loss of time of six days and, curious as it may seem, that station had not got a trephine either.

Before we come out here the Colonial Office pays for a course of instruction at the London Tropical School of Medicine; the value of this instruction is, however, greatly discounted by the extreme difficulty experienced, in spite of the bold assurances given at the Colonial Office, in getting a microscope allotted and sent to one. Economy does not allow the natural remedy for this of keeping a microscope at each station. Numbers of cases are extant of a microscope being supplied in, say, the eighth month of the tour (it sometimes comes as early as the fourth or fifth), while the slides, stains, &c., did not reach the applicant till just before he was going on leave. A hospital for Europeans in every large station would seem a necessity to the ordinary person and there is one I know in South Nigeria and I know of another one

building. But how many lives have been thrown away by there being no hospital accommodation, which is almost universally the case, and how many people have been invalided for the same reason one cannot say, but the number of European officers who die on the way home and in the first three months after their arrival in England must be added to the Government death-rate to get an idea of the reality.

How can a medical man do his ordinary work and nurse a couple of serious cases day and night—one very likely in his own bed—and do the work properly? It is impossible, even leaving out of the question the danger to his own health and life, but it is done out here constantly and "economy" is supposed to justify it. I know of a case where a European hospital was down and passed in the estimates for 1906 and the building was not started till the middle of October; the reason given—I cannot vouch for the truth of it—was that the governor wished to choose the site on the occasion of his annual visit, and some colour is given to this by the fact that he did choose it and a different site from that previously selected by the medical officer of that station. Another instance of economy in connexion with that hospital is that the balcony verandah was originally designed 10 feet wide all round and economy in the shape of the governor cut this down to 9 feet at the sides and 6 feet at the ends.

And now as to the pay. A medical officer gets £400 a year, rising to £500 by yearly instalments of £20; a small percentage pass on if they survive to the giddy height of £800-£700 a year as a senior medical officer, of whom there are three or four, while £800-£900 is given to the deputy principal medical officer and £1000-£1200 to the principal medical officer. Considering the importance of the medical man in this climate let us contrast this with the pay of other professional and non-professional men. Senior district commissioners, £600-£700; ordinary district commissioners, £500-£600; police magistrates (professional), £500-£600; puisne judges (professional), £1000; Solicitor-General (professional), £700-£900; superintendent of telegraphs, £500-£600; marine superintendents, £500-£600; superintendent engineer, £600-£800; engineers, £400-£500; assistant conservators of forests (recruited from anywhere), £500-£700; provincial engineers, £600-£800, and so on; somehow the medical man does not rank very high, but this is not all.

Up to May 1st, 1906, the medical officer as a second class officer (a matter of size of salary) was entitled to a travelling allowance of 15s. a day in common with all officers of his standing. In connexion with the amalgamation of Southern Nigeria and Lagos travelling allowances have been cut down to 5s. a day for officers of that grade, but a compensating allowance called "duty allowance" varying in amount from £80 to £300 has been granted to every officer of that or higher standing except the medical officer. The excuse for this "economy" is that the medical officer is allowed private practice. Private practice in the majority of stations does not exist, and where it does has not a medical man the right to money earned after Government work is done in the exercise of his profession without a deduction from his salary being made! Much of the work would have to be done whether the Government liked it or not.

Up to last year medical officers had an allowance of £50 a year for doing public health work and many of them took a course in public health and a diploma to enable them to do the work well. Last year an attempt was made to remove this shocking piece of Government extravagance altogether, but a few men were not to be bluffed and finally the allowance was continued in the case of men who had joined the service before Jan. 1st, 1905. Medical officers appointed after this date do not get the allowance, but are, of course, expected to do the work, and equally, of course, they have to submit to having their work criticised and in some cases altered by political or even by army officers or other laymen who, of course, know much more of sanitation than does a medical man. Practically, then, the medical officer is the only person to suffer by this economy, certainly the only professional man, and this surely ought not to be.

Can your influence, exerted perhaps in Parliament, alter, or help to alter, this condition of things? At first? If nothing else can be done, a warning to medical men contemplating joining this service to get black and white (economy is still going on, "rigid" is now pressed in official documents) should do good, so that if

they join at all they do so with their eyes open, knowing that their living wage cannot be further reduced. Moreover, we think that if they have a full knowledge of the state of things the better class of medical man will not offer himself for this service, which will make the Government treat us fairly, as if the class of medical officer goes down the class of other employees will go down too, the best class of men not caring to risk their lives unnecessarily.

I am, Sirs, yours faithfully,

A WEST AFRICAN MEDICAL OFFICER.

THE ARMY: PROJECTED CHANGES, MATERIAL AND MORAL.

To the Editors of THE LANCET.

SIRS,—In a leading article in THE LANCET of Dec. 15th, 1906, p. 1673, you criticised Mr. Haldane's recent address to the members of the committee which he has called into being to advise the Army Council in matters affecting the spiritual and moral welfare of the army. As you observed, Mr. Haldane's meaning was occasionally elusive and there was much that was nebulous and indefinite in his speech, but at the same time none can deny that Mr. Haldane is probably more capable of clear reasoning and definite expression than the majority of his colleagues in the Cabinet. Perhaps as a philosopher accustomed to the guidance of pure reason he felt a little uncertain as to the terms in which an audience composed principally of ministers of various religious denominations should be advised and as to what topics should be especially recommended for their consideration. Possibly he may have felt that, as you expressed it in your article, "the committee is cut off from a valuable source of information by not containing a medical member." His words when read carefully seem to suggest this, for he said among other things, "nowadays it is realised that you cannot save men's souls without attending to their bodies, and, conversely, it is considered that all cannot be well with their bodies unless it is so with their souls also." In another passage he referred to the importance of inculcating temperance, as a work demanding the co-operation of all interested; and in yet another he said, "Religion is not morality but morality and religion go together; you cannot divorce religion from its surroundings, but if the surroundings become better then the awakening of religious life becomes easier." The moral and religious aspects of a soldier's possible mental training Mr. Haldane naturally found to be inseparable, and he seemed to have on the tip of his tongue admissions that the consideration of his physical circumstances and conditions of life was also involved. Indeed, as has been said above, he referred directly to the evils of alcoholic intemperance and he also made allusion to the opportunity for moral instruction which might be found when the soldier lies sick or injured in a military hospital. At the same time the fact remains that Mr. Haldane has placed no medical man's name in the list of his committee, although it does not consist exclusively of ministers of religion, and although upon it one or more army surgeons of experience in their branch of the profession and one or more physicians of wider experience in some directions than army surgeons may have the opportunity of enjoying would have been of considerable service.

In the various circumstances of barrack life, in the feeding arrangements and in those connected with the supply of alcohol and other refreshments, in the provision of sleeping accommodation, and in sanitary matters there is much which affects physical and moral conditions simultaneously. In connexion with morality, one particular and obvious phase of the question, that of sexual morality, involves physical considerations almost impossible to eliminate from any discussion primarily devoted to the religious bearings of a difficult subject. All the above points and many others need to be ventilated and discussed not only by teachers of religion, and not only by eminent leaders and organisers of soldiers as fighters in the field, but by others whose acquaintance with the soldier is more intimate than that of the general or the bishop (or even the chaplain), and by those whose knowledge of their subject is increased and supplemented by scientific training. The medical man would have his prejudices like other members of the committee. His prejudice, for example, would lead him to oppose any movement which had as its probable result the hindering of the soldier from seeking medical advice at the earliest possible opportunity when infected with venereal disease.

In a recent paragraph *Truth* informed us that "a very

proper order has been issued by Lord Kitchener in India under which men admitted to hospital for certain reasons for which they may be rightly held responsible shall forfeit service pay for 12 months and be required to make up subsequently all guards and pickets which they have missed while in hospital and be disqualified for all paid employment." An order such as this, if it refers to the class of disease mentioned, as it pretty obviously does, might logically be considered likely to impel the soldier to seek early relief in order to avoid recourse to the hospital at a later stage, but the soldier is not logical and it is really almost certain to influence him in a diametrically opposite direction. In addition to military punishment we may now see a tendency to make the soldier ashamed of his moral downfall with a kind of shame which will come home to him when he is infected with disease but which will not prevent him from running the risk of contracting it. As a matter of fact, the effect of such an order as that outlined by *Truth* and of any shame to admit himself a victim will be, almost universally, to drive him to the quack doctor who in India no less than at home, but perhaps more so, lies in wait for a victim whose health he can undermine and whom he can bleed and blackmail to his heart's content owing to the fact that he is liable to an unbending military discipline. A medical man or two with knowledge of the natives and native doctors of India, of the soldier's ways in the "Shiny East," of the leisure on his hands there and of the difficulty which he has in killing time, of the temptations of the bazaar, and of the ways of the native women who may come in the soldier's way outside the bazaar, would be of use as witnesses if the committee is going to call evidence; and in any case would be highly desirable as members of it.

It will be interesting to note if any conclusions are arrived at unanimously by a committee consisting so largely of religious teachers of different sects. The bishop in India, and, I believe, at home, has considerable authority over the army chaplain, and the army chaplain's performance of what he conceives to be his duty at times leads him to do what is not in the rubric, so that he is brought into collision with a bishop whose knowledge is of the rubric rather than of the soldier. The committee contains many other elements not to be described as homogeneous. Will these fuse themselves because they sit side by side round the same table, or will the committee meet slightly more of a mundane element to render its deliberations of practical usefulness? From what point of view, for instance, will they discuss the marriage question and what will they say about it? It has its physical and medical aspects and the restrictions on marriage in the army are at the bottom of much of the sexual immorality and venereal disease in it. Will the committee agree to say anything on this topic and, if it does, will what it says be listened to? Or will it say very little and will its observations, if any, be politely filed and forgotten? The matter is one of great interest. The moral atmosphere of the army is such as to keep out of it many thousands who would make good soldiers or to inflict upon them if they enlist intolerable pain and discomfort, often moral deterioration and degradation. It is to be hoped that Mr. Haldane intends to make an experiment of a genuine character, and if anyone can make it a useful one he can. That the *personnel* of the committee might be improved upon will, however, occur to many.

I am, Sirs, yours faithfully,

LOOKER-ON.

Jan. 7th, 1907.

THE HYGIENE OF CHILDHOOD IN GERMANY.

(FROM A CORRESPONDENT.)

IN April and May of last year a short course of training for those engaged in the administration of charity and especially in the care of young children was held at Frankfurt. Ten years ago a private citizen founded an institution called the "Zentrale" for the administration of charity and the direction of charitable endeavour. While coöperating with existing institutions the new one struck out for itself in various directions. It gave much attention to infant mortality, it arranged holiday colonies, widowers' homes, and maternity insurance clubs, and made arrangements for the better teaching of invalid cookery. The Swiss Federal Government, invited to send a commissioner, chose Dr. Zollinger, whose report on school hygiene at the Paris

Exhibition of 1900¹ attracted so much attention. Dr. Zollinger's report on the Frankfurt Congress is before us. It is entitled, "Probleme der Jugendfürsorge," and is published in the Year-book of the Swiss Society of School Hygiene.²

Stated briefly, the report deals with the whole problem of the production and treatment of the unemployable (*Die Sozial-Unbrauchbaren*). The state of civilisation of a nation can be judged by the means taken to deal with this problem. It must not be taken for granted that it is good for a nation to rely on foreign importations for its supply of unskilled labour or that social inequality can be redressed by the simple act of giving money. The best way of giving relief is to measure the social capacity of the individual and to teach him to make the most of it. If he does his best and yet cannot support himself he must be assisted, but in this case no moral stigma attaches and no moral evil results. Frankfurt is a city of Jews, and the Jews have always borne a good name for the care of their mothers and young children. It is not surprising to find that the care of the bearing mother is the first object of the association. A maternity club is in operation which performs the heavy housework for the expectant mother and grants her sick pay during the period of lying-in. Sometimes this help is insufficient, the weekly wage may be stopped or too small to maintain the family in efficient capacity for work. In these cases further help is granted or obtained. Many women to whom a maternity home would be of great service refuse to enter one as they do not care to be the subjects of clinical instruction. Herein the wife of the lower middle-class suffers most. The working woman has no compunction in seeking aid at an institution but the small trader's wife tries to manage her home while she is lying-in. The establishment of a maternity home, without clinical instruction, where the mother can be treated at the rate of her sick pay, is considered a most desirable aim. The working woman is already protected by statute from factory labour for six weeks after delivery but she is not forbidden to do work at home, whether housework or for wages, and this can be prevented by offering her maintenance under conditions which will free her from worry.

In Berlin there is an Association for the Protection of Mothers which publishes a periodical called *Mutterschutz*. But there is a great objection to loose sheets which are easily lost. In some towns a mother is supplied with a pamphlet of instructions, dealing with the care of young children, on registering a birth. This pamphlet also gets mislaid. The best plan is to issue a calendar on cardboard, with rules for a mother's guidance. Such a calendar can be obtained from Hermann Meyer (Frankfurt-am-Main, Bleichstrasse 23). It gives a tear-off calendar with 12 golden rules for mothers on the sides. The first of these is, "Nurse your child yourself." The subject of breast-feeding of infants is becoming of first importance in Germany, where the Kaiserin has given so much patronage to the endeavour to check infant mortality. Professor Mayet, whose views are quoted on pages 23 and 24, advocates that each mother should be put on sick pay by her club for 12 weeks, the pay to begin six weeks before the time of expected delivery. Further, that a premium of 25s. should be paid to a mother nursing a child for six complete months and a further 25s. for each child nursed for a whole year. He demands that maternity insurance, which is optional in sick clubs, should be compulsory, not because the woman is unable to perform her work properly but because heavy work before delivery is injurious to mother and child. If workmen's insurance be extended in this manner then two-thirds of the births in the German Empire will take place under hygienic and sympathetic conditions and the mortality of infants will receive a severe check. But if a mother is to suckle her child she must be well fed. This means the establishment of a special cuisine for nursing mothers and the supply of suitable food ready prepared for mothers who work in factories. For these women a crèche should be established at or near the factory to which they should have regular access.

Dr. Zollinger gives a detailed description of the arrangements made at Marburg for the care of unweaned children and the supply of milk products to parents (pp. 43 to 57). The Marburg Institute is divided into three departments—one is a home for infants, the second is for the preparation and sale of milk products, and the third is for the supply of

¹ Bestrebungen auf dem Gebiete der Schulgesundheitspflege, Orell Füssli.

² Zürich:

milk. In the milk kitchen all kinds of milk diets are prepared according to prescription and they can be bought on a medical man's order. What is of interest, however, is the list of rules for the conduct of the dairy. All cows are vaccinated with tuberculin. They are inspected every six months by the veterinary surgeon and revaccinated at least every year. Strict regulations are in force as regards the stalls, bedding, fodder, water, and milking utensils. The milk is tested on delivery at the kitchen for fat and once a week in the bacteriological laboratory. Cows are milked twice a day. Before milking, the operator must wash the udder of the cow and his own arms and hands. He may not begin till the stall is thoroughly clean or operate directly after a dust has been created. The first milk must be drawn out on the floor. The milk-pail must have a small opening and, inside this, a strainer consisting of a boiled cloth must be fixed. It is not improbable that in the near future a separate stall, with glazed tiles and washable floor, will be erected in which all milking will take place. In this stall the hose will be in frequent operation. The products sold are prepared in accordance with the infant's requirements. Dr. Effer of Dantzic has shown that the use of cows' milk causes more than three times the amount of illness and about four and a half times as many deaths as occur among breast-fed children. Professor Mayet calculates the protective power of breast feeding as reducing the mortality by 80 per cent. He considers that the adoption of breast feeding will be ultimately worth 28,000 men annually to the German army. Dr. Rösé of Strasburg asserts that the longer a child is breast-fed the less likely is he to suffer from dental trouble and rickets, and the more fitted he will be eventually for military service. The constant appeal for military *Tauglichkeit* (fitness) is the least pleasing feature of the agitation. But the German knows his own people best and must select the motives on which to work.

The attention given by Dr. Zollinger to the treatment of illegitimate children, to which 50 pages are devoted, shows that these unfortunates are likely to bear less of the stigma of their birth in the future. At Frankfurt the Zentrale takes over the guardianship. In Berlin a special home is opened for girls of a respectable class who have been betrayed. These suffer most of all, for their relatives consider only their own position and are anxious to lose all sight of the girl. It is of great importance that illegitimate children should be prevented from joining the ranks of the morally abandoned and later the criminal classes. For this purpose it is usual in Germany to provide the child with an official guardian. At Leipzig he acts from birth up to the time when the child leaves school. At Frankfurt a close inspection is made of all boarded-out children. For particulars of the treatment of illegitimate children in the large towns of Germany the reader cannot do better than turn to Dr. Zollinger's pages.

Two other features of the Frankfurt organisation call for consideration. The widowers' home is an institution for working men in which a home is provided for each family. The children are cared for and fed. They spend their leisure with the father and sleep at night in dormitories. The rent of a two-roomed house is from 3s. 6d. per week; the charge for board is: for one child 3s. 6d., for two children 6s., and for each other child 1s. extra per week. On Sundays a dinner for parents is provided at 4d. per head. Workshops can be hired in the basement at moderate rents.

The treatment of juvenile offenders receives a great deal of attention in the volume. The American system of separate courts is recommended for adoption and a system of placing the youthful offender on report, or of postponing sentence, receives favourable notice. For the treatment of these interesting subjects there is no room here. Those who wish to learn Dr. Zollinger's views will perhaps be content with the following recommendations which conclude his report.

1. Courses of instruction in the care of children should be formed. They need not last more than a fortnight, but they should embrace both the theory and practice and be suited to the needs of officials and private parents.
2. In large communities, by the amalgamation of small philanthropic societies, a central institution, similar to the "Zentrale" in Frankfurt or the Zentral-Station in Berlin and Dresden, should be formed.
3. All arrangements that a mother better for her duties should receive official encouragement. In this respect the dilemma of Counselors in the care of the child begins with conception should be remembered.
4. The interest of the State in the child does not begin when the child appears at school age but on birth, and is needed most in the case of children who are in special or abnormal circumstances.

5. Special care must be given, from official sources, to illegitimate children. Official or professional guardianship should be introduced to protect mother and child and to guarantee proper medical and educational care. Guardianship should begin before birth and continue till the child has finished its apprenticeship.

6. Breast feeding should be supported in every possible manner. On the registration of a birth the mother should receive a paper of instructions on the care of infants. The parish council should undertake the supply of milk for infants. Infant nursing homes should be eligible for grants of public money.

7. The establishment of crèches, day homes, and widowers' homes corresponds to a social want. Public encouragement should be given to any scheme for meeting this want.

8. The establishment of holiday colonies, country schools, and of school clothing clubs should be encouraged. All schools should be under medical inspection.

9. The care of children is best managed, in general, by the family. But in cases of physical or mental weakness it is better intrusted to an institution.

10. An Act should be passed dealing with the subject of the protection of infant life. It should fix the age of responsibility at a minimum of sixteen and should provide for special courts for the trial of youthful offenders. It should contain some scheme for placing an offender on report or under supervision.

THE PARIS ABATTOIR AT LA VILLETTE

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

PARIS is so beautiful a town, incomparable in so many respects, always charming and attractive, that its example influences the whole civilised world, but more especially the larger towns of France. What Paris does other towns strive to imitate. This is not always an advantage. In regard to the slaughter-house question it has proved a decided disadvantage. Certainly Paris early in the history of municipal enterprise instituted public abattoirs, but in so doing it allowed the private interests of a trade to interfere with the interests of the public at large. The public slaughter-houses of Paris are vast institutions. Indeed, they have become public show places, especially the largest, situated at La Villette. Here notably a public reception was given to the members of the London County Council when they visited Paris last February. The sight was very impressive. The vast extent of the open space at the approaches of the slaughter-houses facilitated the accumulation of a large crowd and the display of military as a guard of honour. Also the abattoir covers 16 hectares (about six acres) of ground and it is a municipal institution. Viewed at a distance by non-technicians it seems to be a very vast and fine installation. In all this, however, appearances are deceptive. Paris is not setting an example to the world, and not even to France in respect to abattoirs. Paris only followed the example of the French provinces and followed it badly.

A very important work has just been published on this question. It is entitled "Les Abattoirs Publics." The first volume has 902 pages and many illustrations. The largest half of the book is devoted to cold storage and the rest to the construction of slaughter-houses and all that appertains to them. It is written by M. J. de Loverdo, sanitary engineer, licentiate of sciences of the Sorbonne, who for four years travelled in various countries on behalf of the French Ministry of Agriculture to study all that related to the question of abattoirs, meat storage, &c. The second volume of this great work, one of the greatest of the books, if not the greatest, written on the subject, has 645 pages, with many illustrations some of which are admirably coloured. The principal author of this second volume is M. H. Martel, doctor of science and chief of the sanitary veterinary service of Paris. He is assisted by M. Mallet, veterinary surgeon and director of the Argers abattoir. This second volume deals with the inspection and administration of slaughter-houses and cattle and other markets. To M. Martel personally I am indebted for a great deal of information and for his kindness in devoting much time to show me round La Villette abattoir. This was a little trying for him, I fear, as he had to confess at almost every step the imperfections of the installations and methods adopted. But these are certainly not due to any neglect or ignorance on the part of the officials. The latter have been unceasing in their complaints and protests. With the assistance of the big volumes just mentioned I am now able to describe not merely what I saw at La Villette but can also explain how the present evils arose.

This article commences a short series describing slaughter-houses in different countries, the object being to bring together materials from existing practice to form a basis for a constructive policy.—ED. L.

It appears that the butchers were a specially privileged section of the community. In the celebrated encyclopædia which so effectively contributed to bring about the great French Revolution Diderot wrote a long article under the heading "Butchers." Here it is shown that the butchers of Paris contrived to secure some of the advantages that were accorded to the butchers of ancient Rome. It was a very close corporation. The right of being a butcher was restricted to certain families and these formed a sort of aristocracy. They were very rich and able to make loans to the king and to buy privileges which exempted them from the action of the common law. It would seem, however, that the butchers ultimately made abusive use of these advantages so that their special privileges were abolished by Royal decree in March, 1719, and they then came under the common law. The Revolution in 1789 abolished all the guilds or trade corporations and then, as anybody who chose could become a butcher, abuses due to excessive licence soon arose. A decree therefore, dated the 8 Vendémiaire of the year XI., re-established the butchers' corporation and limited the number of butchers' establishments. Thus the trade won back a great deal of its lost influence. The numerous private slaughter-houses which rendered life hideous in the suburbs of Paris were abolished by law, and finally a decree was issued on Feb. 9th, 1810, ordering that five public slaughter-houses should be built at the cost of the town of Paris. Thus, if the London County Council can make very great haste and bring much pressure to bear there is just a chance that in obtaining public slaughter-houses London will not in this respect be more than about 100 years behind Paris. By the way, I know that THE LANCET is no supporter of those who are ever girding at the London County Council, if only because THE LANCET has no politics, but it is the duty of all sanitarians to insist that in the matter of slaughter-houses much remains to be done by the municipal authorities of our capital.

The city of Paris was not, however, the first to move in the matter. There had been something like public slaughter-houses in the Middle Ages, such as the *cocherie* at Amiens, built in the thirteenth century, at Lunel in 1366, and a century later at Troyes and Sommières. But what might more justly, and in the modern sense of the term, be considered as public slaughter-houses were built from 1780 to 1812 at Rochefort, Blois, Grenoble, Orleans, and other provincial towns. M. de Loverdo gives the plans of some of these abattoirs built a century ago and claims that in them will be found the prototype of the most perfect slaughter-houses of modern Germany. How is it, then, that to-day the French abattoirs are very inferior to those of Germany? The fact is that in building the first public slaughter-houses the advantages of working together in public were considered of the greatest importance. A large hall is easier to watch over, to clean, to ventilate, and to illuminate than a number of small separate compartments. Thus in these earliest of French public slaughter-houses, just as to-day in the latest types of perfected German and Swiss slaughter-houses, there are no small private killing-sheds but large, brilliantly illuminated halls where no concealment or privacy is possible. This was done in the provinces because in the smaller towns the butchers' corporations were not as powerful as in Paris. In Paris the butchers extracted a promise from the authorities that if their private slaughter-houses were abolished they should enjoy equal freedom and privacy in the public slaughter-house. Therefore the plan first proposed for a large slaughtering hall had to be abandoned and schemes prepared so that each butcher might have a small compartment entirely to himself.

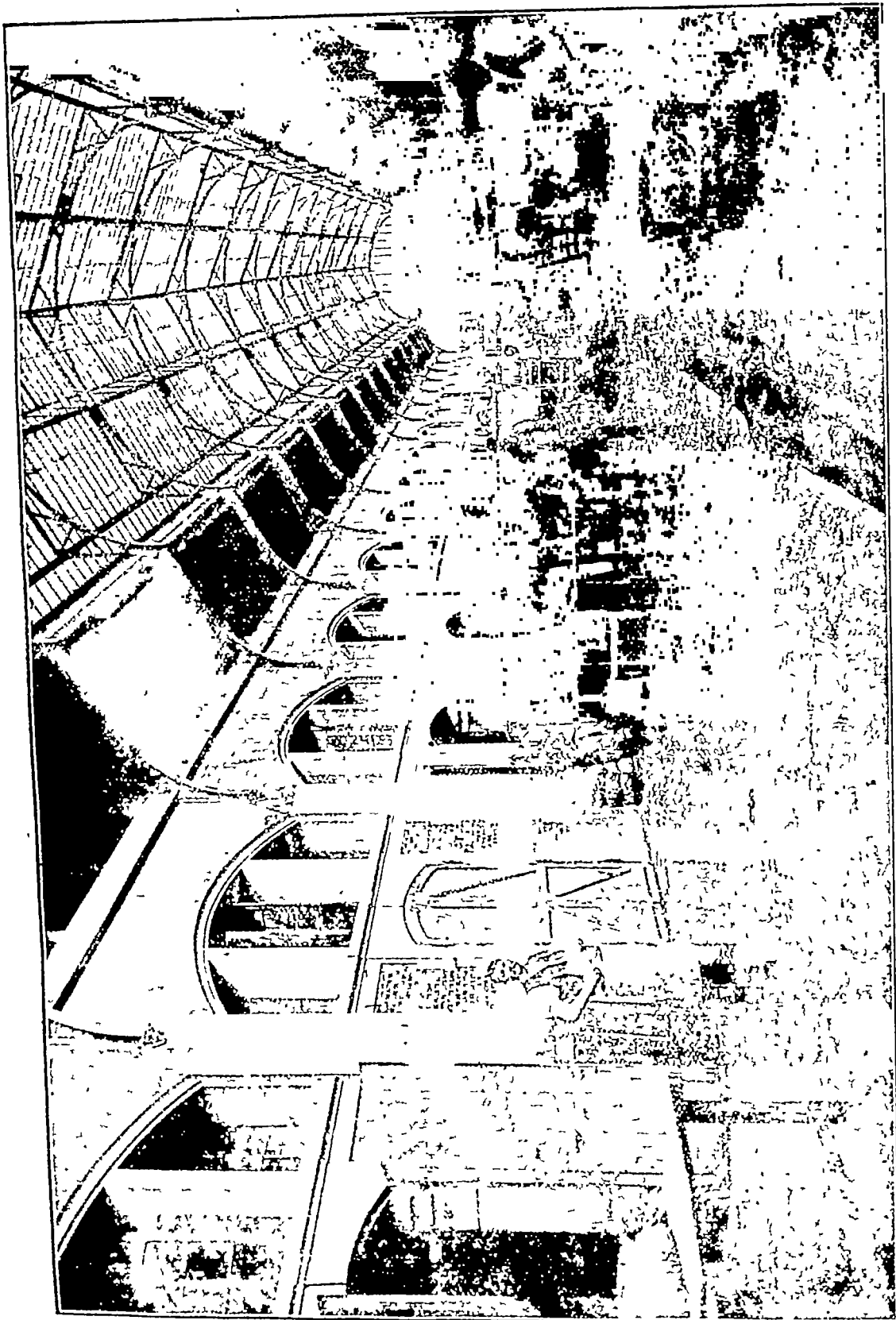
The first five public slaughter-houses of Paris were erected at the Roule, Villejuif, Grenelle, Ménilmontant, and Montmartre. When first occupied in 1818 the butchers were greatly surprised to find that their habits were in nowise interfered with or altered. The plan then adopted has not been altered since. It consists of two long rows of low buildings with a court between them. Giving on to the court, which is often roofed over, there are numerous compartments something like coachhouses. At the back of each compartment there is a small door opening on to a road and there the meat can be taken away or the live cattle brought in. In front of each compartment there is a large double door which, when open, not only supplies air and light but enables the butcher to step out and do a part of his work in the court. At a distance these structures look like long, low, and broad pavilions but when seen close to

and from either end the centre appears as a great glass-roofed gallery and on the sides only is there solid masonry to wall off each butcher's private compartment. In some abattoirs this centre is not roofed over and then it appears like a thoroughfare or street.

These five ancient slaughter-houses cost the city of Paris about £800,000 and occupied 156,500 square metres of land. It is calculated that the land cost 6 francs, the building 109 francs, and interest on capital during the period of construction 13 francs per square metre. Altogether, 128 francs, or £5 2s. 6d., per square metre. The actual amount of land covered by buildings was 43,000 square metres and the cost of construction if divided by this smaller figure would amount to 395 francs, or £15 16s., per square metre of building. These figures are interesting, for they show that more than two-thirds of the land were left open and not built upon; thus such structures as did exist were amply surrounded with space, so they would be exposed from roof to floor to the direct and purifying rays of the sun. Also, it must be recognised that the earliest architects of the Paris public abattoirs studied with minute care how to provide an ample supply of water, and even in those days, when the necessity of public sewers and domestic drainage was not appreciated, still it was thought indispensable to supply the slaughter-houses with sewers. Likewise it was early felt that the ground should be protected from pollution and therefore cement and very thick pavement or flagstones were laid down wherever animals were to be slaughtered. All this was done under the direction of the Paris municipality from 1810 to 1818, the period during which the five first public abattoirs were built. This is a fact and a date that should be taken to heart by every town and borough councillor of Great Britain. Before commencing to build, the architects had studied all that was done in this respect in Italy and in Spain and this was before railways rendered travelling an easy matter and while wars were still devastating Europe. The opposition of the butchers marred their plans but nevertheless they set a great example. They created a new sanitary service, an institution which served as a model for all Europe during more than the first half of the nineteenth century.

In the course of time as the population increased and new quarters were inhabited the position of the five abattoirs became less suitable. New slaughter-houses were built and some of the old ones were abandoned. In 1860 there were ten public abattoirs in Paris. This was the time of the Hausmannisation of Paris, when so many improvement schemes were eagerly promoted. It was then decided to abolish all the abattoirs on the north side of the Seine and to replace them by one single abattoir at La Villette and close to the cattle market. Such concentration is now very generally recognised to have been a mistake. The distance that some butchers have to travel from their shops to the abattoirs is often more than four, and sometimes even six, miles. This increases the risk and difficulties of transporting the meat and has brought into existence intermediaries who have to be paid, and this increases the price of meat. Concentration of slaughtering in a public abattoir is good and necessary, but there is a limit, and one abattoir is not sufficient for more than a million people. Paris has 2,741,063 inhabitants and by far the greater half live on the northern side of the Seine. La Villette abattoir is built close under the fortification to the extreme north-east of Paris. It is approached by the broad Route de Flandre and is hedged round by the fortifications, the canal de l'Ouroq, which contains very impure water, and the canal Saint-Denis. From the main entrance in the Route de Flandre the grounds widen out like a fan. There are 20 very similar pavilions. Along the length of the pavilions run streets, like the spokes of a fan or a wheel, and across the extremities run broad tree-planted avenues.

The crescent-shaped entrance off the Route de Flandre forms the handle part of the fan. Here is a vast yard with a clock tower in the centre. The first buildings on entering are the porter's lodge and the offices of the *octroi* where the town dues are paid on the meat as it leaves the slaughter-house to be delivered to the butcher. Then standing by themselves on each side of the clock tower are two large buildings with a rotunda in the centre. One is used as an auction and sale room for meat and the other contains various offices for the different administrative services. Here are the sanitary services and I have never seen a more miserable installation. In the dingy little office set aside for the veterinary surgeons there is but one



The Paris Abattoir at La Villette. The roofed court uniting two slaughter pavilions. Each double door is the entrance to a butcher's separate private compartment. Pigs on the moveable wooden partitions show where meat is hung over the filth and manure stagnating on the floor.

no decent chairs, no books, no laboratory, and no sign of comfort or dignity. It is extraordinary that such an important service should be so badly housed. Such treatment is altogether unworthy of a town like Paris. The municipality should insist that its functionaries and officers must be treated with proper respect by being supplied with suitable quarters in which to do their work. When Sir Edwin Cornwall and the members of the London County Council went to La Villette they were received in an auction room and under a domed and lofty roof. They never saw the dark, dirty, barely furnished, and cheerless little office where the veterinary surgeons and meat inspectors do their clerical work. The visitors did see one of the slaughtering pavilions but it had been cleaned and duly prepared for inspection.

To the non-technical observer these pavilions when empty and clean are likely to produce a favourable impression. The roofed middle court has a Crystal Palace-like appearance. The visitor notes the presence of plenty of light and air. He sees that each butcher has his own private compartment, with a big double door and a little loft above to use as a storage room. It requires practical knowledge of the work to realise that inside these separate compartments there are less light, less fresh air, and none of the modern mechanical contrivances which not only facilitate the lifting and transport of carcasses but help to keep the meat free from contact with dirt. A few wooden rafters across the ceiling, an old-fashioned pulley and rope, that is all that exists to lift the heavy carcasses of horned cattle. There are no less than 216 of these private compartments in which animals are killed at La Villette, and naturally it is impossible for the meat inspectors to go in and out and watch efficaciously all these different shambles. As a result extraordinary disorder prevails. The butchers throw open their doors and do a great deal of their work in the open court, thus showing that after all there is no such very urgent reason against a common slaughtering hall. But as this court belongs to all, and to no one in particular, there is no order kept. The butchers do just what they please; so the viscera are thrown down on the ground and the stomachs or intestines are opened and emptied. Blood, manure, half-digested food, and offal collect and form a disgusting coagulum, so thick and heavy that it can only partially drain away. In Germany a visitor can inspect a slaughter-house while wearing dancing shoes; but at La Villette it is necessary to wear great heavy wooden clogs. (See illustration.)

Luckily the pavement is carefully cemented throughout all these killing places, though there are some parts reserved for the treatment of by-products where this is not done. Undoubtedly the viscera should be removed and the carcasses should not be cut up in the immediate presence of swamps of offal and manure. The necessity of cleanliness does not seem to have impressed the butchers of La Villette. There are ample light and air in the roofed courts where they do a large part of their work, but the filth on the pavement is sometimes ankle deep. So long, however, as their wooden clogs are sound they do not care. The pavement is laid with a gutter in the centre leading to the sewer. The structure is not bad, but the practice, the absence of method, is most reprehensible. Also it is absolutely wrong that meat should hang, if even for only a short time, in close proximity to so much filth. The accompanying illustration shows wooden frames with large pegs on which the carcasses of sheep or quarters of beef can be hung immediately above the dung, blood, and offal that stagnate on the pavement.

(To be continued.)

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

An Institute for Deaf-Mutes.

THERE are in Birmingham about 700 deaf-mutes, the majority of whom belong to the Birmingham and Midland Adult Deaf and Dumb Association, and although, as a rule, scarcely more than a fourth of the whole number can attend any given social meeting, still the accommodation possessed by the association is quite inadequate. This being the case, an attempt is shortly to be made to secure funds for the purpose of acquiring a central institute of sufficient size. It is estimated that about £5000 will be required. The scheme

should meet with success, as the people for whose benefit it is intended are for the most part thrifty, energetic, and deserving, but their affliction prevents them obtaining high wages. They are therefore thoroughly deserving of help, and the help may be given the more freely to these people inasmuch as there does not seem to be any marked tendency towards the transmission of the affliction from parents to children, consequently benevolence in this direction will not help to perpetuate degeneracy.

Scarlet Fever and Diphtheria.

In spite of a slight recrudescence during the past week we seem now distinctly to have passed the summits of the mild epidemics of scarlet fever and diphtheria which have simultaneously held sway in the city. Both epidemics commenced in September. On the 29th of that month there were 271 scarlet fever and 49 diphtheria patients in the hospital. By the middle of November the number of the former had risen to 382 and of the latter to 103, and on Saturday last the scarlet fever patients had been reduced to 318 and the diphtheria patients to 101. No doubt fluctuations may yet occur but it is scarcely probable that there will be any steady increase during the next few months. Luckily both epidemics have been very mild and the deaths extremely few. It is to be hoped that the after-effects will be few but that we shall never know, for it is not possible at present to obtain trustworthy statistics of the sequelæ.

"Seasonable" Weather and the Death-rate.

The after-effects of the severe weather at Christmas have shown themselves, and our death-rate rose first to 18.3 and then, during the past week, to 22.0 per 1000. The increase is due almost entirely to deaths from respiratory diseases which rose from 39 to 61. It is doubtful if a green Christmas time, in spite of the traditional fat churchyard associated with it, would produce so striking an increase in the death-rate, and many of us who are past the enjoyments of snow and frost will hope that it may be long before such another "seasonable" Christmas is recorded, for discomfort and death are its handmaids.

Christmas and New Year in the Hospitals.

The Christmas and New Year festivities are now completely over. The former were enjoyed in so-called seasonable and the latter in unseasonable, but more comfortable, weather. Whether the weather had anything to do with it or not there was a snap and go about the Christmas merry-making which was more or less lacking at the New Year. Our hospital staffs give much thought and work to make everything look and go well and as a result all the hospital wards were cheerful and some were quite artistically decorated. The visit of Father Christmas, who is still an institution in some hospitals, and the distribution of his gifts, proved, as usual, sources of great delight, especially to the children.

JAN 8th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Physical Degeneration: Liverpool's Problem.

RECENT disclosures would warrant the conclusion that the strength and virility of the class which has supplied the bone and sinew in the past are decaying because many of its children are emaciated and stunted in growth owing to a deficiency of food. The grave importance of the situation has been recognised by the legislature in the recent Act of Parliament passed for the feeding of underfed children. The paper read on Jan. 5th before the North of England educational conference at Bradford by Mr. A. S. Arkle of Liverpool on the subject of physical degeneration is deeply interesting, and showed the need of a substantial application of the benefits of the measure. At the time of the sittings of the Committee on Physical Deterioration Mr. Arkle, at the request of the Liverpool education committee, carried out a series of investigations in three typical council schools in Liverpool, "rightly judging that true knowledge of any existing evil is the first essential step towards remedying it." His observations extended over a period of 12 months. He minutely examined all the children in these three schools, taking their height, weight, chest measurement and expansion, condition of eyes, nose, and throat, and noting their nutrition, intelligence, and clothing. For comparative purposes he also examined all the boys in

the principal secondary schools in Liverpool and Birkenhead. The conclusions arrived at as a result of these investigations were as follows:—

(c) That the difference of physique between the children in the secondary schools and the poorer council schools has reached an alarming proportion; (b) that this deterioration appears to grow greater as life progresses; (c) that, medically, there is nothing to account for the deterioration; and (d) that the industrial school figures show that by care and attention this deterioration can be stopped and to some extent, at any rate, the leeway made good.

The total number of children whom Mr. Arkle examined was 2477—from secondary schools, 366; from elementary schools, 2111. The results obtained were nearly identical in all the secondary schools and to make the average yield a fair test, when compared with other schools, a large group of boys in this class had to be taken. In the matter of height he found the average, at seven years of age, of boys in the secondary schools, to be 3 feet 11·8 inches, as compared with 3 feet 9·3 inches in the best class of elementary schools; whereas in the worst class of the latter the average height was only 3 feet 8 inches. At 11 years of age the average height of boys in the secondary schools was 4 feet 7·5 inches, as compared with 4 feet 1·7 inches in the lowest class of elementary schools. At 14 years of age 5 feet 1·75 inches was the average height in the secondary schools, as compared with 4 feet 7·25 inches in the lowest class of elementary schools. The weights of the boys in the different classes of schools were equally remarkable, showing at 14 years of age an average difference in weight of 1 stone 9·25 pounds in favour of the boy at the secondary school. Mr. Arkle concludes his paper by saying that the results of his investigations (a portion of which are condensed here) force him to the conclusion that degeneration has reached an alarming stage. He asks, Of what use is it to educate children whose minds and bodies are absolutely unable to benefit thereby?

Sir Robert William Boyce, F.R.S.

Professor Sir Robert W. Boyce, the dean of the School of Tropical Medicine, who has been in ill-health for some months, was a passenger on board the R.M.S. *Karina* which sailed from the landing stage on Jan. 5th for Madeira. Sir Robert Boyce was accompanied by Dr. G. Boyce and a nurse. A large number of friends arrived at the landing stage to wish him *bon voyage* and a general hope was expressed that he would return to Liverpool and to his duties at the Thompson Yates laboratories restored to his usual health. Sir R. Boyce, though still feeble, appeared to his friends to be gaining in strength.

Liverpool Infirmary for Children.

Her Royal Highness the Duchess of Albany will open the new infirmary for children on Thursday, Jan. 10th. Her Royal Highness, who will be the guest of the Earl and Countess of Derby, will be received at the new infirmary by the Lord Mayor and Lady Mayoress, the president of the infirmary, the chairman of the building committee, the honorary treasurer and honorary secretary, and the lady members holding official positions. The Lord Mayor will preside at the opening ceremony and the president of the hospital will ask Her Royal Highness to declare the building open and to receive presents from children. A vote of thanks to Her Royal Highness will be moved by the Earl of Derby and seconded by the Lord Bishop of the diocese.

The Cost of a Snowfall in Liverpool.

The health committee expressed much pleasure at its meeting on Jan. 3rd on the expedition with which the snow had been cleared from the streets after the fall on Dec. 30th. The cost was £2500, of which £1075 were paid to unemployed labourers at the rate of 4s. per man a day. In the neighbouring borough of Bootle the call for labour to clear away the snow was not responded to, causing much delay in removal and inconvenience to traffic generally.

Jan. 5th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Pauperism in Wales.

It appears from the recently issued return of the Local Government Board that the number of paupers relieved on July 1st, 1906 in the whole of England and Wales, including London, was equal to 25 per 1000 of the estimated population and to 28·5 per 1000 in London alone. Judged by the same standard there was considerably less pauperism in the

southern counties of Wales than in the northern. In the six southern counties the proportion of pauperism to population varied from 16·9 per 1000 in Radnor to 26·3 per 1000 in Cardigan and in the six northern counties from 23·3 per 1000 in Denbigh to 33·4 per 1000 in Anglesey. The proportion in this last county is the highest in the whole of England and Wales, the next being Merioneth with 29·4 per 1000. It is very doubtful whether these figures really indicate a greater amount of poverty in the northern part of the principality or merely point to greater laxity in the administration of the Poor-laws.

Inferior Milk in Cardiff.

A dairyman was summoned in Cardiff on Jan. 3rd for selling milk adulterated with boric acid to the committee of the Cardiff Infirmary. The defendant is under contract with the committee of that institution for the supply of milk. Evidence showed that the milk had 45 per cent. of added water, was deficient in fat to the extent of 10 per cent., and was adulterated by the addition of 0·046 per cent. of boric acid. The defendant was fined £10 and costs, the magistrates accepting the theory that the adulteration was accidental.

Pollution of the Avon at Bath.

At the last meeting of the Somerset county council it was decided to take proceedings against the corporation of Bath under the Rivers Pollution Prevention Act, 1876. The corporation does not admit that pollution of the river Avon takes place within the city boundaries. A scheme for providing sewage outfall works was considered some years ago, but the very great cost of the undertaking was apparently prohibitive and less costly proposals have not been sufficiently comprehensive.

Diphtheria in Chipping Sodbury.

In the autumn of last year a more or less circumscribed outbreak of diphtheria occurred in the rural district of Chipping Sodbury in Gloucestershire. There were altogether 35 cases, nearly half of which were in the parish of Frenchay. In a report which Dr. Francis T. Bond has presented to the district council he says that in treating such an outbreak the general impression seems to be that the proper course is to send the patients to the isolation hospital for treatment. Although cases of an exceptional character may with advantage be treated in an isolation hospital, he deprecates the crowding of the wards with every case that occurs, a course which would neither be in the interests of the patients nor economical for the ratepayers. There is abundant evidence, he says, that if antitoxin is administered promptly and in sufficient doses the risk of a fatal termination to a case is reduced to a minimum. In his opinion, when a medical practitioner considered that he had sufficient evidence to notify a case to the sanitary authority, it was the duty of such practitioner at once to administer antitoxin and thus to render it unnecessary to send the patient to the hospital.

Bridgwater Rural District Isolation Hospital.

Sanitary authorities have from time to time resorted to various expedients in order to lessen the obligations cast upon them by the Public Health Acts, but surely none is more ingenious than that which has been proposed to the Bridgwater (Somerset) rural district council. A committee of the council was appointed to consider the question of providing an isolation hospital and the council has now adopted the recommendation of the committee that every year a sub-committee should be appointed to assist the inspector of nuisances in seeking for a suitable building in which to accommodate infectious diseases whenever such is required.

The St. Columb Board of Guardians and Vaccination.

At a meeting of the St. Columb (Cornwall) board of guardians held on Jan. 3rd the vaccination committee reported that after examining the books of the public vaccinators it was of opinion that the charges brought against a public vaccinator by the Local Government Board inspector could not be substantiated, as it could find no evidence of postponement certificates being granted for trivial reasons, and in all cases of postponement he afterwards, with the exception of his own child, had vaccinated every child. The guardians unanimously adopted the report, and decided to send a copy of the correspondence with the Local Government Board to Mr. McArthur, M.P. The matter has been already reported in THE LANCET, and it will be remembered that the Local Government Board refused to sanction the appointment of the public vaccinator in question, whilst the guardians would not rescind his appointment by them.

Jan. 5th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Year's Work of the Edinburgh Royal Infirmary.

A MEETING of the general court of contributors of the Edinburgh Royal Infirmary was held on Jan. 7th. The annual report shows that the number of patients treated in the wards was 11,216; of these, 820 died, while of this number, 192 died within 48 hours of admission. In the out-patient department 37,235 patients have been treated. The total ordinary income for the year was £33,695, being slightly less than the sum received in the previous year. Hospital tickets showed an increase of £226. The ordinary expenditure amounted to £52,116, being £1972 more than in the previous year. The increased expenditure is accounted for by an increase of 11 in the number of occupied beds, the increased cost of the new surgical out-patient department, the introduction of massage treatment, the perfecting of the telephonic system, the increasing cost of the electrical department, and the increased demand for modern appliances both in the medical and surgical departments. The report mentions a number of improvements and additions made to various special departments which have added to their efficiency. The expenditure, while it has increased, shows that great reductions and economies have been effected within the past few years, notably in fuel. Under the head of wines, spirits, gluten, bread, and meat extracts there has been a reduction from £736 to £299; in the detail of beeswax and turpentine for polishing the floors there has been a saving of £1501. In referring to the annual report in the past few years reference has been made to the valuable work which Colonel Warburton, the present superintendent, has done in effecting great economies in the working of the infirmary without in any way reducing its efficiency and there is no doubt that his administrative ability is still effective. The legacies and donations of £100 and upwards amounted to £22,670. The extraordinary expenditure amounted to £14,352, including sums for drainage, reconstruction of operating theatres, new surgical out-patient theatre and reconstruction of the department, electric lighting improvements, &c. The new surgical out-patient department, which has made a charge of about £700 a year upon the funds, is regarded as justifying the initial outlay and the annual expense. The reconstruction of the incidental delirium department and of the medical out-patient department has been delayed owing to the urgency of other works requiring to be completed. The report ends with an appeal for more funds and the expression of the hope that the managers will not be compelled to encroach upon their reserve funds.

Complimentary Dinner to Dr. Norman Walker.

The Fifeshire Medical Association, of which society Dr. Norman Walker was recently president, entertained him at dinner in Kirkcaldy on Dec. 28th, 1906, on the occasion of his election as Direct Representative for Scotland on the General Medical Council. Mr. R. Balfour Graham of Leven, the present president of the society, proposed the toast of the evening, which was suitably replied to by Dr. Walker.

The Scottish Poor-Law Medical Officers' Association.

The report of this association has just been published. It shows that the action of the association in behalf of its members in respect of the autocratic decisions of parish councils has been most valuable, and has also received considerable endorsement from the Local Government Board. An increasing number of Scottish Members of Parliament are manifesting interest in the present highly unsatisfactory position of the Poor-law medical officers of Scotland.

Reconstruction of Glasgow Royal Infirmary.

The work of reconstructing the Glasgow Royal Infirmary on the plans sanctioned by the directors has made considerable progress during the past year and some idea can now be had of the form which the institution will take when finally completed. The new structure, speaking generally, consists of three blocks. To meet the necessity of carrying on the infirmary with unimpaired efficiency while the new buildings are in process of erection it was resolved to proceed first with the northern block, which will occupy a site on what was formerly vacant ground lying between the present northern surgical block and St. Mungo's College. The first turf was cut on May 25th, 1905, and already

the building has been carried to the height of the first of the five storeys of which it will consist. To make way for the new gateway block which will be erected a little to the north of the present entry to the wards, the old gateway block has been demolished, and the work of excavation and laying the foundations for the northern portion will be begun very shortly. In this block there will be a waiting-hall for patients and their friends, examination rooms, and two small operating theatres. The other half of the block, which cannot be undertaken in the meantime, will contain the casualty wards. The entire scheme when finished will give accommodation for 680, as compared with 584 patients in the present institution. In the northern block, with the erection of which a beginning has been made, there will be accommodation for 250 patients, and so soon as it is finished it will be occupied, the patients being transferred from one of the sections of the old building, and further work of reconstruction will be commenced. No decision has yet been arrived at as to which of the remaining blocks will be built first. The directors have, however, in contemplation an immediate extension of the nurses' home to be erected to the eastward of the present building. A new power-house and laundry are also to be erected in connexion with the scheme of reconstruction.

Appointments to Glasgow Royal Infirmary.

At a meeting of the managers of Glasgow Royal Infirmary held last week the following appointments were made: Visiting physician, J. B. McKenzie Anderson, M.B., O.M. Glasg.; anaesthetist, J. King Patrik, M.B., Ch.B. Glasg.; and extra assistant bacteriologist, Miss Lizzie Fraser, M.D. Glasg.

Glasgow Corporation and Sweated Labour.

A special committee has been appointed by the town council of Glasgow to consider the question of "sweated labour" among women and children as it exists in the city of Glasgow. The scope of the inquiry is to be as follows—viz., to hear evidence from the medical officer of health, the sanitary inspector, the Scottish Council for Women's Trades, the Glasgow Trades' Council, the Scottish Christian Social Union, and other bodies interested in labour questions as to their knowledge of sweating among women and children; employers and employees as to the conditions, hours, and wages of women and children in regard to work performed for factories and workshops by inside and outside workers; and workers who do work at home solely on their own account.

Jan. 8th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Prevention of Tuberculosis in Dublin.

A GREAT deal has been spoken and written about this important matter but not very much has been really done. Sir Charles A. Cameron, medical officer of health of the city, recently addressed a letter to the press from the municipal buildings in connexion with the work recently performed by the disinfecting department as regards pulmonary consumption. The letter shows that the deaths caused by pulmonary consumption in 1906 numbered 937 and were fewer by 30 than in 1905. Of these deaths 182 occurred in the Hospice for the Sick and Dying, the Incurables Hospital, and lunatic asylums; 66 in the general hospitals; 140 in the North Dublin union; and 128 in the South Dublin union, making a total of 516 in public institutions, or more than half the total deaths from consumption. Sir Charles Cameron says that the Registrar-General sent every week a list of the deaths from consumption which enabled disinfection of the rooms occupied by the deceased to be carried out. 258 dwellings were disinfected after deaths from consumption. Only 12 of these deaths were notified by medical men, all of whom were dispensary physicians. 24 dwellings were disinfected on notification from physicians that the patients had been removed from them, and 30 dwellings were disinfected on notification from the union authorities that consumptives had been admitted to the union from these dwellings. In 23 instances incorrect addresses of the deceased were given. Of the 421 deaths that occurred outside public institutions the premises occupied by the deceased were disinfected in 312 instances.

The letter is, and was, of course, intended to be, a forcible argument in favour of a system of compulsory notification of pulmonary tuberculosis.

Royal College of Surgeons in Ireland.

The annual college dinner will take place on Jan. 26th. His Excellency the Lord Lieutenant has graciously signified his intention to be present. A meeting of the College will be held before the dinner for the purpose of conferring the Honorary Fellowship on Mr. Priestley Smith, professor of ophthalmology in the University of Birmingham.

The Health of Belfast.

In moving the adoption of the minutes of the public health committee at the meeting of the Belfast corporation on Jan. 1st the chairman (Dr. J. King Kerr) questioned the estimates of the population of Belfast made by the Registrar-General and stated that in his opinion "the death-rate for the last two years has been over-estimated as contrasted with the under-estimate prior to 1901." He thought that the facts showed that the statistics were absolutely untrustworthy referring to the last 12 years, with the exception of one year, adding that "Belfast had one of the lowest death-rates on record." It would have been wiser to allow the statistics of the year that has just closed to be put before the public by the recognised official authority, the Registrar-General, because the means employed hitherto by the health authorities of Belfast to collect any statistical information, apart from that supplied to them by the Registrar-General, have not been remarkably wise. To say that "Belfast had one of the lowest death-rates on record" when the medical officer of health, at the same meeting at which this statement was made, reported the death-rate as being 18.1 per 1000 was over-bold. A point in favour of the existing health administration of the city was made "that typhoid as an endemic disease was gradually dying out in our midst," but the official methods of trying to combat the late milk typhoid epidemic were not quoted. When attention was drawn by one of the council to the custom of milk-carts collecting refuse before returning to the dairies (any afternoon one can see carts of manure going out of Belfast with small empty butter-milk wooden vessels on them) the reply given was that the public health committee had no power to stop the revolting procedure. Possibly; but powers should have been acquired to prevent such a nuisance the moment it came to the official ears. The public health committee will have plenty of matters to explain at the coming commission on the health of the city.

A Nurse's Decoction.

At an inquest held in Belfast on Jan. 4th, in reference to the death of an infant, five days old, the nurse who had been in attendance said that she gave a quarter of a teaspoonful of the following mixture to the child owing to the infant having pains: a pennyworth of magnesia, a pennyworth of sweet manna, a pennyworth of sugar, a pennyworth of tincture of rhubarb, a pennyworth of essence of aniseed, and a half-pennyworth of laudanum. This she boiled for an hour and then gave the child a quarter of a teaspoonful. The jury found that the child had died from opium poisoning due to the nurse, through ignorance, administering an overdose of laudanum for the purpose of relieving pains.

Jan. 22.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Early Diagnosis of Tuberculous Disease.

At a meeting of the Academy of Medicine held on Dec. 18th, 1906, M. Barot read a paper in which he endeavoured to show that tuberculous disease might be diagnosed in an early stage of development, which he called *germination ganglionnaire* before there was any visceral infection. The paper was based upon 250 cases observed by M. Barot himself and the diagnostic signs on which he relied were four in number, deriving their value from simultaneous occurrence. They were loss of weight, scars in the morning, a painful sensation when pressure was made on the vertebra and the sternum, and an abnormal rough resonance of the lower register of the voice over the vertebra; there were, moreover, a number of auxiliary signs which served to confirm the diagnosis. M. Barot said that this early stage of tuberculosis was of very variable duration

and that during this period judicious dieting and treatment had an excellent effect. The investigation and recognition of this developmental stage were of great importance for the prevention of tuberculosis.

Old Age Pensions.

The fifth commission of the municipal council of Paris has fixed at 30 francs the amount of the monthly sum payable from the commencement of 1907 to aged persons who benefit by the Pensions Act (*la loi sur l'assistance obligatoire*). This decision remains to be confirmed by the council which at the same time will have to provide the requisite funds. The general council of the department of the Seine will also have to consider the whole question in connexion with the confirmation of recommendations of a similar nature made by the communes of the department.

Pseudo-Hermaphroditism due to Hypospadias.

At a meeting of the Surgical Society held on Dec. 19th, 1906, M. Porzi communicated an observation made by Dr. Barnsby on a male child who had up to the age of 12 years been regarded as a girl. The child's fondness for the society of girls and various traits of character led the parents to have him thoroughly examined by Dr. Barnsby who found that the case was one of hypospadias and that there was a testicle in one of the supposed labia majora. To remedy this abnormality Dr. Barnsby performed an operation in several stages. He first straightened the penis by dividing a band, then formed the distal extremity of a penile urethra, and joined it to the existing urethral orifice by flaps which also closed the hypospadias aperture. The result was excellent.

Bequest to the Pasteur Institute.

M. Audrao, a recently deceased landowner in the department of the Eastern Pyrenees, has bequeathed to the Pasteur Institute his whole fortune, which is estimated at more than 1,000,000 francs. The notary of Luc, the town in which the testator resided, has come to Paris to see Dr. Roux and to inform him of the facts. Some time must elapse before the Pasteur Institute will know whether it is the sole heir, as the will conveying the bequest is of old date and there is a possibility that the deceased may have made a later one which still remains to be found.

Jan. 7th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Sleeping Sickness.

Professor Robert Koch, who some time ago made his third visit to Africa, has sent a report of his investigations on the subject of sleeping sickness to the Imperial Health Office and this report has been published in the *Deutsche Medizinische Wochenschrift*. He first proceeded to the district of Muansa in German East Africa, but found that, although *Glossina palpalis*, the insect which conveys the parasite, was prevalent, there were no cases of the disease at that place. Professor Koch was therefore very gratified when the British commissioner of Uganda, Mr. Hesketh-Bell, invited him to stay in one of the Sese islands and to make use of the laboratory at Entebbe. He was told by the missionaries that the epidemic had been so disastrous for the inhabitants of the island that their numbers had fallen from 30,000 to 12,000 within four years. There were, however, very few patients in the hospital, because the natives did not bring sick persons for treatment, believing that medical science was unable to give relief. Professor Koch first examined the blood of the patients, but in 180 cases the trypanosoma was discovered only three times. As this result was very unsatisfactory and in contradiction with the clinical symptoms the next step was to examine the lymphatic glands of the neck, which are always swollen in this disease. According to the statements of the English medical men, Dr. Gray and Dr. Graef, the trypanosoma was discovered in 160 cases out of 163. As from 60 to 70 per cent. of the population have swollen glands and as of the remainder a great number have certainly contracted the disease, prophylactic measures were of no use but the desideratum was to destroy the trypanosoma within the patient's body. An arsenical compound known as atoxyl (meta-arsenic anilide) was especially tried. Subcutaneous injections of 0.5 gramme made on two successive days did not produce any toxic effect and puncture of

the glands showed that the trypanosomata had disappeared. In some cases the parasites reappeared after about ten days but these were exceptional. In serious attacks the treatment had to be repeated after ten days and in slight cases after 15 or 20 days. No undesirable symptoms were observed even when the injections were made for the third or fourth time. Puncture of the glands showed that trypanosomata were still present six hours after the injection but that they totally disappeared after eight hours; at the same time the general state of the patients improved. The news of the success of the treatment soon became widely spread by the patients themselves among the population and crowds of natives therefore came from the islands and from the mainland in the hope of obtaining benefit. On some days about 800 persons presented themselves with this object. Owing to the relatively small available quantity of the remedy only a minority of the patients—namely, 359, of whom 80 were severe cases, were selected. In his last report, dated Nov. 5th, 1906, Professor Koch states that he has become persuaded that atoxyl is as certain a remedy against sleeping sickness as quinine is against malaria. He had meanwhile employed the treatment for 800 severe cases and the patients improved so much that it might be stopped after two or three months. The patients must then be kept under observation for the same period in order to ascertain whether relapses occur or not.

Cancer of the Appendix.

At a recent meeting of the Berlin Medical Society Dr. Theodor Landau spoke on the subject of primary cancer of the appendix. He said that up to the present time only 58 cases of this condition have been described in medical literature and that in the majority of cases it had been found accidentally. In about 60 per cent. of the cases the growth was situated at the apex of the appendix and the surrounding tissue showed an inflammatory reaction. In two instances the growth had perforated through the abdominal walls, forming a fistula, but a perforation into the abdominal cavity had never occurred, neither were metastases frequent. The clinical symptoms were those of appendicitis, except that the pain, instead of being dull as in appendicitis, was cutting and lancinating, and was especially severe at night. Relapses very seldom happened after the removal of the appendix. The cases were, as a rule, believed to be appendicitis and it was only in the course of the operation and afterwards by microscopical examination that the nature of the growth was ascertained. In a case where he had performed a laparotomy for myoma he removed the appendix because it was found to be swollen. Subsequent microscopical examination proved that it was affected with cancer. In every laparotomy for whatever cause the appendix should be the object of careful examination.

Honour to Professor von Bergmann.

The seventieth anniversary of the birthday of Professor von Bergmann was made the occasion of various celebrations by the medical profession of Berlin and elsewhere, showing the esteem in which he is held by his professional brethren and his numerous patients. On Dec. 18th, 1906, a banquet took place at which were present Professor von Bergmann himself, some members of his family, his present and former assistants, many civilian medical men, and officers of the Army Medical Corps. Professor Heubner, the dean of the Berlin Medical Faculty, proposed the health of Professor von Bergmann, and Professor von Augerer of Munich proposed the health of his family. Professor von Bergmann, in his reply, said that he was a young man far from having a special inclination to the study of medicine; to the great amusement of the assembly he told them that his original intention was to become a clergyman but as by a decree of the Emperor Nicolas (Professor von Bergmann is a Russian by birth) the total number of ecclesiastical students could not exceed certain limits, he was refused matriculation in the faculty of theology and therefore became a medical student. He declined to be compared with geniuses like the late Professor Billroth or Lord Lister but said that he was always favoured by circumstances, as in the choice of his career. Professor von Bergmann, who is president of the Berlin Medical Society, was made honorary president on the occasion of his birthday. It is reported that he will soon retire from his post and that Professor von Eiselsberg of Vienna will not improbably become his successor.

Jan. 7th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Serotherapy.

THE new year opens with an important adjunct to Italy's resources—the new Sero-Therapeutic Institute at Milan. The inaugural ceremony, which attracted a numerous audience of the profession and the lay public, was conducted by the Senator Luigi Mangiagalli of the "Istituto Lombardo di Scienze e Lettere," who, in a rapid and vivid sketch, recalled the first inception of the institute in 1894, its excellent work in spite of adverse vicissitudes, financial and other, and finally, its development into the enlarged and virtually new institute just entering, under happy auspices, on its beneficent career, curative, hygienic, and scientific. In the stately and fully equipped edifice in which it is now accommodated the staff of the institute may reasonably be expected to improve on its record, honourable as that record has been for its great and successful experiments in the immunisation of oxen with the bovo-vaccine of Behring and also for the educative function which it has discharged in the initiation and equipment of similar institutes throughout Italy which have, in turn, become centres of post-graduate study. Professor Belfanti supplemented the Senator Mangiagalli's discourse with a history of the scientific discoveries to which the institute owed its origin, dwelling on the importance of the "Infinitely little" in biology and medicine and citing the names of Davaine, of Pasteur, and of the less known but hardly less epoch-marking Cornalia whose discovery of the organic nature of the active cause of the silkworm disease paved the way for other workers in the same field. Coming to the productive output of the institute, he showed that it supplied 20,000 *bocette* (tubes) of antidiphtheritic serum and, saved 6600 infantile patients a year, to say nothing of other preparations directed against other maladies. Besides curative serums it provided protective or prophylactic serums, such, for example, as the "serum anticarbunculosum" (a preparation which previously had to be imported into Italy from France), with the result that the home-made Italian serum has been effectively applied to 800,000 cattle. In small-pox the work of the institute had been not less signal, destined as it now is to become the chief source of supply of the "vaccino Jenneriano" throughout Italy. In every department indeed of sero-therapy the institute promises rapid and extensive improvement in the beneficent work which it has already achieved and in its rehabilitated and completely equipped development constitutes—to the honour of Milan—a noble "New Year's gift" to the nation.

Arturo Calvo.

At the early age of 29 years this accomplished physician has fallen a victim to professional duty in the Florentine Clinique, of which he was an able and highly esteemed member. His university career was a distinguished one and after having won the coveted "Tacchini prize" he proceeded for post-graduate "perfezionamento" to Germany and thence to Paris, making, during his two years' sojourn special studies in the physiology and pathology of the stomach. His conclusions have been embodied in a publication already popular in the profession, though but the prelude to further work in the same important field. Having contracted typhoid fever at his post he finally succumbed to the disease in spite of the skill and care of his colleagues who, I understand, are preparing a permanent memorial of him in the clinique which he served so well.

The Darwin Centenary.

Though still about two years off, the hundredth anniversary of the birth of the author of the "Origin of Species" (Feb. 12th, 1809) has already evoked the commemorative enthusiasm of his admirers—and their name is legion—in all the Italian seats of learning. The recent death of Brancati whose work on the "Bankruptcy of Science" impressed the continent so vividly, followed by the tributes to his able if ineffectual advocacy of a declining cause, has prompted Dr. Mario Cermenati, professor of the history of the natural sciences in the University of Rome, to a stirring vindication of the great exponent of evolution. Highly successful before its academic audience, it is now, in its printed form, being widely read by the general public as the prelude to a tribute, organised on a national scale, to the memory of the great

English philosopher. It is proposed in some quarters to celebrate coincidentally with that of Darwin's birth the centenary of the publication of Lamarck's "Philosophie Zoologique," by many considered as an anticipation, however indecisive, of the "Origin of Species." This, however, by the way. Italy is sure to have the support, in continental Europe, of other nationalities besides those of Latin lineage with whom the doctrine of evolution has had from the first a peculiarly hospitable reception.

Jan. 7th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Overcrowding and Infantile Mortality.

IN a paper read at a recent meeting of the Medical Society Dr. Pach called the attention of the medical profession and of the Government to the importance of prophylactic measures especially in the protection of children from the evils of overcrowding. He selected Budapest as a field for his researches because it was a large city undergoing rapid and continuous increase and the subjects which he took for investigation were, on the one hand, the influence of modern conditions of life upon the development of diseases and the death-rate, and, on the other hand, the general hygiene of modern dwellings and occupations. He found that from the year 1874 until 1900 the mortality of infants and children up to the age of five years had steadily increased from 26·7 to 29·9 per cent., and if the figures for the different districts of the city were tabulated separately a very close relation between overcrowding of dwelling houses and the mortality of children was brought out. For instance, in the factory districts of the city from seven to 11 persons occupied a lodging which consisted of from one to three rooms, whereas in the other districts of the city from two to five persons occupied a lodging which consisted of from two to five rooms. The factory districts showed an annual general mortality exceeding 25 per 1000 and an infantile mortality exceeding 120 per 1000, while for the city the general mortality was 21 per 1000 and the infantile mortality was 95 per 1000. When station in life was taken as a basis of computation it was found that against 285 children of the well-to-do classes 4780 children of the poorer class died in the year 1904 and of these 270 succumbed to pulmonary tuberculosis. In the same year 2920 persons died from pulmonary tuberculosis, of whom 85 per cent. were poor and only eight (i.e., 0·27 per cent.) were well-to-do. More than 48 per cent. of these deaths occurred in rooms on the ground floor or below the level of the street. This showed that the primary requisite for the prevention of tuberculosis was not the erection of sanatoriums and hospitals but the better housing of the poor. The motto of the reformer ought to be "houses for the healthy" rather than "hospitals for the sick." In the interest of the public health there was an urgent necessity for the demolition of insanitary buildings and slums, the prevention of overcrowding, the erection of working-class dwellings, the improvement of the building regulations, the prohibition of the modern system of overbuilding on insufficient areas, the enactment of regulations fixing the maximum number of occupants for each house or part of a house, and the prohibition of subletting. What was wanted was, in fact, more light and more air.

A Dermoid Tumour of the Scrotum

Dr. Porges recently had an opportunity of showing a very rare example of dermoid tumour which on account of its position had several times been mistaken for some other disease. The patient was 22 years of age. Inspection showed that the scrotum contained three swellings, the upper two of which were easily recognised as the slightly enlarged testes, whilst the lower tumour was quite isolated. When the reflex of the testes was elicited the lower tumour did not move, thus proving that its origin was not situated within the testicles or their sheaths; the diagnosis of hydrocele or spermatocele could therefore be excluded. The size of the tumour was about equal to that of a man's fist; it reached to the perineum; the integuments were normal, easily folding. The scrotal raphe was situated exactly in the middle of the soft elastic tumour. A puncture showed the presence of an oily fluid. A diagnosis of dermoid cyst of the scrotum was made and was afterwards proved by operation to be correct.

The Consumption of Tobacco in Austria.

Statistics compiled by the Government departments show that the consumption of tobacco in Austria is slowly decreasing. Cigarettes are on the whole more favoured than formerly and have to some extent displaced cigars and pipes. Neurologists find in this an explanation of the increase of neurasthenia amongst both young men and men of advanced age, as the sale of cigarettes and cigarette tobacco has increased by 15 per cent. in one year. As regards the quality of the tobacco, the better sorts are in most request, showing that the nation, or at least the smoking part of the nation, is comparatively affluent. The total amount of 36,945 tons of tobacco works out at a yearly consumption of 1·33 kilogrammes (equal to three pounds) per head of the population. Austria stands in this respect fifth on the list of tobacco smoking countries. Experiments made with a view to reduce the percentage of nicotine contained in tobacco have resulted in the production of two types of cigarettes called "nicotine-free" which, however, in reality are only "nicotine-poor." By treating the tobacco leaves with a 1 per cent. solution of caustic potash and afterwards washing them well about 50 or 60 per cent. of the nicotine is extracted so that the alarming symptoms of nicotine poisoning are less likely to arise. When, however, 30 or 40 of these new cigarettes are smoked in a day there is no difficulty in recognising that they are not quite free from the poison.

Paying Hospitals in Vienna.

The grievances of the medical profession, which are already ample and well founded, are to be increased by a new scheme of the Government which is contemplating the erection of paying wards or rather the addition of such wards to the existing accommodation in the general hospitals. These new wards are to be available for such classes of the population as cannot afford to pay for beds in expensive private sanatoriums but are unsuitable cases for the public hospitals under present conditions. It is expected that for a payment of 10 kronen (about 8s.) a day patients may obtain in these wards a room with one bed and for 6 kronen (5s.) a day accommodation in a room with from two to four beds. But the directors of the hospital wards are to be the visiting and consulting physicians, whilst the patients will be under the immediate care of the resident hospital staff. This latter restriction, which practically excludes the general practitioner from continuing to treat his patient, is naturally condemned by the greatest part of the profession. In spite of the protests that have been made and in spite of the opinions expressed by various hospital physicians the new scheme is being hastened forward by the Government with a view to increase the funds of the general hospitals, which have become rather depleted.

Medical Lectures in English.

As the number of English-speaking medical men (mostly Americans) at the University of Vienna is upwards of 100 several professors and *privat-docenten* have decided to deliver a series of lectures in English, so as to enable the foreign medical men to take part in these courses if they find difficulty in understanding German. The fees for such courses amount to about £4 4s., or at the most to £8 8s., and the number of the students is as a rule restricted, especially in the classes of gynecology and surgery. There is at present no special English Association in Vienna but a branch of the American Medical Association has been established and conducts a number of courses which may be taken by any English-speaking medical man.

Jan 5th

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

Matters of Hygiene in Public Schools.

THE Ministry of Public Instruction has taken energetic measures to improve the hygienic and sanitary conditions of all the Turkish public schools in the metropolis, which up to now were in a very unsatisfactory state. It was found, for instance, that many of these schools were never heated in winter, the children thus being exposed to cold and frequently suffering bitter consequences of such reckless treatment. The sanitary inspectors and some of the medical men of their respective districts seem to have

the glands showed that the trypanosomata had disappeared. In some cases the parasites reappeared after about ten days but these were exceptional. In serious attacks the treatment had to be repeated after ten days and in slight cases after 15 or 20 days. No undesirable symptoms were observed even when the injections were made for the third or fourth time. Puncture of the glands showed that trypanosomata were still present six hours after the injection but that they totally disappeared after eight hours; at the same time the general state of the patients improved. The news of the success of the treatment soon became widely spread by the patients themselves among the population and crowds of natives therefore came from the islands and from the mainland in the hope of obtaining benefit. On some days about 800 persons presented themselves with this object. Owing to the relatively small available quantity of the remedy only a minority of the patients—namely, 359, of whom 80 were severe cases, were selected. In his last report, dated Nov. 5th, 1906, Professor Koch states that he has become persuaded that atoxyl is as certain a remedy against sleeping sickness as quinine is against malaria. He had meanwhile employed the treatment for 900 severe cases and the patients improved so much that it might be stopped after two or three months. The patients must then be kept under observation for the same period in order to ascertain whether relapses occur or not.

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fresh-water swamps or other territory suspected of breeding malarial or other mosquitoes, at the request of any local board of health. The local boards of health are to be informed of the mosquito-breeding places shown on the maps of salt marsh areas and notice given to the owners to abate the nuisances and if the owners fail to comply the boards of health are to act. In all investigations under the provisions for the survey of fresh-water swamps, or other suspected territory stated, the report to be made shall state what mosquitoes were found, whether they are local breeders or migrants from other points, and, in case of migrants, their probable source, whether the territory in question is dangerous as a nuisance because of mosquito breeding, and the character of the work necessary to abate such nuisance and abolish the breeding places. Boards of health must then proceed to abolish the breeding places under their general powers and when necessary the State may assist the local authorities.

The Appointment of School Physicians.

The State of Massachusetts has passed a law providing a rigid medical supervision of the health of its school children. The school committee of every city and town in the Commonwealth is required to appoint one or more school physicians and assign one to each public school of the city or town with proper facilities for the performance of their duties. The physician is required to maintain a careful inspection of the school children, the teachers, janitors, and school buildings. Whenever a child shows symptoms of small-pox, scarlet fever, measles, diphtheria, chicken-pox, tuberculosis, tonsillitis, whooping-cough, mumps, scabies, or trachoma he shall be sent home immediately and the board of health shall be notified. Every child in the public schools shall be separately and carefully examined and tested, at least once in each school year, to ascertain whether he is suffering from defective sight or hearing or from any other disability or defect tending to prevent his receiving the full benefit of his school work, or requiring a modification of the school work in order to prevent injury to the child, or to secure the best educational results.

International Sanitary Arrangements of the American Republics.

The Third International Conference of American Republics, held at Rio de Janeiro during the last summer, adopted the following recommendations relating to international sanitation:—1. The adoption of the agreement of the delegates to the Washington Conference of 1905 in regard to uniformity of quarantine regulations against cholera and yellow fever. 2. The adoption of measures to obtain the sanitation of cities, and especially of the ports, and to attain, as far as possible, to a better knowledge and a greater observance of hygienic and sanitary principles. 3. That all American nations attend the conference of 1937 to be held at the city of Mexico for the purpose of securing some form of international agreement on such sanitation, it being suggested that there should be a committee in each country devoted to securing information and transmitting it through a central bureau at Montevideo to the International Sanitary Bureau at Washington. The action of the Rio de Janeiro conference marks a great advance over preceding conferences which related only to quarantine. This extension of the work of the conference is probably largely due to the communication of the surgeon-general of our public health service which was prepared at the suggestion of the Secretary of State and by him presented to the conference. This communication was a very able document showing the immense importance of international cooperation in general sanitation.

Jan. 12.

THE DIET OF TO-DAY.

THE question of the most suitable diet for the individual in health has been made the subject of numerous investigations in recent years. As to whether what is termed a full diet, containing a comparatively large amount of albuminous food or a diet including a much smaller quantity of such flesh-forming substances is better adapted for the conservation of physical and mental energy, the question is one upon which the opinions of scientific men are still a good deal divided. A lecture dealing with certain features of the diet problem was delivered by Professor W. D. Halliburton at the Incorporated Institute of Hygiene on Wednesday afternoon, Jan. 9th. The address was designed to be of a popular character and we are certain that the views of Professor Halliburton on some important phases of a matter that more directly concerns popular audiences than almost any that can be imagined will be read with interest. Professor Halliburton was on the side of the full diet, expressing the now unpopular view that it is safer to eat too much than too little. The experiments of Professor Chittenden of Yale University, although of first-rank importance, should be regarded, he thought, as by no means final. This well-known observer carried out a series of investigations in order to ascertain whether human beings did or did not eat a larger amount of albuminous food than was necessary and came to the conclusion that the intake of proteids by the flesh-eating races was far too great, and that the standard of 100 grammes daily set by Voit should be reduced to about half that amount. Professor Halliburton pointed out that while nitrogenous food is essential for the repair of tissue waste, the terms nitrogenous and nutritious must not be regarded as synonymous. Non-nitrogenous foods are equally necessary for the preservation of good health, as these supply energy and animal heat. Undoubtedly, a large amount of proteid food is not required for tissue repair, which means that its excretion causes waste of energy. It is, therefore, regrettable that most well-to-do persons eat more meat and drink more alcohol than is good for their health. Nevertheless, Professor Halliburton did not think it wise to accept Professor Chittenden's views in full, for the reason that the minimum diet is not necessarily the optimum. In support of this argument the lecturer gave as examples the dietary of the poor in large cities and the small amount of nitrogenous matter eaten by vegetarians; both classes, he considered, showed less resisting power to hardship and disease than those who were meat eaters, the beneficial effects of generous feeding in pulmonary tuberculosis, and of the rest cure and good feeding for various nervous diseases were here quoted in support of the lecturer's attitude. He was, he said, of the opinion that the amount of proteid food should not be limited to subserve the repair of waste tissue, for this means to live on the margin of danger; but he thought that experiments on a far wider scale than Professor Chittenden's must be carried out before dogmatic statements would be safe.

Dr. Loether, he reminded his hearers, has pointed out that in infants ten times the minimum quantity of nitrogen necessary for this purpose was provided by nature in their proper diet of milk, even allowing for growth. The real explanation of the usefulness of an apparent excess is that certain constituents of the proteid molecule are particularly essential for the building up of the tissues; the amount of those necessary constituents is very limited in the proteid molecule, and in order to obtain an adequate supply the body has to put up with a good deal of waste substance, but the large size of the liver appears to be an express provision of nature for dealing with this waste rapidly. The easy digestibility of the proteids of animal origin render them superior to those from the vegetable world and the so-called vegetarian has had perforce to recognise this by adding to his diet three of the richest products from the animal kingdom—viz., milk, cheese, and eggs. Vegetarianism in this sense would no doubt spread if the standard of cookery was raised, but bad cooking of vegetables rendered them more indigestible, whereas bad cooking of animal food did not possess this disadvantage so markedly. In reference to the Japanese the lecturer pointed out how sadly needed are accurate details of what this nation exactly does consume. There is no doubt that within

HOSPITAL SUNDAY IN PLYMOUTH AND BRISTOL.—The total amount received by the South Devon and East Cornwall Hospital as a result of Hospital Sunday, which was observed in Plymouth on Oct. 22nd, 1935, was £255. Jan. 27th is to be observed in Bristol as Hospital Sunday.

THE LATE DR. A. SHEEN.—At a meeting of the Cardiff board of guardians held on Dec. 29th, 1936, a letter was read from Mr. Bircham, the late Local Government Board Inspector for the District, placing on record his high appreciation of the services of the late Dr. Alfred Sheen. The guardians unanimously passed a vote of condolence with Dr. Sheen's family, the chairman alluding to the loss which the workhouse infirmary had sustained through his death.

neglected their duties of proper inspection, visiting the schools but very rarely and in a superficial manner. In spite, however, of such casual fulfilment of their obligations they never omitted to send in eloquent reports of their work and of the flourishing conditions of sanitary matters in the schools. Many of these schools are overcrowded, dark, damp, and with extremely foul lavatories. The Ministry of Public Instruction intends now to remedy matters in a most energetic manner. The guilty sanitary inspectors and medical men will be dismissed, more conscientious individuals appointed to occupy their place, and the school-buildings will receive the most careful attention.

New Regulations Concerning Imported Drugs.

Henceforward no drugs will be permitted to enter the Turkish Empire the composition of which is not known or the purity of which is below the required standard. If, however, these drugs are accompanied by certificates of some acknowledged official medical administration only indicating the elements of the composition, and if these certificates are submitted to the Custom House officials, the medicines will be allowed to be imported. Yet the certificates must be legalised by the Turkish consuls abroad. Altogether forbidden are drugs and compositions which contain such ingredients as cocaine, picrotoxin, anti-tuberculous serum of Koch, and cannabis indica (preparations containing hashish). Prohibited also are chemical substances which can be used for the manufacture of explosives, such as chlorate of potassium, chlorate of sodium, nitrate of potassium and sodium, the picrates, nitroglycerin, &c. These substances will always be confiscated as soon as they arrive at the Custom House.

The Rules of Moslem Conviviality.

In one of my previous letters I spoke of the rules laid down by Islam usage and precept as to how to behave appropriately and religiously at a dinner table. Here are some other interesting Mussulman injunctions of conviviality. The honour of being served first belongs to that of the invited guest who is in the possession of any high title or who has, in any way or sphere, distinguished himself. If the host himself is the oldest in the company or has any high decoration of merit he must first begin the meal without delay, in order not to let the others unduly wait. It shows bad up-bringing to be in a melancholy mood at table, or to speak of disagreeable things, or to engage in inappropriate discussions on matters of religious plety. Foremost of all, one must always be in good humour and talk of pleasant things, as did the Prophet himself. You must always help yourself from the side of the dish nearest to you and never try to find out the best bits, which ought to be left for other guests. If one of the invited has not much appetite you must ask him up to three times, with some kind chosen words, to partake of the meals. A longer insistence would cause *enmi* and would be most inappropriate. You must never stop eating before others, because in doing so you will embarrass them and cause them to finish quickly in imitation you. Never eat gluttonously but also never attempt to conceal your good appetite. Always eat little by little. Exaggerated compliments are always misplaced. The host's duty is to make his guests feel as comfortable as possible, encouraging the timid and shy. It is contrary to good taste to address and to fix the attention of a guest when he is eating. Even if the host is not accustomed to eat much he must always try not to finish before others. Should any dish be forbidden to him by his medical attendant he certainly must not partake of it but must, at the same time, excuse himself before his guests. It is absolutely necessary to avoid every movement or gesture which is apt to create disgust. One must, for instance, never tell anecdotes of a doubtful nature, never remove pieces from the mouth, and never sneeze without turning away one's head, never yawn, or clean the nose, or approach the head too near the dish. On quitting the table everyone should wash his hands, the most distinguished in the company first of all. Always wash them standing, never spit on the floor, and rinse well the mouth. It is good and pious work to invite friends to dinner, and especially people of the same religion. On the great day of judgment the time spent in good company with the necessary observation of the enumerated rules of conviviality will be accounted to one as a high merit. It is therefore advisable to eat slowly in order to prolong this time. Never go to a dinner party without being invited unless you are a very intimate friend of the host. In the last case it is even permissible to enjoy a dinner at a friend's house without his presence, as did very frequently the

Prophet himself and his disciples. A good Mussulman ought always to have a few ready dishes for some chance friends or people of his own religion. He must, however, never fall into debt and never entertain others at the expense of his own household. If you enter a house where feasting is going on never take part in it without being invited. If you happen to notice that the invitation extended to you is not sincere leave the house under some pretext or other as soon as possible, not, however, without having previously tasted some little bit. This is a sign of good up-bringing and shows the spirit of perfect courtesy.

Jan. 3rd.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Immigration Statistics for 1905-06.

THE United States Secretary of Commerce and Labor has submitted his report for the year ending June 30th, 1906. It appears that during that period there applied for admission to ports of the United States 1,178,785 aliens, 12,432 of whom were refused admission. This total represents an excess over the arrivals of the preceding year of 152,286. Three European countries contributed, approximately, 69 per cent. of the total—viz., Russia, 215,665; Austria-Hungary, 265,138; and Italy, 273,120. Notwithstanding the large numbers from Italy and Russia shown last year, the increase from those countries was 51,641 and 30,768 respectively. On the other hand, those countries the people of which are more nearly allied in race and social standards to the people of the United States have furnished fewer immigrants. Thus the number of immigrants applying for admission from Ireland decreased 17,950; England, 15,218; Sweden, 3281; Germany, 3010; Denmark, 1229; and Scotland, 1111. The Secretary suggests that if the number of aliens brought on any vessel were so limited as to bear a fixed ratio to the tonnage of each vessel, by making the ratio sufficiently large not only would there be an actual diminution in the total arrivals but many of the incidents of suffering and discomfort attendant upon steerage travel would be obviated.

War upon Preserved Candy under the Pure Food Law.

The Pennsylvania authorities have begun a war against "The Glucose Trust." The contention is that the sulphurous acid in the glucose, which is used principally in the manufacture of candies, is in sufficient quantities to make its use a violation of the food laws of that State. At least 500 small dealers in candies have been arrested in Pennsylvania charged with using the chemicalised glucose in their candies. The dealers appealed to the "Trust" for aid which was immediately granted, as they were the best customers of the company. The "Trust" paid all fines and immediately undertook to discover some adequate substitute for the sulphur dioxide. The loss to the company by these prosecutions is estimated to be \$500,000.

Railroad Casualties in the United States.

The Interstate Commerce Commission has published its annual report on railway casualties in the United States, from which it appears that 4225 persons were killed and 66,709 were injured. Of these numbers 418 passengers were killed and 11,185 injured, and 3807 employees were killed and 55,524 were injured. There is a great increase of injured in the last report over the preceding years, but the commission makes no statement as to the causes for the increase, whether it is due to growing business, efforts to attain greater speed, or increased carelessness of employees. The greatest number of deaths and injuries of passengers from a single cause is given in the tables as, "from falling from cars while getting on or off." The same statement is true of deaths and injuries of employees.

Abolishing Mosquito-breeding Areas.

The State of New Jersey, which has long suffered from the mosquito pest, has taken measures to exterminate the evil by radical legislation. The law recently enacted makes it the duty of the Director of the State Experimental Station to have all the salt marsh areas of the State surveyed and maps made indicating all of the mosquito-breeding places found on such areas, together with a memorandum of the method to be adopted in dealing with such places, and the probable cost of abolishing the same. Likewise, surveys and maps will be made of

Baltimore.—Dr. Alfred Buchwald, *privat-docent* of pharmacology and therapeutics in the University of Breslau, where he enjoyed the titular rank of professor.—Dr. Georg Reinbach, *privat-docent* of surgery in the University of Breslau.—Dr. Karl Schoenborn, professor of surgery in the University of Würzburg and formerly professor in Königsberg, aged 66 years.—Dr. Schnetzler of Carlsruhe, well known for his numerous exposures of quacks and quack medicines.—Dr. Pietro Celoni, *privat-docent* of pædiatry in the Florence Advanced Medical School.—Dr. Venneman, professor of ophthalmology in the University of Louvain.

Medical News.

THE annual dinner of the British Gynaecological Society will take place on Thursday, Jan. 17th, at the Café Monico. Amongst those who have accepted invitations to be present are the President of the Royal College of Physicians, the President of the Royal College of Surgeons, the Director-General of the Medical Department of the Royal Navy, and the President of the Obstetrical Society of London. Mr. F. Bowreman Jessett will preside, and it is hoped that there will be a large attendance of Fellows. Any who have not yet intimated their intention of being present, and who intend to do so, are requested to communicate with Dr. Beckett-Overy, 24, Alexander-square, South Kensington, as early as possible.

DONATIONS AND REQUESTS.—The treasurers of the Middlesex Hospital have received a donation of 1000 guineas from Mrs. Ralph Price to endow a bed in the female cancer wards in memory of her husband.—Mr. W. J. Tatem of Cardiff has given 1000 guineas to the Cardiff Infirmary for the endowment of a cot in memory of his deceased son, Master T. S. Tatem.

MEDICAL MAGISTRATES.—Dr. Lachlan Grant and Dr. R. R. Macculloch have been placed on the commission of the peace for Argyllshire.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

ALLEY, SAMUEL H., M.D. Balt., has been appointed Clinical Assistant to the Chelsea Hospital for Women.
COGHELL, E. F., M.R.C.S., L.R.C.P. Edin., has been appointed Clinical Assistant to the Chelsea Hospital for Women.
GURR, ALFRED S., M.D., M.R.C.S., has been appointed Honorary Physician to the British Consulate at Mostapha Supérieur, Algiers.
LAWRENCE, P. J., Brevet-Colonel, R.A.M.C., has been appointed Lecturer in Syphilology at the Royal Army Medical College.
LATHAM, ARTHUR, M.D., B.Ch. Cantab., F.R.C.P. Lond., has been appointed Advisory Physician to the Hospital for Diseases of the Throat, Golden-square.
LAWRENCE, ARTHUR GARNON, M.D. St. And., M.R.C.S., L.S.A., J.P., has been appointed Medical Officer of Health for Chesham.
MARTIN, JAMES PIERCE, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Districts of Box and Colerne by the Chippenham (Wilts) Board of Guardians.
MIDDLETON, E. W., M.D. Balt., has been appointed Clinical Assistant to the Chelsea Hospital for Women.
OSMOND, CHARLES HOLDWAY, L.R.P.S. Glasg., L.S.A., has been appointed a District Medical Officer by the Bristol Board of Guardians.
PATRICK, J. KING, M.B., Ch.B. Glasg., has been appointed Anaesthetist to the Glasgow Royal Infirmary.
PRINGLE, A. M. N., M.B., O.M. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ipswich District of the county of Suffolk.
SHORTY, H. F., M.D., B.S. Melb., has been appointed Resident Medical Officer to the Hospital for Diseases of the Throat, Golden-square, W.
SINGTON, HAROLD S., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BATH ROYAL UNITED HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with board, lodging, and washing.
BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Assistant Physician.

BRIGHTON, HOVE, AND SUSSEX THROAT AND EAR HOSPITAL, Queen's-road.—House Surgeon, also Honorary Assistant Surgeon.
BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—House Surgeon. Salary £50 per annum, with board, rooms, and attendance. Also Assistant House Surgeon. Salary £50 per annum, with board, rooms, and attendance.
CARMARTHEN, CARDIGAN, AND PENNROSE JOINT COUNTIES LUXATIO ASYLUM, Carmarthen.—Junior Assistant Medical Officer. Salary £150, with rooms, board, washing, and attendance.
EDINBURGH SCHOOL BOARD.—Medical Officer. Salary £400.
FARRINGTON GENERAL DISPENSARY, Bartlett's Buildings, Holborn, E.C.—Honorary Physician.
GLOUCESTER GENERAL INFIRMARY AND GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £30 per annum, with board, residence, and washing.
HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, also Assistant Casualty Medical Officer, both unmarried. Salary in each case 25 guineas for eight months, with board and residence.
HULL ROYAL INFIRMARY.—Casualty House Surgeon. Salary £50, with board, and lodging.
LEITH HOSPITAL.—Surgeon in the Out-patient Department for six months. Salary £50 per annum, with board.
LONDON TEMPERANCE HOSPITAL.—Assistant House Surgeon. Salary at rate of £75 per annum.
LIVERPOOL DISPENSARY.—Head Surgeon, unmarried. Salary £200 per annum, with board and apartments. Also Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.
MANCHESTER EAR HOSPITAL.—Assistant Surgeon.
MANCHESTER EYE AND EAR HOSPITAL, 25, St. John-street, Manchester.—Honorary Aural Surgeon and Honorary Ophthalmic Surgeon. Also Anaesthetist. Salary £10 per annum.
NEWPORT BOROUGH ASYLUM, Caerleon (Mon.).—Assistant Medical Officer, unmarried. Salary £125 per annum, with board, apartments, and attendance.
NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with board, lodging, and washing.
NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Physician for Diseases of Women. Also Dental Surgeon.
ROCHDALE INFIRMARY.—House Surgeon, unmarried. Salary £160 per annum, with board, residence, and laundry.
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Two Members of the Court of Examiners.
ROYAL SOUTH LONDON DISPENSARY.—Surgeon-in-Ordinary.
ST. PANCRAS AND NORTHERN DISPENSARY, 126, Euston-road.—Honorary Physician.
SARATWAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Medical Registrar.
SHEFFIELD EAST-END BRANCH OF THE CHILDREN'S HOSPITAL.—House Surgeon. Salary £70 per annum, with board, lodging, and washing.
SHEFFIELD UNIVERSITY OF SHEFFIELD.—Chair of Pathology.
STOKES-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL.—Junior House Surgeon. Salary £50 per annum, with board, apartments, and washing.
STROUD GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.
TRURO ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 a year, with board and apartments.
VENTNOR ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Two Assistant Resident Medical Officers, unmarried. Salary £80 per annum each, with board and lodging.
VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—Senior Resident Medical Officer. Salary £105, with board, residence, and washing. Also Surgeon to Out-patients.
WAKEFIELD WEST RINGING ASYLUM.—Clinical Assistant or Junior Assistant Medical Officer.
WEST HARTLEPOOL CAXTERON HOSPITAL.—House Surgeon. Salary £100 per annum, with board, rooms, and washing.
WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £70 per annum, with rooms, board, and washing.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeon under the Factory and Workshop Act at Burford, in the county of Oxford; at Richmond, in the county of Surrey; and at Gomersal, in the county of York.

Births, Marriages, and Deaths.

BIRTHS.

CARPENTER.—On Jan. 3rd, at St. John's House, Blackheath, the wife of Sidney M. Carpenter, L.D.S. R.O.S. Eng., of a daughter.
HEWER.—On Dec. 31st, 1906, at Church-street, Stratford-on-Avon, the wife of Farnshaw Hewer, F.R.O.S., of a daughter.
SWELL.—On Jan. 4th, at Adeane Villa, Buckhurst Hill, the wife of R. Arthur Swell, M.B. Lond., of a son.

MARRIAGE.

DITTMAR-WILKINS.—On Jan. 2nd, at Hartley Wintney Church, Winchester, Hants, Frederick Dittmar, M.A., M.D., D.F.H., Catherine Beatrice Wilkins, M.A. Lond., daughter of Thomas Wilkins.

DEATHS.

MACDONALD.—On Jan. 2nd, at Inverary, Argyllshire, Francis Robertson MacDonald, M.D.
OLIVER.—On Jan. 4th, at Marsellie, Francis George Oliver, Superintending Physician, S.I. Railway, Trichinopoly, aged 43 years.
STEDMAN.—On Dec. 23rd, 1906, John Stedman, M.R.C.S., of Foke-down, Bournemouth, aged 68 years.

R.B.—A fee of 6s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

recent years their vegetarian habits have been largely departed from and some writers have in part attributed their recent vigour and success to this very circumstance. Referring to the Japanese, who are always adduced as models of plain living combined with efficiency, Professor Halliburton drew attention to the fact that no accurate information had been forthcoming as to whether the diet of our allies was so very poor in proteids as had been alleged. The supposition that the Japanese subsisted wholly on vegetable products could not be supported. Undoubtedly in recent years their vegetarian habits had been largely departed from, so that it was open to ask whether their recent vigour and success may not have had an exactly opposite origin to that so often attributed. On the question of milk Professor Halliburton urged that legislation was loudly called for in order to improve the supply and to prevent the undue addition of preservatives.

Obituary.

EDWARD ASHBY FARDON, M.R.C.S. ENG.,
L.R.C.P. LOND.

By the death of Mr. E. A. Fardon we have lost one of the ablest and most experienced of hospital administrators in the metropolis. For nearly 30 years he was resident medical officer of the Middlesex Hospital. He came of Quaker stock; his father, owning salt mines at Droitwich, held the office of mayor there, and his mother was a Bell of Alton, a descendant of one of the original Quakers, and a relative by marriage of Elizabeth Fry and the Guernseys of Earlsam. She died at the age of 84 years at Reigate and to the last wore the dress and lived the life of a typical "Friend."

Edward Ashby Fardon was born in 1846 and received his school education at the Quaker School at Sidcot in Somersetshire. On leaving school he joined his father in the salt works at Droitwich and there acquired business habits and knowledge which were of great value to him in after life. Here he worked till he was 27 years of age, but finding the business uncongenial he determined to enter the medical profession and defrayed the cost of his education partly by the money which he had managed to save and partly by winning scholarships and money prizes. He entered at the Middlesex Hospital in 1873, qualified as M.R.C.S. Eng. in 1878, and took the diploma of L.R.C.P. Lond. in 1879. He filled the office of house physician, junior and senior house surgeon, and that of resident obstetric assistant. While holding this office the post of resident medical officer to the hospital became vacant by the resignation of Mr. Henry Lucas, now surgeon to the West Suffolk Hospital, Bury St. Edmunds, and young Fardon was selected to fill the post. Here he found his life work, and although he had several tempting offers to engage in practice for which he had the best qualifications he steadily refused to entertain them and devoted himself with whole-heartedness to the interests of the Middlesex Hospital. Throughout his long term of office he enjoyed the complete confidence of the board of management, staff, resident staff, officials, and nurses, and to one and all of them he was ever ready to give the most sympathetic and enlightened assistance. Largely at his initiative, and always aided and guided by his counsel and wise supervision, many alterations and reforms have been effected in the hospital, the nursing department, and the school. Prominent among these may be mentioned the institution of the residential college for students, the Nurses' Institute and Home, the convalescent home, the laundry at Hendon, the removal of the kitchens from the basement to the upper floor of the hospital, additional wards, the operating theatres and sterilising apparatus, and the new cancer wing and cancer research laboratories. It may truly be said that there is no department of the hospital that does not bear distinct and lasting evidence of Fardon's administrative energy and ability. For several years he acted as honorary secretary to the Royal British Nurses' Association and was of great service in guiding the affairs of that body during a troubled period of its history.

Nearly two years ago it was discovered that Fardon had glycosuria and although he was carefully dieted and treated his friends were grieved to notice the only too evident signs of aging and lessened vigour. Last summer he contracted a "cold" which proved to be a tuberculous infection of the

lungs. In spite of all that the best advice could suggest and the most attentive care provide, the disease rapidly progressed and on Jan. 2nd he quietly passed away at St. Lawrence, Isle of Wight. Mr. Fardon will be greatly missed as a wise and experienced officer and mourned by many as a faithful friend. His judgment was never warped by selfishness, and his delight in helping others was unfeigned. He was laid to rest in the well-known churchyard of the old Church of St. Lawrence on Jan. 5th. At the same time a memorial service was held in the chapel of the Middlesex Hospital which was filled with a congregation, including many distinguished members of the board of the hospital, the staff, and a large number of past and present students and nurses.

ANDREW BALFOUR, M.D. EDIN., J.P.

Dr. Andrew Balfour, of Portobello, near Edinburgh, died on Dec. 26th, 1906, at the early age of 54 years. He was born in Hong-Kong, but in 1854, when he was two years old, his father, who was also a medical man, returning from the East, began practice in Portobello. The son graduated at the University of Edinburgh as M.B. and C.M. in 1873 and took the degree of M.D. in 1877. For some years he was associated with his father in practice and on the death of the latter about 20 years ago he entered into partnership with his brother, Dr. John H. Balfour, also of Portobello. Dr. Andrew Balfour held the appointments of medical officer of health of Portobello, Poor-law medical officer, and medical officer to some of the mining companies in the neighbourhood. While he was thus actively engaged in the general practice of his profession he took a prominent place in all local schemes having for their object the betterment of life. He was the means of founding the Portobello Working Men's Institute, he supported and encouraged reading and recreation rooms in the adjoining village of Niddrie, he was an active member of local bowling clubs, he started the local branch of the Boys' Brigade, and he taught a young men's Bible class for 30 years. He was an office bearer in the Free Church for many years but after the union of the Free Church and the United Presbyterian Church he transferred his membership to the Established Church. He also held office in the local Conservative Association and took an active part in local political life. He had a pleasant, friendly manner and no one doubted the honesty and straightforwardness of his opinions and actions. He leaves a widow and four children. The funeral took place on Dec. 29th in presence of a large and representative gathering.

SAMUEL EDWIN SOLLY, M.D. DENVER,
M.R.C.S. ENG., L.S.A.

Dr. Samuel E. Solly, who died recently in America, was the fourth of the seven sons of the late Mr. Samuel Solly, surgeon to St. Thomas's Hospital, who died in 1871. He was born on May 5th, 1845, and received his professional training at St. Thomas's Hospital, taking the diploma of M.R.C.S. Eng. in 1867, and that of L.S.A. in 1874. He at first practised in Savile-row where Mr. Solly, sen., also resided, but about the year 1874 ill-health caused him to seek a change of climate, and he accordingly settled at the small town of Colorado Springs, Colorado, U.S.A. Here he soon began to write on the subject of climatology, his first treatise being entitled "Manitou, Colorado, its Mineral Waters and Climate," which was published at Saint Louis in 1875. He was also the author of a "Handbook of Medical Climatology"; he contributed the article "Treatment of Tuberculosis" to Hare's "System of Therapeutics," and the article "Diseases of the Nose and Throat" to Loomie's "System of Medicine." His various writings have, no doubt, had a considerable effect in calling attention to the advantage of Colorado as a health resort. In 1886 he graduated as M.D. at the University of Denver. Dr. Solly took much interest in the work of various professional societies and organisations and had filled the office of president of the American Climatological Society, the Colorado State Medical Society, and the American Laryngological, Rhinological, and Otological Society.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced: Dr. E. A. Atkinson, formerly professor of medicine and therapeutics in the University of Maryland,

TUESDAY (5th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Dr. H. Mackenzie: Clinique. (Medical). 5.15 P.M.: Lecture.—Dr. A. H. Chester: The Surgical Anatomy of the Temporal Bone, its Bearings on Suppuration (with lantern slides).

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—10 A.M.: Dr. Moulton: Gynecological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: X Rays. Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Lecture.—Dr. Low: Insects as Carriers of Disease in Tropical Medicine.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—10.30 A.M.: Clinique.—Medical Out-patient (Dr. Auld). 2.30 P.M.: Surgical Operations (Mr. Carson); Clinique: Gynecological Out-patient (Dr. Giles). 3 P.M.: Clinique: Medical In-patient (Dr. Leslie). 4.30 P.M.: Lecture.—Dr. Forsyth: Working Value of the Diseased Heart.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. R. I. Hewlett: Medicine. 3.15 P.M.: Mr. Carless: Surgery. 4 P.M.: Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queens-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture.—Dr. Bouver: Cerebral Arterial Supply (Demonstration of Injected Hemispheres).

CHAMBER CROSS HOSPITAL.—4 P.M.: Demonstration.—Dr. Meit: (Medical). (Post-Graduate Course).

WEDNESDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Mr. J. Berry: Clinique. (Surgical). 5.15 P.M.: Lecture.—Dr. E. Cantley: Asthma in Infancy and Childhood.

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Medical Diseases of Children. 2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: X Rays. Operations. 5 P.M.: Dr. Peckard: Practical Medicine.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.). 2.30 P.M.: Cliniques.—Dermatological (Dr. Meschen), Ophthalmological (Mr. Brooks), Medical Out-patient (Dr. Whipham).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. P. Taylor: Medicine. 3.30 P.M.: Mr. Cargill: Ophthalmology. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

CENTRAL LONDON THEATRE AND EAR HOSPITAL (Grey's Inn-road, W.C.).—5 P.M.: Demonstration.—Mr. C. Nourse: Lecture.

THURSDAY (7th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Mr. Hutchison: Clinique. (Surgical). 5.15 P.M.: Lecture.—Mr. R. Jones (Liverpool): On the Treatment of some Paralytic Deformities.

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: X Rays. Operations. Mr. Dunn: Diseases of the Eye. 5 P.M.: Clinical Lecture.—Dr. Davis.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—2.30 P.M.: Cliniques.—Gynecological Operations (Dr. Giles), Medical (Dr. Whiting), Surgical Out-patient (Mr. Carson). 4.30 P.M.: Lecture.—Mr. Edmunds: Diseases of the Thyroid Gland.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. G. Rankin: Medicine. 3.15 P.M.: Mr. W. Bennett: Surgery. 4 P.M.: Mr. M. Davidson: Radiography. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—6 P.M.: Chesterfield Lecture.—Dr. M. Dockrell: Syphilis. I. History and Primary Invasion (Constitutional and Local). Erythematous, I. Macular, and II. Maculo-Papular.

CHAMBER CROSS HOSPITAL.—4 P.M.: Mr. Waterhouse: Demonstration (Surgical). (Post-Graduate Course).

HOSPITAL FOR SICK CHILDREN (St. Ormond-street, W.C.).—4 P.M.: Lecture.—Dr. Voelcker: Ped and Ecto-carditis.

FRIDAY (8th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Dr. St. Clair Thomson: Clinique. (Throat).

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—10 A.M.: Dr. Moulton: Gynecological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: X Rays. Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Clinical Lecture.—Mr. Armour.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—2.30 A.M.: Clinique.—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Surgical Operations (Mr. Edmunds); Cliniques.—Medical Out-patient (Dr. Auld), Ophthalmological (Mr. Brooks). 3 P.M.: Clinique.—Medical In-patient (Dr. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. E. Bradford: Medicine. 3.15 P.M.: Mr. McGervey: Surgery. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queens-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture.—Dr. Bouver: Hemiplegia.

SATURDAY (9th).—POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

During the week marked copies of the following newspapers have been received: British Times and Mirror, North Devon Journal, Ovan Times, Western Daily Mercury, Yorkshire Post, Liverpool Daily Post and Mercury, Liverpool Courier, Scarborough Daily Echo, Literary Digest, The Tribune, Wakefield Express, Westmorland Gazette, Sheffield Independent, Exeter Gazette, Hereford

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed exclusively "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1906, which was completed with the issue of Dec. 29th, were given in THE LANCET of Jan. 5th, 1907.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1906 are now ready. Bound in cloth, gilt lettered, price 18s., carriage extra.

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SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

Notes, Short Comments, and Answers to Correspondents.

THE COURTESY CALL.

To the Editors of THE LANCET.

SIRS.—The remarks of "A. S. S." in his letter to you on Dec. 22nd, 1906, contain advice to young practitioners respecting the importance of paying the courtesy call on their professional neighbours. Can I, in this writer's own words, ask for "your powerful influence to be exerted to impress this upon" those called upon—viz., that they should make a point of seeing that this courtesy call is duly returned. Personally, when I settled in a well-known Lancashire seaport town I called on the practitioners in the immediate neighbourhood of my predecessor's house and my own, and at least one-third of these calls remain unreturned to this day, and what makes it all the more serious is the fact that the chief delinquents were the senior men from whom one naturally would expect at least a knowledge of the commonest of courtesies. That this want of courtesy should accompany other breaches of medical etiquette is but natural, and it all goes to prove, as has been but feebly defended recently, the modern degeneracy of the present-day medical man. I feel certain if you opened your columns to a full correspondence regarding this subject the revelations which it could be possible to print would astonish even the most sceptical.

I am, Sirs, yours faithfully,

THEOLA W. ALBUM.

Dec. 23rd, 1906.

THE SIGNING OF MEDICAL BULLETINS.

To the Editors of THE LANCET.

SIRS.—A few years ago, at a meeting of a branch of the British Medical Association, and, I believe, also in your columns, there was a discussion about the appearance in the daily papers of the names of medical men in attendance upon people of any note. For a time matters improved, but lately the fault has reappeared very strongly. I could give you many instances during the last six months, but only in to-day's paper I see that Mr. Balfour and the Baroness Burdett-Coutts are ill and the names are carefully given of the medical men in attendance, as well as of the physicians in consultation. This is rather a marked contrast to the absence of names in the case of the recent illness of the Princess Royal. With ordinary care it can be avoided; but perhaps that is not wanted. The public scarcely care to know who is in attendance upon these and other sick people.

I am, Sirs, yours faithfully,

ANTI-ADVERTISER.

Dec. 31st, 1906.

LIGHTING A COUNTRY HOUSE.

To the Editors of THE LANCET.

SIRS.—Before deciding on the nature of illuminant to be fitted to a house in the country I should be glad to learn through the medium of your columns whether the medical profession hold any definite opinion on the two following points. 1. Is electric light in the composition of its rays more injurious or fatiguing to the eyes than acetylene, incandescent coal gas, or incandescent petrol vapour, and, if so, which of these four lights is the least injurious to the sight? It would be interesting to have comparisons of these with each other and with oil lamps and wax candles, and to know whether the fatigue that many people complain of as a result of electric light is merely due to improper shading. 2. Are any poisonous fumes given off as a result of the combustion of acetylene gas, coal gas, or petrol vapour, and, if so, which of the three is the least objectionable on this score?

I am, Sirs, yours faithfully,

LUMEN.

Jan. 3rd, 1907.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan 10th, 1907.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radiation in Vacuum.	Maximum Temp. in Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 4	30.108	N.W.	...	60	45	35	35	37	Fine
" 5	30.328	S.W.	...	54	51	37	44	45	Overcast
" 6	30.330	W.	...	61	48	45	46	48	Fine
" 7	30.534	S.W.	...	51	48	37	37	33	Foggy
" 8	30.538	N.	...	49	48	38	44	47	Overcast
" 9	30.470	S.W.	...	50	48	43	42	44	Overcast
" 10	30.322	W.	...	49	48	44	44	46	Overcast

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (14th).—London (2 P.M.). St. Bartholomew's (1.30 P.M.). St. Thomas's (3.30 P.M.). St. George's (2 P.M.). St. Mary's (2.30 P.M.). Middlesex (1.30 P.M.). Westminster (2 P.M.). Chelsea (2 P.M.). Samaritan (Gynaecological, by Physicians, 2 P.M.). Soho-square (2 P.M.). City Orthopaedic (4 P.M.). St. Northern Central (2.30 P.M.). West London (2.30 P.M.). London Throat (3.30 A.M.). Royal Free (2 P.M.). Guy's (1.30 P.M.). Children, St. Ormond-street (3 P.M.). St. Mark's (2.30 P.M.).

TUESDAY (15th).—London (2 P.M.). St. Bartholomew's (1.30 P.M.). St. Thomas's (3.30 P.M.). Guy's (1.30 P.M.). Middlesex (1.30 P.M.). Westminster (2 P.M.). West London (2.30 P.M.). University College (2 P.M.). St. George's (1 P.M.). St. Mary's (1 P.M.). St. Mark's (2.30 P.M.). Cancer (2 P.M.). Metropolitan (2.30 P.M.). London Throat (3.30 A.M.). Samaritan (9.30 A.M. and 2.30 P.M.). Throat, Golden-square (9.30 A.M.). Soho-square (9.30 A.M.). Soho-square (2 P.M.). Chelsea (2 P.M.). Central London Throat and Ear (2 P.M.). Children, St. Ormond-street (2 P.M.). Ophthalmic, 215 P.M.). Tottenham (2.30 P.M.).

WEDNESDAY (16th).—St. Bartholomew's (1.30 P.M.). University College (2 P.M.). Royal Free (2 P.M.). Middlesex (1.30 P.M.). Charing Cross (3 P.M.). St. Thomas's (2 P.M.). London (2 P.M.). King's College (2 P.M.). St. George's (Ophthalmic, 1 P.M.). St. Mary's (2 P.M.). National Orthopaedic (10 A.M.). St. Peter's (2 P.M.). Samaritan (9.30 A.M. and 2.30 P.M.). St. Northern Central (2.30 P.M.). Westminster (2 P.M.). Metropolitan (2.30 P.M.). London Throat (3.30 A.M.). Cancer (2 P.M.). Throat, Golden-square (9.30 A.M.). Guy's (1.30 P.M.). Royal Bar (2 P.M.). Royal Orthopaedic (3 P.M.). Children, St. Ormond-street (3.30 A.M.). Dental, 2 P.M.). Tottenham (Ophthalmic, 2.30 P.M.).

THURSDAY (17th).—St. Bartholomew's (1.30 P.M.). St. Thomas's (3.30 P.M.). University College (2 P.M.). Charing Cross (3 P.M.). St. George's (1 P.M.). London (2 P.M.). King's College (2 P.M.). Middlesex (1.30 P.M.). St. Mary's (2.30 P.M.). Soho-square (2 P.M.). North-West London (2 P.M.). St. Northern Central (Gynaecological, 2.30 P.M.). Metropolitan (2.30 P.M.). London Throat (3.30 A.M.). Samaritan (9.30 A.M. and 2.30 P.M.). Throat, Golden-square (9.30 A.M.). Guy's (1.30 P.M.). Royal Orthopaedic (9 A.M.). Royal Bar (2 P.M.). Children, St. Ormond-street (2.30 P.M.). Tottenham (Gynaecological, 2.30 P.M.).

FRIDAY (18th).—London (2 P.M.). St. Bartholomew's (1.30 P.M.). St. Thomas's (3.30 P.M.). Guy's (1.30 P.M.). Middlesex (1.30 P.M.). Charing Cross (3 P.M.). St. George's (1 P.M.). King's College (2 P.M.). St. Mary's (2 P.M.). Ophthalmic (10 A.M.). Cancer (2 P.M.). Chelsea (2 P.M.). St. Northern Central (2.30 P.M.). West London (2.30 P.M.). London Throat (3.30 A.M.). Samaritan (9.30 A.M. and 2.30 P.M.). Throat, Golden-square (9.30 A.M.). City Orthopaedic (2.30 P.M.). Soho-square (2 P.M.). Central London Throat and Ear (2 P.M.). Children, St. Ormond-street (9 A.M.). Aural, 2 P.M.). Tottenham (2.30 P.M.).

SATURDAY (19th).—Royal Free (9.30 A.M.). London (2 P.M.). Middlesex (1.30 P.M.). St. Thomas's (2 P.M.). University College (9.15 A.M.). Charing Cross (2 P.M.). St. George's (1 P.M.). St. Mary's (10 P.M.). Throat, Golden-square (9.30 A.M.). Guy's (1.30 P.M.). Children, St. Ormond-street (9.30 A.M.).
At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (14th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M.: Paper:—Dr. S. Phillips: Some Affections of the Pancreas.

TUESDAY (15th).—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover square, W.).—8.30 P.M.: Communications.—Dr. F. W. Anderson: Observations on MacConkey's Bile Salt Neutral Red Medium.—D. T. J. Horder: (1) Note on a Case of Typhoid Fever Diagnosed by Blood Culture in the Absence of Agglutination Reaction; (2) Third Case of Influenza Endocarditis Diagnosed by Blood Culture; (3) A Case of Gonococcal Endocarditis.—Mr. F. W. Twort: XI Incidence of Spontaneous Cancer in Mice.

MEDICO-LEGAL SOCIETY (22, Albemarle-street, W.).—8.30 P.M.: Exhibition of Medico-Legal Specimens. Discussion on Suicide and Sull (opened by Dr. C. Shaw).

WEDNESDAY (16th).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover square, W.).—8 P.M.: Exhibition of Mounted Specimens by M. Rousselle. Annual Address.—The President: The Flowering Plant of the Mesozoic Age in the Light of Recent Discoveries.

FRIDAY (18th).—SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (11, Chandos-street, Cavendish-square, W.).—5 P.M.: Cases will be shown by Dr. F. J. Poynton, Mr. H. S. Clogg, Dr. R. Cantley, Mr. F. L. Mummery, Dr. C. O. Hawthorne, Dr. T. R. Whipple, Dr. Carpenter, and others.

EPIDEMIOLOGICAL SOCIETY (11, Chandos-street, Cavendish-square, W.).—8.30 P.M.: Microscopical Demonstration.—Dr. J. B. Murray: Paper.—Dr. H. F. Bashford: Real and Apparent Differences in the Incidence of Cancer.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (14th).—MEDICAL GRADUATES' COLLEGE AND POLYTECHNIC (22, Chancery-street, W.C.).—4 P.M.: Dr. J. Galloway: Clinique (Skin). 5.15 P.M.: Lecture.—Dr. A. B. Kingsford: The Administration and Uses of Ethyl Chloride.

POST-GRADUATE COLLEGE (West London Hospital, Hammermith road, W.).—12 noon: Pathological Demonstration.—Dr. G. C. Low: 2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: X Rays Operations. Mr. Dunn: Diseases of the Eye. 5 P.M.: Lectures.—Mr. Baldwin: Practical Surgery.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, Tottenham, N.E.).—9.30 A.M.: Clinique.—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Cliniques: Medical Out-patient (Dr. Whipple). Throat, Nose, and Ear (Mr. Carson). X Ray Demonstration (Dr. Friele). 3 P.M.: Clinique.—Medical In-patient (Dr. Chappell).

I. Lecture

ON THE

DIAGNOSIS OF TUMOURS OF THE SPINAL CORD.

Delivered at the National Hospital for the Paralysed and Epileptic on Oct. 16th, 1906,

By FREDERICK E. BATTEN, M.A.,
M.D. CANTAB., F.R.C.P. LOND.,

ASSISTANT PHYSICIAN TO THE HOSPITAL.

THE diagnosis of tumours situated within the spinal canal is a matter of no difficulty in the later stages of the disease when all the characteristic symptoms—pain, gradual loss of power, and impairment of sensation—are present. In the earliest stage of the disease it is quite otherwise; pain is, or may be, the only symptom, and it may be impossible to detect even by the most careful examination any impairment in movement or of sensation. Such cases are in their early stages designated as sciatica, lumbago, muscular rheumatism, or "neuritis." Some are regarded as cases of hysteria or neurasthenia. In the later stages when actual weakness has appeared the cases are often said to be "myelitis," or peripheral neuritis, though even at this stage a diagnosis of neurosis is not uncommon.

Tumours of the spinal cord give rise to three definite sets of symptoms: (1) pain; (2) loss of power; and (3) loss of sensation. The relative degrees in which these three symptoms are present depend partly on the situation of the tumour and partly on the nature of the growth. The tumour may be situated outside the theca, within the theca, or within the spinal cord; the tumours in the first two situations commonly give rise to a considerable amount of pain, the latter to but little pain, although numerous exceptions to this rule are met with. The tumour may be single or multiple, innocent or malignant, slowly growing or of rapid growth. The tumours may grow in the cervical, dorsal, lumbar, or sacral regions of the spinal cord, or may be placed so low as to affect only the coccygeal region and the cauda equina.

From consideration of the above facts it will be seen how diverse the symptoms produced by a tumour of the spinal cord are and how different the clinical picture may be, in one case producing spastic paraplegia in the legs, in another a complete flaccid paralysis, in another a flaccid paralysis of an arm and a spastic condition in the legs. Before passing to the consideration of the cases about to be related it will be well to consider generally the three cardinal symptoms.

Pain in the back is a symptom of so great frequency without any sign of organic disease that little importance can be attached to it. Pain, however, which begins gradually, becomes accentuated on movement, on bending down, or on bending the head forward, and radiates down the legs or arms, should receive careful attention. Associated with this pain there may be actual tenderness on pressure on the spine and this may be so marked as to give rise to the possibility of caries of the vertebrae being present. The spine may in some cases be held rigid but in most cases free movement can be obtained. Pain is commonly the earliest symptom and frequently occurs for some considerable time before any other symptom manifests itself. "Girdle" pain may be present and may indicate the level of the lesion, but pain as a symptom does not often lend any special aid in the diagnosis of the position of the lesion; local tenderness may, however, be of localising value.

Loss of power in the legs is a complaint common to many diseases. When, however, on examination it is found that the loss of power is confined to, or at least affects, certain groups of muscles to a far greater extent than others, and when there is also a history of the gradual onset and increase of this weakness the condition is highly suggestive of the roots. In some cases the weakness and atrophy of muscles correspond exactly to the distribution of a nerve root or spinal segment; in such a case the seat of the lesion can be accurately determined or at least the highest point to which the lesion extends can be indicated.

Loss of sensation probably furnishes the best localising sign of the lesion. The examination of the patient for the appreciation of the various forms of sensation, tactile, heat and cold, and pain, is important. It is not enough to apply the tests so as to get a negative or positive result, but it is important to find the highest level of relative anaesthesia; the possibility of this depends upon the patient being a good witness.

The localising value of anaesthesia and analgesia in the distribution of a root area is of great importance. Pain, loss of power, and loss of sensation are the three chief symptoms; the condition of the reflexes and sphincters varies according to the situation of the tumour. The electrical reaction of the muscles also depends on the position of the lesion.

Having thus very shortly dealt with the cardinal symptoms let us pass to the consideration of the actual cases, and see in how far they correspond with the typical symptoms above described:—

CASE 1.—Male, aged 55 years: 15 months pain in back, shooting in character; 12 months difficulty in walking. Pain and tenderness especially over the sixth thoracic spine, weakness of legs, relative anaesthesia over legs and trunk to level of eighth thoracic segment. Increased knee-jerks, ankle clonus, extensor responses. Operation; removal of tumour; improvement.

The first case is that of a man aged 55 years. For the last 15 months the patient had had pain in the lower part of the back, and increasing difficulty in walking. He had influenza 18 months ago. In June, 1905, he had shooting pain in the sacral region and round the abdomen; the pain, he said, was easier when sitting up than when lying down, and it was especially severe after any shaking. The pain was throbbing in character, like a pulse beat. In September he had improved and was able to walk fairly well, but had pain when he stooped, or if he jarred the spine. In February, 1906, the pain recurred; he was unable to sit with comfort, and was easier standing up than when lying down. He had at this time slight delay in micturition. He came under observation in July.

On examination he was a fat, plethoric individual, very emotional at times, starting at the slightest noise. Nothing abnormal could be detected in the cranial nerves. All the muscles of the body were flabby and of poor tone but there was no definite wasting of any muscles or group of muscles. There was no tremor or rigidity. All movements of the head and neck were rather slow and limited; retraction of the head caused pain. Stooping was very limited and was done chiefly from the hip; the spine was moved as little as possible. All movements of the upper extremity were fair and of good precision. The movements of the lower extremity were feeble but all movements were capable of being performed. He walked with a somewhat stiff gait but it was rather the gait of a person who is afraid of pain produced by movement than that due to a spastic condition of the limbs. There was a sense of pain and constriction in the lower abdomen, not definitely localised. The pain was shooting in character and severe about the lower part of the spine. This pain was increased by movement, by coughing, or by laughing. Deep respiration was painful, chiefly on the left side. There was tenderness on pressure over the sixth dorsal spine and there was tenderness in the left lumbar region. There was general tenderness of the whole of the lower dorsal and lumbar region. There was slight relative anaesthesia and analgesia from the eighth rib downward. (See Fig. 1.)

The epigastric abdominal reflex was present, but the abdominal reflex below the eighth dorsal segment where the anaesthesia began was lost. The knee-jerks and ankle-jerks were very brisk; there was ankle clonus and the plantar reflexes gave extensor responses. The sphincters acted normally, but if the patient had to hold urine for a long time there was delay in starting micturition. Three small subcutaneous tumours were present in the wall of the abdomen; these were tender on manipulation. Under treatment his general condition improved, but the symptoms remained the same.

On August 20th Mr. Percy W. G. Sargent removed one of the subcutaneous tumours in the abdomen; this proved to be a lipoma. An incision was made in the middle line behind from the fifth to the tenth dorsal spine. The spine of the seventh dorsal appeared more prominent than the rest. The laminae of the fifth, sixth, seventh, and eighth vertebrae were removed. No pulsation was seen in the dura mater which appeared unusually thick as if infiltrated with growth. An incision was made into the dura mater and the cord below appeared quite normal. It was

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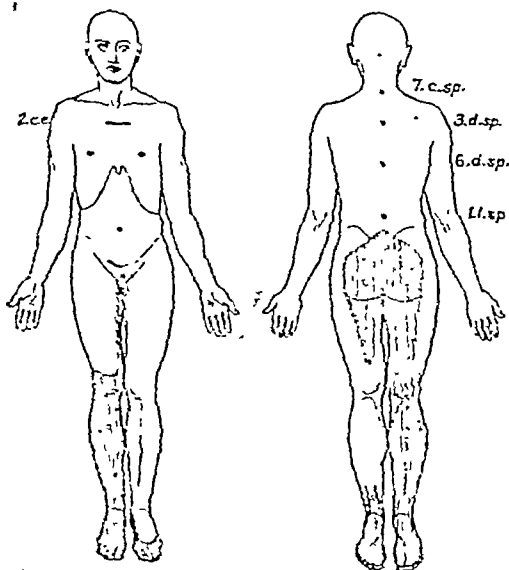
seat of the lesion may be above that indicated by the symptoms when the lesion is centrally situated.

CASE 3.—Male, aged 30 years. Four months previously slight injury, followed by difficulty in micturition, severe pain in back, and loss of power in legs; syphilis eight years ago. On examination, partial loss of pain in both legs, loss of sensation of root distribution in both legs, absent knee-jerks, and incontinence of urine. Treatment by mercurial inunction; improvement.

The third case is that of a man aged 30 years. In May, 1905, the patient was kicked in the perineum. The kick was not severe and was unattended by any bruising. Three days later he had difficulty in emptying the bladder and then failed to pass any urine. A catheter was passed and three pints of urine were drawn off. He was then laid up in bed for two weeks. On getting up he noticed that his legs were weak though he was still able to run. Since that time he had steadily got weaker and was now quite unable to walk and could not move the right foot at all. He had severe pain in the lower part of the abdomen and pain was increased by movement. He had had malaria in 1897 and syphilis in 1898.

On examination the patient was, so far as the upper extremities were concerned, a well-made man with excellent muscular development. Nothing could be found abnormal in the head, neck, thorax, or upper extremities. He was unable to walk or stand but could when lying in bed move the left leg in any direction required. All movements were, however, feeble from the hip downwards and it required but little resistance to prevent the movement being performed. The movements of the right leg were feebler than those of the left and he was quite unable to dorsiflex the foot on the right side. There was general wasting of both legs but no localised atrophy of any individual muscle or group of muscles. The abdominal muscles contracted well but there was slight elevation of the umbilicus on attempting to sit up, indicating weakness of the lower part of the rectus abdominis. The knee-jerks and ankle-jerks were absent on both sides. The plantar reflex was absent on the right and gave a flexor response on the left. The abdominal reflexes were present but difficult to obtain. There were dribbling incontinence of urine and incontinence of faeces after aperients. There was relative anaesthesia over the area supplied by the fourth and fifth lumbar and first, second, third, fourth, and fifth sacral segments of the cord on the right side and over the first, second, third, fourth, and fifth sacral segments on the left side. (See Fig. 3.)

FIG. 3.



Relative loss of all forms of sensation over shaded parts—viz., over the first, second, third, fourth, and fifth sacral root areas on both sides, and also over the fourth and fifth lumbar areas on the right side.

The position of the lesion was in this case probably at the level of the second and third lumbar segments and was syphilitic in nature. Mercurial treatment was adopted and

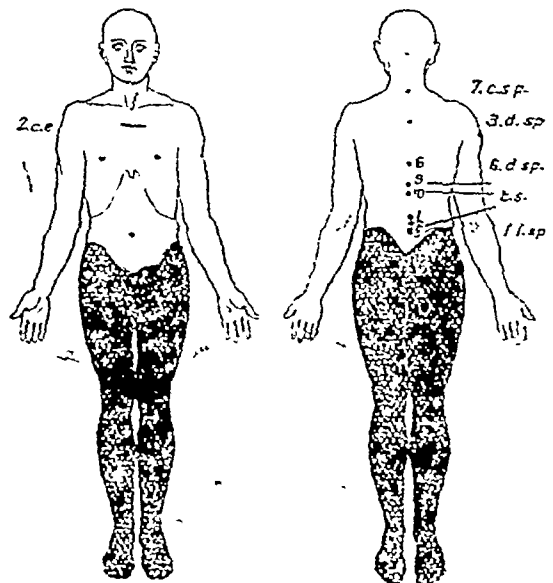
the patient rapidly improved and is now able to walk relatively well.

CASE 4.—Girl, aged 15 years; nine months pain; three months loss of power; incontinence of urine; alteration in sensation. On examination flaccid paralysis of both legs, wasting of muscles, and loss of sensation to twelfth dorsal segment. Operation; removal of extra-theal tumour.

The fourth case is that of a girl, 15 years of age. In November, 1905, the patient first began to complain of pain on the left side going down to the left hip. From this she recovered, but in February, 1906, she again had pain over the left side and the left groin. She was at this time generally out of health, but had no actual loss of power. On June 4th she fell from a swing but did not seem to injure herself. On the 12th she went to a swimming bath and on that evening had severe pain in the back and could not sleep. On July 9th she noticed dragging of the legs and she could not stand on tiptoe. On the 12th she woke up with severe pain in the back and inability to move her legs and on this day she passed urine in bed without being conscious of the act. The numbness of the legs was first noticed on this day.

On admission to the hospital on Sept. 24th she had the appearance of a rather overgrown girl for her age. Her muscular development was poor. Nothing abnormal could be detected above the umbilicus. There was complete flaccid paralysis of both legs with general wasting of muscles. The upper three-quarters of the rectus abdominis muscle acted well and the umbilicus was slightly raised on attempting to sit up; the lower quarter was weak. There were complete anaesthesia and analgesia to the level of the twelfth thoracic segment on both sides (see Fig. 4). There

FIG. 4.



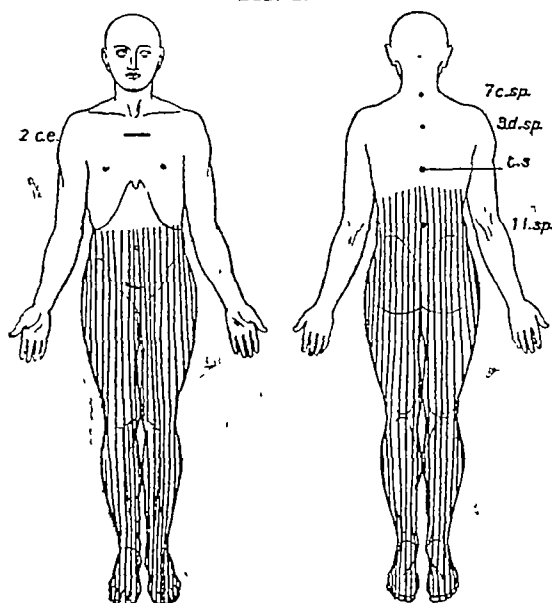
Complete loss of all forms of sensation over the blackened areas—i.e., to the twelfth dorsal segment. 12.sp. = tender spots at the level of the ninth and tenth dorsal and first, second, and third lumbar spines.

was tenderness on pressure over the ninth to tenth thoracic spines and also over the second and third lumbar. All the deep reflexes were abolished in the legs and the plantar reflexes were absent. The upper abdominal reflexes were obtained but the lower were absent. An electrical examination showed complete loss of electrical excitability to faradism in all muscles of the legs and altered reaction to galvanism. There was complete incontinence of urine and faeces.

Remarks.—The complete loss of sensation below the level of the twelfth dorsal segment and the complete loss of power below the same level with loss of sphincter control and loss of faradic excitability of the muscles would point to either a complete physiological or anatomical transverse lesion at the level of the twelfth dorsal segment or to the involvement of all the roots of the cauda equina below that level. It is impossible in the later stages of the disease to distinguish between these lesions, although in the earlier stages when

now found possible to strip the growth off from the dura mater; the growth consisted of an oval plaque, about one and a half inches long, lying on the dorsal surface of the dura mater. After this had been removed a small oval tumour of about the size of a small bean lay on the left side at the level of the seventh thoracic lamina. This tumour contained a small bead of pus or broken down growth. The patient after operation had pain and retention of urine for some days but then made a good recovery. He was free

FIG. 1.



Relative loss to all forms of sensation over the shaded area.
Ls. = tender spot at the level of the sixth dorsal spine.

from pain but still had two months after the operation considerable weakness of the legs with increased reflexes, ankle clonus, and extensor responses.

The growth was examined by Dr. T. Grainger Stewart and the following is his report: "The growth is a typical fibro-myxo-sarcoma. The dura is infiltrated by the growth and shows an increase of fibrous tissue. Though in great part the growth is a fibro-sarcoma, at places the tumour cells have undergone a myxomatous degeneration."

The leading feature in this case was pain, the loss of power being only of moderate severity and there was a relative amount of anaesthesia. The diagnosis was based on the pain, the gradual increasing loss of power, and the impairment of sensation. The points of localising value were the tenderness over the sixth thoracic spine and the relative anaesthesia to the eighth thoracic segment.

CASE 2.—Girl, aged nine years; ten months pain; difficulty in walking; five months incontinence of urine. On examination, loss of power in legs; spastic; flexed; exaggerated knee-jerks; ankle clonus; extensor responses; loss of sensation; incontinence of urine. Operation; central tumour of spinal cord; no improvement.

The second case is that of a girl nine years old. In June, 1904, she fell and bruised her back but no further trouble resulted. In October she first began to complain of pain in the back and she walked badly, dragging the toes of the right foot; she had pain in both thighs. In December her gait was very much impaired and from then to March, 1905, she was in the Victoria Hospital for Children, and whilst in the hospital she developed incontinence of urine and faeces.

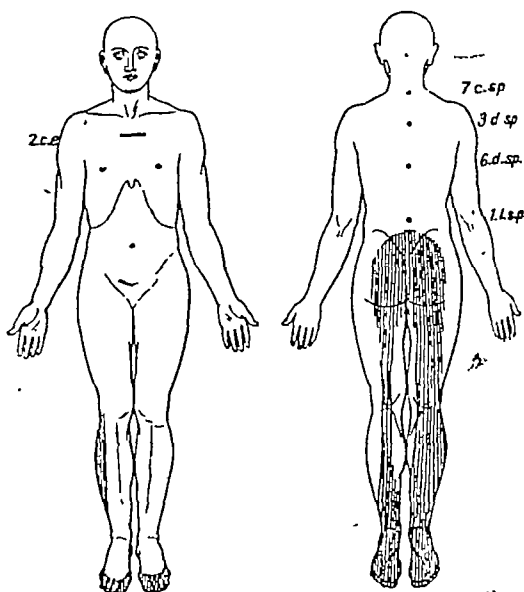
The child was admitted to the National Hospital in August, 1905, and on examination presented nothing abnormal about the head, neck, or upper extremities. The abdominal muscles acted well. There was but little power of movement of the legs from the thigh downwards. The legs were flexed and rigid and could not be extended either actively or passively; there was slight general but no localised wasting. The muscles retained their mechanical irritability. The knee-jerks were brisk and equal; the ankle-jerks were active, and ankle clonus was present on both sides and the plantar reflex gave an extensor response. There was reflex incontinence of urine and faeces; the

tonicity of the sphincter ani was natural. There was loss of tactile (cotton wool) sensation over all the sacral roots on both sides and also over the fifth lumbar root on the right side; there was partial analgesia over these areas but the patient was conscious of a pin point. (See Fig. 2.) A bed sore was present over the right buttock. There was no tenderness or deformity of the spine.

Remarks.—The cardinal symptoms of pressure on the spinal cord were present—pain, gradual loss of power, and loss of sensation. The important question was, however, What was the situation and nature of the lesion? First, pain in the thighs would seem to indicate a lesion in the lumbosacral region of the cord on both sides, possibly an extensive lesion. Secondly, the loss of power in the legs was out of all proportion to the wasting of muscles—a fact which would indicate that the lesion was situated above the lumbar segment of the cord; on the other hand, the abdominal muscles acted well, and hence the lesion should be below the twelfth thoracic segment. Again, the reflexes of the legs were all exaggerated and the limbs spastic; the presence of the knee-jerks would certainly indicate that the lesion was above the third lumbar segment. Thirdly, anaesthesia was present in the fifth lumbar root on the right side and in all the sacral roots of both sides, a fact pointing to the involvement of those posterior roots or segments of the cord.

From consideration of the above facts it was considered probable that the lesion was at the level of the twelfth thoracic segment. With regard to the nature of the lesion,

FIG. 2.



Loss of tactile sensation over the shaded portions—viz., the first, second, third, fourth, and fifth sacral root areas on both sides, and also over the fifth lumbar root on the right side.

caries of the vertebrae is by far the most common cause of paraplegia in children. The absence of any sign of caries of the vertebrae, however, led to the diagnosis of tumour.

The operation was performed at the highest level indicated by the symptoms and Mr. Horace S. Collier removed the eleventh and twelfth dorsal laminae. The cord was found to be non-pulsatile. The laminae of all the vertebrae to the sixth dorsal were then removed and the cord was found to be pulsating; at about the level of the seventh dorsal it appeared to be distended. A small incision was made into the posterior column at this level and a small amount of the transparent gelatinous substance forced its way out. The tumour was situated within the spinal cord and was irremovable. The microscope showed that the tumour was gliomatous in nature.

In this case the sensory symptoms indicated a lesion at the level of the fifth lumbar segment, the motor symptoms a lesion at the level of the twelfth thoracic; the actual seat of the lesion was the seventh thoracic segment. The case is of special value as demonstrating the fact how far the actual

eclipsed clinical experience. Meanwhile it was cold comfort to the patient to feel that he was possibly viewed by his medical attendant as an interesting pathological specimen and that the macroscopical and microscopical appearance of his ailing viscera was accurately known.

At this time the great rise of surgery took place. Surgery having found salvation in bacteriological cleanliness, such cleanliness being surgical godliness, surgeons mounted from strength to strength, and having amputated everything and anchored the rest now sigh only for new viscera to conquer. Small wonder that the surgeon who could offer active assistance was often preferred to the practitioner of passive resistance. But there is no progression without retrogression, and this stage in the evolution of medical science was the natural order of development and inevitable. As structure precedes function and anatomy precedes physiology, so morbid anatomy of the organ and then of the cell preceded chemical pathology and pharmacology of the cell. We are now in the chemical age and numerous workers are constantly adding to our knowledge; so much so that it is difficult for anyone to collect the facts, much more to digest them or apply them in practice. And yet, as I apprehend it, that is the particular duty of the general practitioner—viz., to apply new facts to old diseases.

The study of medicine is the study of life, and its foundation stone is the unit of life, the living cell. If the mystery of life is to be solved it will be by the experimental examination of the simplest form of life. The discovery that every tissue, every cell, has its own special ferment, is of far-reaching importance in explaining much that was mysterious in physiology and pathology and accentuates again the importance of chemistry in explaining vital phenomena. When medicine and physiology are written anew, in leaded type, we shall be told the relations that one ferment bears to another. Pawlow has already done this for us as regards the digestive ferments. And it is by virtue of this special ferment that each cell is able to select out of the food-stuffs such material as it can transform into energy. The corollary of this is true, that an organ or tissue may fail to perform its function from lack of special fuel to make the ferment. It has been pointed out that during the involution or atrophy of an organ the symptoms which arise may be due to the absorption of the tissue and its passing into the general circulation; absorption of kidney tissue, for example, produces increased arterial tension; liver substance lowers it. Recently, we have all seen the involution of an enlarged thyroid give rise to all the signs attributable to large doses of thyroid extract. It occurred to me that it was strange that during the involution of the gravid uterus that symptom did not arise; if this theory be correct, may it be that the product of the uterine tissue is the natural excitant of the mammary gland function? The degree of disturbance that arises may vary according to the previous activity of the organ or the rapid excretion or neutralisation of its internal secretion.

Recent researches, I think, emphasise the importance of little things. That is well shown in the effect of abstracting lime salts from the blood, in producing hæmorrhage by injudicious diet. We might have foreseen this by noting the effect of improper diet in producing scurvy. 15 grains of lime lactate are recommended as an antidote to morning headache after too much alcohol, alcohol producing slight oedema of tissues. Another point in practice is the relation of NaCl to exudations and its effect in modifying remedies. That such simple substances either withheld or abstracted from the blood can produce such far-reaching effects makes one hopeful of controlling the beginning of disease as our knowledge increases. It is new to me that acetonuria is derived, not from carbohydrates, but from the metabolism of fat, thus giving sanction to clinical experience that in such diabetic conditions it is not wise to withhold altogether carbohydrates from the diet. Professor J. B. Leathes says: "In practically all forms of acetonuria increasing the amount of fat in the food intensifies the condition. The disorder in carry out the final steps in the progressive oxidation of the fatty acids, and brought about by overtaking its powers." From the same authority we learn "that fatty degradation is not a degradation conversion of the proteins of the cells into fat, but that in fatty heart and tissues and damped down, so to speak, for the purpose of supplying source of energy to the organ, from where it was only storage fat, to where it would be used up if the

catabolic activity of the cells were normal, but the catabolic changes which liberate energy by the demolition of fatty acids fail, and the imported fat accumulates, because it cannot be used up. Ph or As, or diphtheria toxin may act as negative catalysing agents, and retard the rate at which a reaction normal to the cells take place, and so by attacking a vital function, poison the cells by robbing them of their power of using what in normal conditions would be their principal source of energy." Again, "the catabolism of proteids takes place within the cells of the various tissues by means of enzymes native to the cell. This process has been termed autolysis. And these enzymes are the agents in the resolution of pneumonic exudation. The changes in the liver in Ph poisoning are due to autolytic activity getting out of control." This stimulating effect of phosphorus on autolysis gives support to the old therapeutic practice of giving phosphorus in delayed resolution in pneumonia. "Autolysis may account for the liquefaction of pus, the softening and breaking-down of new growths, and the absorption of infarcts and thrombosed parts. The absorption of gummata by means of KI has been attributed to the influence of the drug on autolysis."

As another instance of the importance of bio-chemistry to medicine I mention the interesting suggestion of Professor B. Moore of Liverpool as to the possible causal relation of auto-catalysis and infection. "In the course of any chemical reaction the products formed may themselves in certain cases act as catalysts and alter the velocity of the reaction. Such a process has been termed auto-catalysis. When the substance formed in the reaction acts as a positive catalyst the course of the reaction assumes an accelerando type. The course of such auto-catalytic reactions bears a close analogy to the phenomena of fever. Examples of such auto-catalytic reactions are seen in the tendency of many explosive substances to spontaneous combustion or explosion. Thus if gun-cotton be not most carefully washed free from oxides of nitrogen these products, present in minute quantity at first, may set up a slow and at first inappreciable reaction which, slumbering at first, gradually increases in velocity, and finally fires off the gun-cotton. Such a process of auto-catalysis induced by a trace of enzyme may be the means of infection and of the reproduction of the virus in many of those infectious diseases, such as the acute exanthemata, in which no germ has been as yet shown to have causal connexion. The incubation period would be that required for the production of the auto-catalyst in sufficient quantity to cause a general reaction with the tissue cells. The auto-catalyst would act as the toxin of the disease; the tissue cells would react to it and produce the antitoxin until the toxin was neutralised or rendered inert. Variations in immunity would, as in parasitic infection, depend upon the individual variations in the blood as a suitable medium for such a reaction, upon the presence or absence of an anti-body at the outset capable of neutralising the trace of auto-catalysts bearing the infection, and upon the reactive power of the tissue cells to the auto-catalyst or toxin." The chemical theory of disease will explain many of the so-called functional diseases—diseases where no structural alteration is manifest, a ferment gone wrong, or an internal secretion in excess or absent, disturbing the harmonious action of the part. We hear much less than we did of idiopathic inflammations, the idiopathicitis is that is most popular amongst the "unco gild" being idiopathic urethritis and vaginitis. But this is laymen's pathology.

Our knowledge of the causes of sterility in apparently robust and vigorous couples is very unsatisfactory. I regret the current fashion of declaring in all these cases that stenosis of the cervical canal exists and that dilatation and curetting are necessary. Conception rarely follows the operation. The cause of sterility is probably much more subtle and delicate. The spermatozoon is very sensitive to both chemical and galvanic stimuli. If a galvanic current is passed through a tube containing spermatozoa the latter place themselves with their heads towards the anode and their tails to the cathode, reverse the current and they reverse their position (galvanotaxis). They have the property also of always heading up against a flowing stream (barotaxis). The spermatozoon seeks the ovum, and when the conditions are favourable is led in the right path by the chemotactic action which the metabolic products of the ovum exert upon the freely-moving sperm cell. Many chemical substances induce only positive chemotaxis, others only negative. It is evident much may happen before the spermatozoon reaches the ovum. That sterility is not always

the plantar reflex is still present the occurrence of an extensor response would point to a transverse lesion rather than to a lesion affecting the roots.

Mr. Sargent made an incision over the eighth dorsal spine and removed the laminae of the seventh, eighth, ninth, and tenth vertebrae and exposed a tumour lying outside the theca and extending along the twelfth left posterior root. The tumour was dissected off and removed. Good pulsation returned after removal of the tumour.

Microscopical examination of the tumour showed it to be a sarcoma, composed of large round cells with but little connective tissue between them. In many places the growth was formed of dense connective tissue which surrounded and pressed upon clumps of the tumour cells which in places show degenerative changes.

These four cases illustrate well the characteristic symptoms of spinal tumour—gradual and increasing pains, gradual and increasing loss of power, and impairment of sensation. In the first two cases there was a spastic paralysis with increased knee-jerks and extensor response; in the last two there was flaccid paralysis with loss of deep reflexes. The difference in the symptoms depending on the position of the lesion. The sensory symptoms gave the most accurate localisation in three cases, but was at fault in the case in which the tumour was situated within the spinal cord.

The differential diagnosis of tumours situated within the spinal cord from those situated outside is one of considerable difficulty. It was at one time thought that the loss of perception of heat and cold and the retention of tactile sensation was indicative of a lesion within the spinal cord. Although none of the cases in the present series prove this point it is certain that no great reliance can be placed on this symptom and extra-medullary lesions may in some cases give rise to dissociated anaesthesia or to the Brown-Séquard phenomenon.

In Case 4 it will be noticed that the paralysis manifested itself rather rapidly and, according to the history, became complete in from three to four days. It is possible that this is accounted for by the pressure on the cord becoming so great as to give rise to a physiological complete transverse lesion, and it will be noticed that at this time all sense of the action of micturition was lost.

The importance of early diagnosis in cases of spinal tumour is great, since from delay irreparable damage may be done to the spinal cord by the prolonged pressure of the tumour. So long as the spastic condition remains this is evidence of conduction through the cord at the seat of the lesion, but if a flaccid paralysis supervenes on a spastic condition it indicates that a physiologically complete transverse lesion of the cord has taken place and unless rapidly relieved will result in a complete anatomical transverse lesion from which there can be no hope of recovery. As in the oranium the occurrence of headache with the gradual onset of localised weakness suggests the presence of an intracranial neoplasm, so in the spinal cord the occurrence of pain and the gradual onset of weakness should always suggest the possibility of a spinal growth.

Treatment.—In cases in which there is definite specific infection mercurial inunction should be pushed to salivation; sometimes no improvement will be manifest till salivation has begun. Even in these cases if a flaccid paralysis should supervene on a spastic condition no time should be lost in opening the spinal canal and relieving pressure on the cord. In other cases iodide of potassium should be given in large doses. In the majority of cases operation is indicated and should be performed at the earliest moment compatible with accurate diagnosis. The seat of operation should be at the highest level indicated by any symptom.

For permission to refer to one of the above cases I am indebted to Dr. Thomas Buzzard and to another to Dr. J. A. Ormerod. For the careful notes I am indebted to my house physician, Dr. George Hall.

BORIC ACID IN SAUSAGES.—At Falmouth, on Jan. 7th, a butcher was summoned for selling "German sausage" containing 45 grains of boric acid per pound. The magistrates considered that the defendant had used the preservative in ignorance and the case was dismissed on his paying the costs of the court.

ABSTRACT OF

A Presidential Address

ON

SCEPTICISM IN THERAPEUTICS.

Recently delivered before the Leeds and West Riding Medical-Chirurgical Society.

By AUGUSTUS H. BAMPTON, M.D.,
M.Ch.R.U.I., M.O.H.

GENTLEMEN,—Scepticism is in the air. Even in this society, if any daring member has introduced a subject bearing on medical treatment it has been with an apologetic air and humble mien, well knowing that if his remarks had any reference to the utility of drugs in the treatment of disease they would be subjected to good-humoured banter and received by those sitting in the seat of the scornful with amused incredulity—scepticism not entirely confined to the surgeons whose mental environment, training, and temperament would discount much of it, but the chief critics have been those of the medical household. The general practitioner, in the meanwhile, has said little, pondered deeply, and prescribed more or less on the even tenour of his way. Practising both branches of the profession, as far as he knows how, he may claim to be like "Iolanthe," mortal as far as the waist and immortal below. Which half of him is medical and which surgical I leave you to decide.

If I believed that we were unable to modify, arrest, or favourably influence the progress of disease by therapeutic means, then our occupation as physician has gone, and I for one would not accept the position of a kind of superior nurse, with a watching brief, which in the past eminent men in our profession (who knew too much pathology and too little pharmacology) have assigned to us. I know of no more unsatisfactory position either to client or advocate than that of holding a watching brief. And if we are only nurses, let us be honest and say so, and not accept fees for healing and wonder-working which in the nature of things we are unable to accomplish. I do not think that at any time we were justified in assuming an attitude of helplessness or masterly inactivity. And although our treatment then, as now in part, may be stigmatised *empirical*, it was none the less founded upon careful clinical experience and we showed shrewd common sense in not being off with the old love before we were sure of the new one of experimental research. There are other of our habits besides drug taking which are equally empirical; for instance, our habits of eating and drinking, clothing, and giving in marriage, and these will continue in spite of the stigma of empiricism. The work done in the near past and present fills one with hope that our weapons will soon be weapons of precision.

It is evident that we are passing through as great a revolution in medicine as that which has transformed surgery in the last 25 years, and the reason of it is that, like the surgeons, we are getting back to first principles, we are realising in practice what we have long known in theory, that man is an organised collection of differentiated and highly specialised cells, and that cellular action is governed by physical laws and chemical processes and are profoundly influenced by slight causes, and that nine-tenths of disease are due to the interaction of cells and their products and germs and their products, chemistry being the interpreter of these phenomena. Barely 50 years ago belief in drugs and energetic treatment was the faith and practice of the majority of the profession. It was the rise of the pathological school and the study of morbid anatomy that shook the faith of the succeeding generation of practitioners, viewing only the last stages of disease and seeing structural alteration in the *mass*. It was thought unreasonable to imagine that any pharmaceutical product could have any influence whatever on such profound structural changes in vital organs. It was argued that the cause of many diseases being unknown, therefore the remedies were irrational. And it was noted that many patients got well from acute disease without any treatment whatever. Much more importance was attached to pathology than to therapeutics at the examinations and a pronounced Agnostic frequently filled the chair of pharmacology. Morbid anatomy for the moment

was known and practised thousands of years ago by the Indians and Chinese, and was quite a common practice in the Middle Ages. As time went on there was evolved the method of inoculation of cow-pox to protect against small-pox and, more recently, the use of antitoxic sera and various forms of vaccines to neutralise the effects of diseases which had already invaded the organism. The cure by such means of an already established disease is, of course, of the greatest importance to the community and various explanations have been given of the destruction of bacteria within the organism.

According to some, it depends on some action of the serum, according to others on the activity of the phagocytes which ingest and destroy the bacteria, while others hold that both serum and phagocytes are necessary. Behring showed that anthrax bacilli grow well on the blood serum of animals which are susceptible to anthrax inoculation but cannot be got to grow on the serum of white rats which have been rendered immune to anthrax. He also showed that while one particular serum is fatal to certain varieties of micro-organisms it is powerless to inhibit the growth of certain other organisms and that a definite amount of serum is only capable of dealing with a certain definite number of bacteria, so that if bacteria in excess of this number are introduced they grow and multiply actively. In other words, the immunity thus conferred depends upon the ratio between the number of micro-organisms and the quantity of the substance identical to their growth contained in the fluid.

It has been shown that the destruction of the typhoid and cholera bacillus can be brought about by lysins which are present in the corresponding immune sera after artificial inoculation (Pfeiffer) and lysins have been assumed to exist in other diseases also. In the case of diphtheria and tetanus antitoxins are employed clinically which neutralise the respective toxins. Anti-bacterial substances have by some been held to exist within the phagocytes in the form of ferments and in certain circumstances to be secreted by them. According to Metschnikoff the destruction of bacteria is carried out by the phagocytes alone which have in the case of natural immunity been pictured as carrying on a war with the microbes that are attempting to invade the organism. Relying on the experiments of Bordet and Gengou he ascribed the whole protective influence to the phagocytes alone, but it has since been conclusively shown that these, washed absolutely free from serum and the substances contained in it, have of themselves no phagocytic action on bacteria.

The theory, which is a combination of Metschnikoff's phagocyte theory and Behring's humoral theory, receives strong confirmation from some experiments of Buchner. By suitable chemical stimulation he was able to cause the secretion into the pleural cavity of rabbits and dogs of leucocyte-containing exudates which possessed bactericidal powers stronger even than those of the blood or serum of the same animal. Under these conditions, however, phagocytosis could be observed to be proceeding actively and the question immediately arose as to how far the bactericidal qualities of the fluid depended upon phagocytosis and how far upon the contained alexins or anti-bodies. The question seemed to be settled by freezing the fluid and by this means killing the leucocytes but not injuring the alexins, and then again testing its bactericidal powers. These were found to be in no way diminished, and, inasmuch as the leucocytes had been killed, the capacity of the fluid to destroy bacteria must necessarily depend upon the contained anti-bodies. But even if phagocytosis is merely a secondary phenomenon and the destruction of bacteria is brought about by poisonous substances circulating in the fluids of the body, there is a considerable amount of evidence which goes to show that these poisons are secreted by the leucocytes. The influx, therefore, of these white corpuscles to an infected area means an increased secretion of substances poisonous to the invading micro-organism and increased powers of resisting disease. One substance, opsonin or immune body, is, together with the complement present in every normal serum and accounts for its bacteriolytic and hemolytic action. Numberless observers have shown the presence of such a substance, which becomes attached to the bacteria in such a way as to render them capable of absorption and destruction by the phagocytes, but whether this action is entirely due to immune body or whether free complement also takes part in the preparation of the bacteria is not so certain. It would, at any rate, increase the strength of action of the immune body, even if it were

not absolutely necessary. I have drawn no distinction between opsonin and immune body, not because they are identical, but because up to the present it has not been shown that they are different. It has been asserted by Wright and Douglas that opsonins are thermo-labile—i.e., destroyed by heat—and therefore differ essentially from immune body. They state that if the serum be heated to 60° C. for a quarter of an hour and a tube containing the usual proportions of washed corpuscles, bacterial emulsion, and heated serum be incubated for 15 minutes no bacteria will have been ingested by the phagocytes because the opsonin necessary for their preparation has been destroyed by heat. If this were true it would make it probable that the opsonin is either of the nature of complement or receptor of a fourth order. Dean has, however, in an admirable piece of work, shown that when fresh serum, either normal or immune, is heated to 60° C. for various periods there is a great fall, as estimated by Wright and Douglas's method, in the amount of activating substance in the first two minutes and after that the curves run almost parallel to the base line. In the case of normal serum the fall is so great that the curve may reach the base line. The fall in the curve does not, however, indicate complete destruction of the substance, as was stated by Bulloch and Atkin, but merely indicates that the substance has reached a concentration below that demonstrable by Wright and Douglas's method. Horse serum after heating to 60° C. for as much as four hours still contains a considerable amount of the substance, so that, as judged by the effect of heat, there is no reason to distinguish between the opsonin of normal serum and the active substance of immune serum.

Whatever the exact nature of opsonins, they undoubtedly act on the bacteria in such a way as to enable them to be taken up by the phagocytes. This is proved by the following experiment of Wright and Douglas. Two tubes are incubated for a quarter of an hour at 37° C., the one containing three volumes of normal serum, plus one volume of staphylococcus emulsion (previously heated to 75° C. and cooled), the other containing three volumes of serum which has been heated to 60° C., plus one volume of staphylococcus emulsion (previously heated to 75° C. and cooled). On removal from the incubator the first tube (containing normal serum) is heated to 60° C. and cooled. The contents of each tube are then added to three volumes of white blood corpuscles and the number of staphylococci taken up per phagocyte counted. It is found that the number of staphylococci taken up in the second case is only one-seventh as compared to that taken up in the first case: in other words, the opsonin acts directly on the bacterium. It seems that opsonins are specific and in a considerable number of infections specific opsonins have been demonstrated. Variations in the amount of opsonins in the blood are not necessarily associated with variations in the number of leucocytes.

An increase of the opsonic content of the blood serum can be brought about by the injection into the organism of vaccines. Of these the best known is the "old" tuberculin of Koch, which he employed as an injection in the treatment of tuberculous patients when first he introduced the tuberculin method some 15 years ago. The preparation is a clear brownish fluid, somewhat viscous from the presence of glycerine, and is diluted down before use according to the required dose, bearing in mind that the dilutions must be freshly prepared. It is obtained by growing the tubercle bacilli in glycerine-veal broth in the presence of a sufficiency of oxygen for from 6 to 12 weeks, and then sterilising, evaporating, and passing twice through a Chamberland filter. The resulting fluid is practically a solution in glycerine of the cellular metabolic products of the organism and contains one or more toxic bodies which may be either of the nature of a ferment, albumose, or alkaloid. It is used chiefly for diagnostic purposes in doses of one cubic millimetre, which in tuberculous patients produce a rise of temperature and inflammatory reaction of neighbouring tuberculous lesions. If this reaction is absent double the dose is given two days afterwards and, if there is still no reaction, double the last dose is given after another two days. If reaction does not show itself after the third dose the patient is probably not tuberculous. Although this "old" tuberculin is sterilised and there is therefore no danger of inoculating the patient with tubercle by its use, it is much less used for therapeutic treatment than tuberculin Koch T.R., which is prepared from a virulent culture of tubercle by drying, grinding up the

due to gross mechanical causes is often shown by subsequent proceedings that lead to the divorce court, which proceedings may be explained, if not justified, from the biological point of view.

Have we not been unduly cautious and prejudiced in general practice against the use of tuberculin? Its use has certainly not been generally adopted in this country, although we quickly grasped the utility of using antitoxin in diphtheria. It has been stated that gouty people are never tuberculous. It would be interesting to test the truth of this statement by means of the opsonin test. As medical men all our practice, theory and treatment, is based upon the view that we have to deal with machines out of order; this function has to be put right or that part lopped off. Transcendental medicine or surgery has not yet been written. If vital phenomena are supernatural then our remedies should be supernatural. And where are we to find them? Treatment by suggestion, endeavouring to make patients believe and act upon a delusion, is perilously like playing at insanity.

The life of the individual is the sum total of the activities of his constituent cells. A man is as old as his cells. The cell is the element of living substance. All living substance exists in cells and all the functions of living substance originate in the elementary vital phenomena of the cells. Here we are on sure ground. These are the first principles of medicine. As a working hypothesis the mechanical view of life is the only practical one for medical men. The question of the unity of nature is not called in question.

Hear what a practical bio-chemist says bearing on the point speaking of metabolism. Professor Leathes says: "It implies and gently insists on the idea that all the phenomena of life are at bottom chemical reactions, when a muscle twitches no less than when a gland secretes. It is not too much to say that when we are moved to tears or laughter it is chemical reactions that are the underlying causes to which ultimate analysis must lead us." Who can doubt it who has seen the effects of drugs or other chemical bodies on the moral and intellectual faculties or other manifestations of the nervous system. In myxœdema, cretinism, alcoholism, for instance, is it not fantastical to imagine that a material drug can effect a spiritual essence? Poets make much of the paragon perfection of man and argue therefrom his supernatural attributes, but we know from our daily work that man at the present stage of evolution is frequently fearfully and wonderfully badly made—that many specimens are never out of the repair shop. It is probable that in this society there is not a member who has a perfect pair of eyes or whose nasal septum is not out of the perpendicular. In the highest and most important function for the perpetuation of the race (that of reproduction) the complaint that is continually poured into our ears is that of inefficiency.

The question of diet bulks largely in any scheme of treatment. Perhaps the burning question of the hour is what amount of proteid is necessary and advisable to maintain a high standard of health? The question cannot be answered with any certainty at present but we know by direct experiment under different conditions, as well as by the habits of some hardy and intellectual races, that great physical and intellectual activity is compatible with much less than the conventional dietary of 100 grammes or more of proteid, and that particularly in persons whose ancestors have for generations taxed to exhaustion point the cells concerned in nitrogenous metabolism a great part of this proteid may be advantageously replaced by carbohydrates or other non-nitrogenous foodstuffs, the more especially because much of the proteid never reaches the tissues as proteid. He is a wise man who knows his own metabolic limitations and does not attempt to emulate men with primitive digestions. With new drugs and new remedies we are apt to forget the debt we owe our medical forefathers who by sheer therapeutic intuition discovered and handed down to us such valuable remedies as opium, cinchona bark, mercury, nuxvomica, vaccine, and coca leaves, which the Mexicans used for generations as a local anæsthetic before the alkaloid was discovered. Coal tar was the forerunner of, and used for the same purposes as, carbolic acid. Carbolic acid gave birth to salicylic acid. The pine-forest cure suggested eucalyptus oil. I have to confess to a sneaking affection for the old-fashioned, much-ridiculed blunderbuss prescription. Each tissue knows its own requirements. It may be that I was prejudiced in the favour of these prescriptions in my early apprenticeship days. But, after all, complexity is a higher stage of evolution than simplicity. And nature's remedies

are all complex. Take, for instance, the natural mineral waters, or opium or cinchona. They are all blunderbuss prescriptions. Even the simplest fare, such as bread-and-milk, contains over 20 ingredients and yet each individual ingredient is unerringly conducted to its affinitive tissue.

We may hope that as pharmacology advances that mechanical or empirical prescribing will become less and less frequent. At present we know that drugs produce their effects either by chemical combination or by their physical properties interfering with oxidation processes, as sand puts out a fire, and their ability to penetrate a cell may depend upon the size of the molecules of which they are composed. Instances of chemical combination are shown in the exhibition of alkalies in diabetic coma and sulphonal poisoning, in the action of sulphate of soda in carbolic acid poisoning, and of sodium hyposulphite in combining with prussic acid to form the non-poisonous sulphocyanide. The most powerful narcotic substances are those which combine a very slight solubility in water with a very high solubility in ether, olive oil, or brain lipid. The cerebral cells are more sensitive to alterations in their composition than other cells and they contain a much larger percentage of "lipoid matter" or fat, so that these drugs tend to accumulate in them. Here we have an instance of the physical action of remedies. To this class belong the trional group. As a practical point I may remind you that the effects produced by adrenalin upon any tissue are such as follows excitation of the sympathetic nerve which supplies the tissue. Consequently, in cases of hæmorrhage from the lungs it is contra-indicated, because the muscles of the pulmonary blood-vessels are not supplied with constrictor fibres.

And now, Gentlemen, in conclusion, I fear that the limits of your patience must be reached. I am only too conscious of having rushed you from China to Peru, and only hope that on the voyage you may have annexed here and there some trifling *bric-a-brac* to furnish your study. The late Dr. Abercrombie sums up the lesson that I would take to myself and offer to you this evening. He says: "In regard to the effect of medicines in particular, there are two opposite errors to be equally avoided—namely, an implicit confidence in the power of particular remedies in every case, and a total scepticism in regard to the resources of medicine. Both these extremes are equally unworthy of persons of calm philosophical observation, and they who advance carefully in the middle course, not misled by the temptation to hasty conclusion, and cautioned, but not discouraged, by the danger of concluding falsely, are most likely to contribute something towards diminishing the uncertainty of medicine."

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ON OPSONINS AND TREATMENT BY BACTERIAL VACCINES.¹

By J. L. BUNOH, M.D., D.Sc. LOND., M.R.O.P. LOND.,
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THE advances of science, like those of nature, are slow, and the marvellous discoveries which are introduced to the public in their completed form and then appear, like Pallas Athene, to have leapt fully developed from the head of their creator, can on closer examination be traced through all the stages of their gradual development. Although, to the romantic imagination, the falling of an apple, the swinging of a church lamp, and the flowing of water from a bath revealed to Newton, to Galileo, and to Archimedes respectively the secrets of nature, nevertheless, truth compels us to recognise that these secrets were only unravelled by ceaseless striving and strenuous work, and that only by similar means can future advances in the field of research be accomplished. Thus we can trace back to far distant times the first attempts at preventive inoculation. It was early recognised that certain diseases occur only once in the life of the individual and he is in future protected against attacks of the same disease. From this it was a short step to the artificial production of such diseases and it has been stated that the practice of artificially inoculating small-pox

¹ A paper read before the Medical Society of University College, London, on Nov. 14th, 1906.

from time to time shows considerable variations. From the point of view of diagnosis, where tubercle bacilli cannot be found in the sputum, such a series of observations showing the presence or absence of periodic variations in the index is of the greatest importance and may be the means of the disease being arrested and the patient cured before the bacterial infection has assumed serious proportions. In other words, we may by this means be able to make an earlier diagnosis than would otherwise be possible and send the patient to a sanatorium in time to effect a rapid cure. Some observers think, however (and I agree with them), that a low index may precede infection, and even be the cause of infection, owing to an inborn or acquired inability to manufacture a sufficient quantity of protective material. From the point of view of prognosis a low index necessitates a very guarded prognosis, either as regards the possibility of infection or the relapse of a so-called sanatorium cure. Bulloch examined 14 picked cases of such cures and found their resistance low in every case except one, and of these cases one, which was considered a perfect cure, relapsed within a year.

An index appreciably above normal means, as a rule, that infection has already taken place, especially if repeated estimations show considerable fluctuations of the opsonic index. Bulloch estimated the opsonic index in 44 healthy medical students and 40 healthy hospital nurses, and for the 44 individuals he got an average index of 0.96. The variations in health range from 0.8 to 1.2. A phthisical patient, however, may have an index considerably more abnormal than this. It may be more than 50 per cent. below, or more than 100 per cent. above, normal and, in addition, the patient's index to staphylococci, streptococci, or pneumococci, or even to all three, may at the same time be quite abnormal. In such a case there is, of course, a mixed infection. In acute recent cases the index to tubercle is generally low, whether it be a lesion of the lungs, joints, or skin, because the focus of disease has not been shut off by fibrous or granulosomatous tissue and toxic material is absorbed at varying intervals into the circulation and negative phase succeeds negative phase or becomes superimposed on preceding negative phase. Where the immune body is deficient, the patient's general health bad, and resisting power low the index is low, and a very small amount of tuberculous toxin is sufficient to produce a marked depression of the opsonic index. If, however, the tuberculous lesion is of old standing and has to a large extent become isolated by fibrous tissue and shut off, as it were, outside the organism the opsonic index may be considerably above the normal. In such a case the doses of toxin which enters the circulation are small, and after each such auto-inoculation the resulting negative phase has time to be succeeded by a positive phase. In fact, the patient's protective mechanism is working under fairly satisfactory conditions and if it can only be stimulated to produce sufficient opsonins the tubercle bacillus may be worsted and a cure of the patient effected. But it is essential for success that the auto-inoculations shall be properly spaced and shall not succeed one another before the negative phase which succeeds each inoculation has passed off. When the bacterial infection is localised, as in chronic lupus and many cases of boils and abscess, little if any auto-inoculation occurs and there is no constitutional disturbance due to the microbe, so that in such cases most excellent results can be obtained by means of vaccines. In addition to such injections the patient's general health must be improved and the conditions which have rendered him liable to infection removed so far as possible, so as to increase the natural as well as the artificial immunity brought about by the inoculations.

But tubercle of the lungs is in a different category. One has known so many of these cases lose ground, even when treated early and under the most favourable hygienic conditions in Swiss health resorts and elsewhere, because they are inoculating themselves from their pulmonary lesion and from carelessness and inattention to details these auto-inoculations are allowed to succeed one another too rapidly, causing superposition of negative on negative phase. The constitutional disturbance which results from such a localised bacterial infection of the lungs shows itself in pyrexia, weakness, and anemia, and when the tuberculous infection is accompanied (as is usually the case in phthisis) by streptococci, staphylococci, or pneumococcal infection these symptoms are still more marked. Such a patient should be placed at rest in a pure atmosphere as free as possible from germs and under the best obtainable external conditions until his lung mischief has quieted down and

auto-inoculations have so far as possible ceased and his opsonic index become fairly constant. Small doses of tuberculin may then be injected and the effect on his opsonic index estimated, at first frequently and afterwards at such intervals as will enable the duration and degree of the negative and positive phase caused by each injection to be known, having regard also to the possibility of intercurrent auto-inoculations, each of which would, of course, until its effect had passed off, prohibit the injection of tuberculin. Where it is possible to determine the nature of a mixed infection, vaccines prepared from the organism which is associated with the tubercle bacillus in the patient should be employed.

Tuberculous affections, in which surgical treatment is necessary, can be considerably benefited by simultaneous injections with tuberculin. Through the kindness especially of Mr. R. J. Godlee, of Mr. B. Pollard, and of Mr. R. Johnson, I have been able to watch the effect of such treatment in some of their cases in University College Hospital and I take this opportunity of thanking them most cordially. It must be remembered that the effect of a surgical operation on a tuberculous focus is to throw some of the toxin into the circulation and so depress the resistance of the individual. This negative phase is necessarily disadvantageous to the patient, even if it does not directly interfere with the healing of his wound, or, coinciding with an accidental auto-inoculation of the patient, lead to general tuberculosis. If, however, the opsonic index be raised before operation by suitable injections of tuberculin, the negative phase due to the operation becomes superimposed on a positive phase produced by artificial inoculation and its injurious effects are masked. Tuberculin administered after operation may not only assist in the immediate recovery of the patient but may also help to prevent recurrence of the disease, especially if it has been found impracticable to remove every tuberculous focus. Such injections must, of course, be kept up over a considerable period of time.

I should like to refer briefly to two cases of Mr. Godlee's which were operated on in January, 1906, and have given excellent results. The first was a woman, aged 34 years, living in the country who had lupus of the left cheek for 26 years. She had been under treatment at a skin hospital for two and a half years and had had about 600 exposures to x rays as well as much other treatment without curing the lupus. When she came under Mr. Godlee's care she had a patch of lupus about three inches long by two inches broad, superficially ulcerated and merging into scar tissue about an inch wide at the lower edge. There was a small outlying nodule on the left ala nasi. Brown pigmentation and dilated venules were present on the side of the face and lips as a result of the x rays. On Jan. 23rd her opsonic index was 0.58. She was given an injection of 1/100th milligramme of tuberculin. On Jan. 31st her opsonic index was 0.76, and on this date she was operated on by Mr. Godlee. An incision was made all round the affected area of the skin and the included area dissected off the deeper structures. Bleeding was stopped by torsion, hot water, and adrenalin. The raw surface was covered in by Thiersch grafts cut from the front and inner side of the right thigh. On Feb. 1st her opsonic index had fallen to 0.62 and on the 7th she was given a second injection of tuberculin and again on the 13th and 20th. On the 27th the skin graft had completely taken and she left the hospital for her home in the country. Since then she has attended at the hospital from time to time and has had four more injections of tuberculin, the last dose of 1/100th milligramme on Sept. 11th, when her opsonic index was 0.94. There was no recurrence of the lupus.

The second case was that of a man, aged 38 years, who had already had one tuberculous testicle removed and was admitted under Mr. Godlee's care to have the second testicle removed and a tuberculous ulcer of the tongue excised. This was done on Jan. 31st, 1906. In the skin of the arms and trunk were the scars of nodules (presumably tuberculous) which had already been cut out. Before operation his opsonic index was 0.62 and the day after operation it was 0.51. On Feb. 5th it was 0.58, and on the 7th he had an injection of 1/100th milligramme of tuberculin, which was repeated three times during his stay in hospital, his opsonic index on March 7th being 1.1. This gradually dropped to 0.83 on July 31st, when he came to London and was given an injection of 1/100th milligramme. He writes that he is feeling well, is at work, and has had no recurrence since leaving the hospital.

bacilli, and, by washing, removing the extracellular toxins which chiefly constitute the "old" tuberculin. The residue is then made into an emulsion with distilled water after trituration, centrifugalised, and the supernatant fluid pipetted off. To it 20 per cent. of glycerine is added to preserve it and it is standardised so that one cubic centimetre contains ten milligrammes of solid substance. Dilutions can then be made to any required dose and these are heated for an hour at 60° C. in capsules so as to kill any possibly contained living bacilli. The dose is to commence with seldom more than $\frac{1}{100}$ th milligramme, usually less, and is injected subcutaneously with strict aseptic precautions. The injection should cause no rise of temperature and no general or appreciable local reaction. The amount of the dose given at subsequent injections and the intervals between the doses depend on the influence produced by the preceding dose on the opsonic index to tubercle, but the doses of one-half, one, or two milligrammes which were formerly given, are now never employed. Tuberculins have also been prepared by other pathologists, by modifications of the methods given above, or by employing hydraulic pressure to cultures of tubercle, or by oxidising them with hydrogen peroxide so as to convert the toxins into antitoxins. But the tuberculins of Hahn, of Denys, of Béraneck, of Buchner (known as tuberculo-plasmin), of Landmann (known as tuberculol), of Hirschfelder (known as oxytuberculin), and of Klebs (known as tuberculooidin and anti-phthisin) are seldom used in this country.

The elaboration of protective substances in the organism can be induced by chemical substances or vaccines prepared from bacteria other than the tubercle bacillus. I myself have used and injected vaccines of pneumococci, streptococci, and the various forms of staphylococci during the past 18 months. These vaccines are emulsions of that species of organism which has produced the disease in the patient and, inasmuch as different strains of the same organism differ greatly, the vaccine should, when possible, be prepared from a pure culture of that particular organism grown directly from the lesion to which it has given rise in the patient. In some diseases this can be done only with difficulty. In pneumonia, for instance, a mouse must be inoculated from the patient's sputum or empyema pus and a pure culture of the pneumococcus obtained from the mouse's heart blood, and a vaccine made from the culture. The emulsion prepared from such a culture must be centrifugalised and standardised so that a certain volume contains the dead bodies of a certain known number of bacteria, plus their products of metabolism. The initial dose must always be small since patients react very differently to injections and it is essential not to induce too marked or too prolonged a negative phase. This is true of any injection of a vaccine, whether it be the first or a subsequent one, but the reaction of any particular patient to a certain vaccine can be gauged from the alteration of his opsonic index after the first dose.

The inoculation of a vaccine is followed always by a certain definite train of events which, according to Wright, is as follows: 1. Upon the inoculation of a vaccine there supervenes a period of intoxication which is characterised by a decline in the anti-bacterial power of the blood. This "negative phase" is more or less accentuated and prolonged according as a larger or smaller dose of the vaccine is inoculated. In the former case the "negative phase" may disclose itself to clinical observation by a temperature reaction and constitutional disturbance. In the latter case the "negative phase" may be quite unaccompanied by clinical symptoms. 2. Upon the "negative phase" there follows a "positive phase." This phase, the characteristic feature of which is an increase in the anti-bacterial power of the blood, corresponds to a period of increased resistance. A curve which shows graphically the changes in the anti-bacterial power of the blood runs up in many cases to a sharp peak and sinks away first comparatively rapidly and afterwards more slowly. There are associated in many cases with the climax of the "positive phase" a sense of increased physical vigour and a very pronounced feeling of well-being. 3. After the negative and positive phase the blood may be maintained for a variable period (after tubercle inoculations occasionally for as long as a month) at a somewhat higher level of anti-bacterial power than before inoculation. Or—and this in connexion with inoculations of tubercle vaccine is a more usual event—the anti-bacterial power of the blood may over and over again fall back after ten days or a fortnight to the level at which it stood anterior to the inoculation.

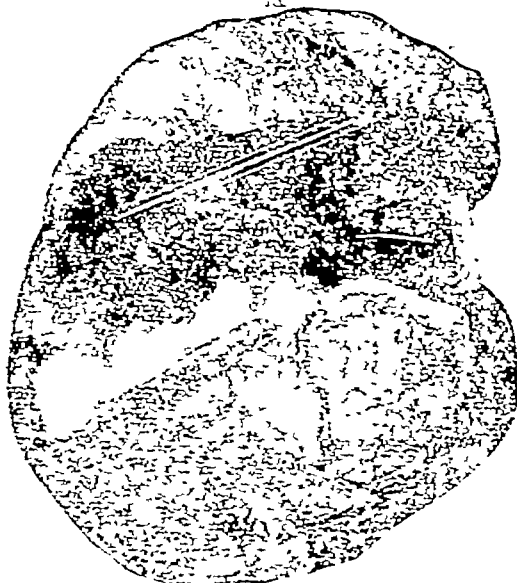
If the right dose has been given the negative phase will not be too marked or unduly prolonged and will soon be followed by a well-marked positive phase, and in succeeding inoculations the negative phase will be still less. But if too large a dose be given or it be injected when the index is falling the positive phase will make its appearance very late or not at all. I purposely lay stress on this point because some of the first injections which I gave more than 18 months ago were too large, and I have known an injection of $\frac{1}{10}$ th or $\frac{1}{20}$ th milligramme to be followed by a negative phase which was so marked as to last for weeks. It seems to be generally agreed that only the minimal dose must be employed which will produce a satisfactory response and this must not be increased until it ceases to produce its effect. The dose, moreover, must not be repeated until the effect of the preceding dose is passing off. If it were possible to produce a summation of positive phases it would be advantageous to give successive doses at short intervals, so as to produce a maximal favourable effect, but such summation is not possible in the case of tubercle. Each inoculation, therefore, produces its effect independently, and it remains to take the greatest advantage possible of the increased elaboration of protective substances which the artificial stimulus has produced. It is obvious that this can only be done by bringing the protective substance as closely as possible into contact with the bacteria which are the cause of the disease. This is simple enough when the bacteria lie within easy access of the blood stream, but when they are flourishing in the tissues in circumstances most favourable to their growth, remote from the blood stream and in contact only with a lymph which is naturally poor in anti-bacterial substances, the mere increase of the opsonic power of the blood is not sufficient. The opsonin must be brought into direct action with the bacilli in the diseased focus, and this can only be done by increasing the lymph flow through that focus. When it is situated near the surface this may best be brought about by the application of counter-irritants, rubefacients or heat, either dry or moist, in the form of hot-water bottles, hot-water tins, or the commonly used hot boracic fomentations. When the focus or disease is in a joint Bier's method of passive congestion, used with so much success in this hospital by Mr. A. E. J. Barker, is one of the greatest service. The effusion of lymph produced by each of these methods is very considerable, and, in addition, the viscosity and coagulability of the blood can be greatly diminished by the internal administration of decalcifying agents, such as citric acid. The diseased tissues can thus be irrigated by an increased flow of lymph, and if this lymph contains an amount of protective substance which has been artificially increased by means of vaccines the fight against the disease germs is carried out under conditions which are much more likely to lead to their destruction. In some cases the surgeon can render the greatest assistance by operative removal of part or the whole of the diseased focus. It is, however, to be borne in mind that in the case of abscesses cure is not brought about merely by the evacuation of the pus and the bacteria contained in it, but rather by opening up the channels which have been closed by the pressure and the vessels which have been blocked, so as to re-establish the stream of blood and lymph containing protective and anti-bacterial substances. That these are normally wanting in the pus of an abscess can easily be shown by centrifuging the fluid and proving that the liquid portion contains no opsonin. Apart from artificial increase of protective substance by injections of vaccines we must always remember the possibility of a similar increase by means of auto-inoculation, but localised bacterial infections give rise to them very scantily or not at all. Such infections run a chronic course over long periods of time, and do not tend to get well. In such cases the protective substance, if it is to be increased at all, must be increased artificially.

The opsonic index having been determined, it remains to deduce from this some conclusions as to the patient's state. If the case be one of suspected tubercle and the opsonic index to tubercle be as much as 30 per cent. above or below normal, a positive diagnosis may be made. An index to tubercle below 0.8 is undoubtedly abnormal and indicates either a strong disposition to infection such as is to be expected in a member of a family several of whom have already shown signs of pulmonary tuberculosis, or that infection has already taken place. There is not sufficient evidence to show whether the low index is necessarily the result of infection in any particular case, but this is probable if the index determined

which proved to be altered blood. The main mass of the splenic substance formed the outer and part of the posterior walls of the cyst, was about four inches long, and roughly maintained the shape of the normal spleen. Another good-sized mass of splenic substance was situated on the inner wall near the hilum, and between these two a broad bar of it extended transversely, roughly dividing the cyst into two nearly equal compartments, an upper and a lower. The splenic substance was much tougher than normal. The wall of the cyst varied from about one-eighth to one quarter of an inch in thickness; in some places it appeared to be composed of fibrous tissue only, in others splenic substance could be seen inclosed in the fibrous tissue. The inner surface of the wall was rough and coated with remains of blood clot, whilst on the peritoneal surface were remains of adhesions, torn through in removal. The main trunk of the splenic artery was found entering at the hilum; it was somewhat thickened, but not markedly so. Fine probes were passed into the main artery, which traversed the transverse bar of splenic substance mentioned above, but all attempts to discover a branch communicating with the interior of the cyst were unsuccessful.

The accompanying illustration (Fig. 1) shows the organ

FIG. 1.



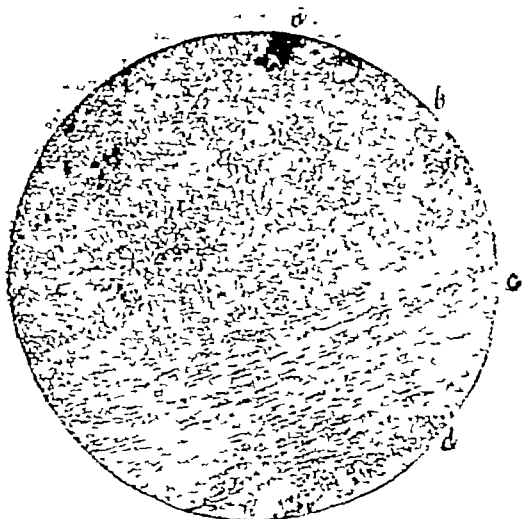
The cyst viewed from the front. The two compartments are well shown; a pad of wool has been inserted into the lower one to prevent it collapsing while being photographed.

viewed from the front and the cyst opened by a transverse cut. The remains of the spleen are seen on the right of the figure and a probe enters the splenic artery on the left at the hilum, to emerge in the spleen substance where the artery divides into several branches. The two compartments of the cyst are well shown.

Microscopical examination.—Sections of the spleen showed great thickening of its peritoneal coat. The spleen substance proper was divided from the cavity of the cyst by a fibrous tissue coat, of less density than that on the peritoneal surface, which merged into the remains of blood clot everywhere lining the cavity of the cyst; no limiting layer of cells was present. The substance of the spleen showed a slight but distinct fine fibrosis. The Malpighian bodies were well developed and quite unaffected by the fibrosis. A large amount of pigment (which gave the reaction for free iron) was scattered throughout the section. The cells contained in the trabeculae differed from the normal only in the higher proportion of polymorphonuclear neutrophils to lymphocytes and in the markedly increased number of coarsely granular eosinophile cells, the latter forming a striking feature of sections stained by Leishman's method. Sections stained with methyl violet showed slight amyloid degeneration in the trabeculae throughout the spleen substance, Malpighian bodies being unaffected. In the

thicker parts of the cyst wall (see Fig. 2) three distinct layers were present—an outer fibro-muscular layer, an inner fibrous lining of more open texture merging into the altered blood clot, and a middle zone consisting of remains of splenic tissue undergoing fibrosis. In the inner layer a good deal of pigment, some of which gave the reaction for free iron, was present. There was no sign of any layer of

FIG. 2.



A portion of the cyst wall where the three layers are well defined: (a) outer fibro-muscular layer; (b) middle layer of spleen pulp; (c) inner fibrous layer, and (d) blood clot forming lining of cyst. (1 in. obj. B eye-piece.)

cells lining the cyst cavity. The middle layer resembled the spleen, as described above, but the fibrosis and increased proportion of coarsely granular eosinophile cells were more marked. In the splenic artery there was slight patchy thickening of the intima in the portions prepared for microscopy, but there were no large patches of degeneration and no interruption of continuity of the endothelium. No amyloid degeneration could be detected. There was advanced cirrhosis of the liver of the polylobular type with well-marked perihepatitis, bands of fibrous tissue extending downwards from the thickened capsule into the liver substance. The interstitial fibrous tissue was extensively infiltrated with round cells, of which the polymorphonuclear neutrophils formed by far the larger proportion. Fatty change in, and necrosis of, the liver cells were very marked and in some areas the liver cells had broken down into masses of debris, these latter changes being evidently the result of the septic infection from the suppurating aneurysm. All the vessels in the liver showed well marked amyloid degeneration. In the kidney the usual changes of chronic interstitial nephritis were well marked and in addition there was amyloid degeneration in the vessels and glomeruli. The interstitial tissue was very cellular and here, too, the high proportion of polymorphonuclear neutrophile cells was noticeable. All the vessels showed well-marked thickening.

Non-parasitic cysts of the spleen are of extreme rarity and in text-books of pathology are dismissed with a bare reference to their existence. The Hunterian Museum of the Royal College of Surgeons of England contains one specimen of a hæmorrhagic cyst from the human subject and one of a serous cyst in the spleen of an ox. Attention was first drawn to the condition by Antral in 1829, and since then some 32 cases observed during life and about 20 met with accidentally at necropsy have been recorded.

Heinricius¹ has collected all recorded cases up to 1904, and discusses fully the various theories which have been put forward to explain the formation of these cysts; whilst lately Powers² has added some further cases. Two classes of cyst formation are discussed by Heinricius with illustrative cases: (c) serous cysts, usually multiple and of small size, which are considered to arise either from dilatation of

¹ Heinricius: Archiv für Klinische Chirurgie, 1904, vol. lxxii., p. 132. (This paper contains a bibliography of the subject up to 1904.)

² Powers: Annals of Surgery, 1906, part civl.

A case of Mr. Pollard's is also of interest in that the tuberculous affection was acute when the patient came under his care.

A girl, aged 11 years, was admitted to University College Hospital on May 18th, 1906, and discharged on June 27th cured. Three years ago she was seen in the out-patient department by Mr. Pollard for signs of tuberculous disease of the left hip. She was put on a Thomas double hip splint and remained on it for a year. The symptoms gradually subsided and the disease appeared to have cleared up. She was kept lying down for another six months, then she was up and about. Since then, during the last six months, she had several bad falls and the mother attributed the present condition to these falls. When admitted the right hip was greatly swollen and there was a large abscess on the anterior and outer parts of the joint. The skin over the abscess was slightly red. The hip joint was quite fixed in good position, the limb being slightly abducted and rotated out. There was some tilting down of the pelvis on the right side with one and a half inches apparent lengthening, but in reality half an inch shortening. There was no sign of disease in any other joint or organ. On May 19th Mr. Pollard operated by the usual incision for an anterior excision of the hip. The acetabulum was found to be perforated and an abscess inside the pelvis was evacuated, the diseased bone scraped and a counter opening made at the lower part of the abscess and two tubes inserted. She suffered considerably from shock. On admission the patient's temperature was 100.6°F . but after the operation it did not rise above 100.2° . Seven days after the operation she was given an injection of $\frac{1}{100}$ th milligramme tuberculin T.R. Next day her highest temperature was 99.2° but after that it did not rise above 99° . Six days after this injection and 13 after the operation, a second injection of $\frac{1}{100}$ th milligramme tuberculin was given, and again a third dose on June 22nd, her temperature now being normal, her appetite good, and only small granulating surfaces present where the tubes had been. On June 27th she left the hospital and went to the seaside, her opsonic index then being 1.1 as compared with 0.68 when first examined. From there she came to the hospital at the beginning of August and was given a further dose of $\frac{1}{100}$ th milligramme tuberculin. On Sept 24th her opsonic index was 0.92 and she is apparently quite cured.

My thanks are due to Mr. P. M. Heath, surgical registrar, for the clinical notes of these cases.

It is, of course, possible that these cases might have done as well without tuberculin, but their past history was in each case unfavourable and showed a tendency to recurrence, while their power of resistance to the tubercle bacillus was low. This was increased by tuberculin injections, and it is reasonable to suppose that their rapid recovery was at least aided by increasing their resisting power to the bacterial infection. I will not weary you with any more cases, but I might refer you to a paper in THE LANCET of Oct. 27th, 1906, p. 1130, by Turton and Parkin of Hull giving details of 34 cases of various kinds which they have recently treated in their practice, in 30 of which the injection of bacterial vaccines gave excellent results. The results of treatment of some dermatological cases have already appeared in a paper by Pernet and myself in the October, November, and December numbers for 1906 of the *British Journal of Dermatology*. So many other successful cases have now been recorded that the employment of bacterial vaccines must in the future prove of the greatest service in the treatment of disease when controlled by the method, which Wright and Douglas have so ably elaborated. They must in many cases be used in conjunction with other methods, for as long as a patient has a focus of disease he is liable to reinfection. In conclusion, I have to express my indebtedness to Dr. W. Bulloch for much valuable advice and assistance and to Professor Sidney H. O. Martin for his kindly encouragement and for permitting me to avail myself of the resources of his laboratory.

Park street, Grosvenor-square, W.

A CASE OF HÆMORRHAGIC CYST OF THE SPLEEN.

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THE patient, a male, aged 40 years, was admitted into St. Thomas's Hospital under the care of Mr. Clutton on Nov. 25th, 1905. He was at that time a coal porter, but had been in the Marines for 21 years and had served abroad in various parts of the world for, in all, 15 years. There was a clear history of malaria, but he denied having ever had syphilis. The family history was of no interest. Seven weeks previously to admission he noticed a small swelling on the inside of the left thigh just above the knee. This increased in size so rapidly that in less than a month he was unable to walk. On admission a pulsating swelling, having all the characters of an aneurysm of the popliteal artery, was present on the inner side of the left thigh just above the knee. The leg was markedly wasted and, in common with the rest of the body, was covered with a pustular rash of a scabetic character which, according to the patient's statement, had been present for some time. There was well-marked general arterio-sclerosis and no pulsation could be felt in the peripheral arteries below the aneurysm. The liver and spleen could be felt to be enlarged. The urine contained a trace of albumin. During the few days preceding operation the aneurysm increased rapidly in size, the circumference of the thigh, which on admission was $14\frac{1}{2}$ inches, rising to $15\frac{1}{2}$ inches three days later. At the same time the skin over the aneurysm began to show signs of pressure. On Nov. 28th Mr. Clutton operated and ligatured the femoral in Hunter's canal, the walls of the artery being found to be extensively diseased. During the next few days the temperature assumed a septic type, with signs of suppuration in the neighbourhood of the aneurysmal sac, and at the same time suppuration became more active in the pustules on that leg. There were no signs of gangrene in the leg, the state of the circulation being as before the operation. On Dec. 3rd an incision was made over the sac without actually opening the latter and extensive cellulitis was found. As will be detailed below, suppuration had actually taken place in the sac, the infection having presumably reached it from the pustules in the overlying skin, the ligation having probably hastened events by diminishing the blood-supply to the parts. After the incision the temperature fell but death took place two days later.

Post-mortem examination.—Only a partial necropsy was allowed. The skin over the aneurysm was in a sloughing condition and the sac was found to be filled with suppurating blood clot. The femoral and popliteal arteries were in a state of advanced atheroma with extensive calcification. The lumen of the femoral was firmly occluded by the ligature. The heart was enlarged, mainly owing to hypertrophy of the wall of the left ventricle. Both mitral and aortic valves were thickened, but were competent when tested in the usual manner; there were no recent vegetations upon any of the valves. There was well-marked atheroma of the aorta, though not so extensive as might have been expected from the condition of the femoral and popliteal arteries. The peritoneum and intestines were normal. The liver was enlarged, weighing $8\frac{1}{2}$ ounces, and was pale in colour and markedly cirrhotic. In addition, there were several deep puckered scars, resembling those caused by the healing of gummata. The cut surface showed the fibrous tissue to be increased, dividing up the parenchyma into islets in the manner usual in polylobular cirrhosis. There was slight enlargement of the kidneys, the organs weighing $7\frac{1}{2}$ and 7 ounces respectively. The capsules were adherent and on stripping them a coarsely granular surface of an unusual appearance was left, the elevated areas being of a dead white colour, in striking contrast to the darker coloured depressed portions. The amount of cortical substance was relatively diminished and was of a white colour, whilst the pyramids were dark. The renal arterioles were moderately thickened. The spleen was converted into an enormous unilocular cyst, measuring about 10 inches by 6 inches, of a dark indigo colour, with an irregular bossy surface. There were numerous adhesions, of considerable standing, between the peritoneal surface and the surrounding organs. On section the cyst was found to contain nearly a pint of dark, brownish-red, turbid fluid.

LITERARY INTELLIGENCE—Mr. James Stanley Little, from whose pen we publish this week an interesting lay view upon the Riviera as a health resort, is publishing through Messrs W. H. and L. Collingridge a new work entitled "The Doom of Western Civilisation." Mr. Little's title is probably more pessimistic than his book, for his previous writings lead us to believe that he thinks a good deal of vitality still remains in the British Empire.

TABLE II.—*Showing the Maximum and Minimum Proportional Differences between the Interspinous and Inter-crystal Diameters for Varying Lengths of the Conjugate Diameter. The Inter-crystal Diameter is taken as 100.*

Conjugate diameter in inches.	Minimum percentage of the interspinous to the inter-crystal diameter.	Maximum percentage of the interspinous to the inter-crystal diameter.
<i>Bengalis.</i>		
3.625	68.055	84.616
3.75	72.222	89.474
3.875	56.0	86.747
4.0	59.756	87.671
4.125	62.162	94.595
4.25	63.354	89.744
4.375	67.532	87.804
4.5	64.665	81.013
4.75	78.571	86.047
<i>Other Natives.</i>		
3.25	76.316	76.316
3.5	70.423	83.077
3.625	75.714	75.662
3.75	74.324	77.333
3.875	75.0	86.905
4.0	65.432	94.737
4.125	73.077	86.842
4.25	70.455	85.0
4.375	72.727	85.714
4.5	80.0	80.0
<i>East Indians.</i>		
3.5	80.0	80.0
3.75	81.579	81.579
3.875	72.973	80.0
4.0	68.966	85.0
4.125	65.934	89.157
4.25	67.045	85.714
4.375	74.419	85.0
4.5	71.111	79.489
<i>Eurasians.</i>		
3.75	81.25	81.25
3.875	75.676	75.676
4.0	62.651	85.0
4.125	63.415	90.278
4.25	53.333	87.179
4.375	65.116	85.333
4.5	65.25	80.263
4.625	70.833	72.693
4.75	79.071	85.047
<i>Europeans.</i>		
4.0	70.533	83.951
4.125	69.767	82.666
4.25	66.666	85.227
4.375	65.555	83.636
4.5	65.909	72.5
4.625	72.5	81.522
4.75	81.522	79.57

TABLE III.—*Showing the Average Clinical Measurements of the Pelvis in Europeans, Eurasians, East Indians, Bengalis, and Other Natives.*

	Average conjugate diameter in inches.	Average interspinous diameter in inches.	Average inter-crystal diameter in inches.	Average percentage of the interspinous to the inter-crystal diameter, the latter being 100.
Europeans ...	4.336	8.132	10.737	75.734
Eurasians ...	4.227	7.669	10.163	75.172
East Indians ...	4.145	7.536	9.931	76.22
Other natives ...	4.111	7.584	9.722	78.012
		7.422	9.554	77.624

explained by him in the paper above referred to, so as to enable a just comparison to be made between his figures and those that I should obtain. His methods were as follows. The children were all weighed on the same scales with the same weights, and all the measurements were made with the same pair of tested callipers; in the case of the bi-mastoid diameter the points of the callipers were placed in the

TABLE IV.—*Showing the Average Weight in Pounds and Measurements in Inches of the Heads of Infants taken within 24 Hours of Birth.*

	Number of cases measured.	Weight.	Bi-parietal diameter.	Bi-mastoid diameter.	Suboccipital bregmatic diameter.	Occipito-frontal diameter.	Maximum diameter.
<i>Bengalis.</i>							
Males ...	167	5.744	3.337	2.763	3.594	4.263	4.814
Females ...	162	5.679	3.401	2.724	3.554	4.209	4.777
Total ...	329	5.712	3.369	2.746	3.574	4.237	4.799
<i>Other Natives.</i>							
Males ...	27	5.524	3.44	2.762	3.634	4.273	4.824
Females ...	23	6.19	3.459	2.835	3.593	4.254	4.817
Total ...	55	6.659	3.45	2.809	3.616	4.264	4.82
<i>East Indians.</i>							
Males ...	23	6.594	3.553	2.856	3.678	4.375	4.933
Females ...	32	6.554	3.48	2.848	3.637	4.212	4.777
Total ...	58	6.572	3.513	2.851	3.655	4.302	4.847
<i>Eurasians.</i>							
Males ...	80	7.294	3.611	2.953	3.767	4.364	5.011
Females ...	63	6.895	3.547	2.961	3.675	4.314	4.879
Total ...	163	7.133	3.577	2.955	3.719	4.338	4.942
<i>Europeans.</i>							
Males ...	54	7.605	3.646	2.933	3.606	4.465	5.079
Females ...	35	7.059	3.604	2.936	3.725	4.339	4.943
Total ...	89	7.391	3.629	2.934	3.774	4.416	5.025

TABLE V.—*Showing the Average Weight in Pounds of Children Born through Different Sizes of Conjugate Diameter.*

Size of the conjugate diameter in inches.	Europeans. Number of women measured. Average weight of child.	Eurasians. Number of women measured. Average weight of child.	East Indians. Number of women measured. Average weight of child.	Other natives. Number of women measured. Average weight of child.	Bengalis. Number of women measured. Average weight of child.
3.5	—	—	—	—	—
3.625	—	—	—	1	6.25
3.75	—	—	—	1	5.078
3.875	—	1	6.375	1	5.187
4.0	4	1	8.016	3	6.328
4.125	15	19	6.949	11	6.009
4.25	22	43	6.711	19	6.774
4.375	18	46	7.317	13	6.475
4.5	22	15	7.32	7	6.937
4.625	1	2	7.211	3	6.807
4.75	1	1	9.125	—	—
4.875	1	—	—	—	—

lymph vessels or from inclusions of peritoneal endothelium; and (b) hæmorrhagic and sero-sanguineous cysts, single and usually of considerable size, which he, in common with other observers, regards as being due to the rupture of an intrasplenic vessel with subsequent encapsulation of the extravasated blood. Powers further differentiates two varieties of this latter class: one form originates in a subcapsular hæmorrhage, slight but continuing for a long time, the peritoneal capsule undergoing a low form of inflammation with the formation of adhesions and the spleen being liable to atrophy from the pressure of the cyst; whilst in the second form the hæmorrhage takes place deep in the parenchyma and the walls are formed of normal splenic tissue, which in time becomes transformed into fibrous tissue, the cyst tending as it enlarges to approach the surface. That the present specimen belongs to this variety of Class (b) is evident from the large masses of nearly normal splenic tissue contained in the walls of the cyst (as described above).

This case is described in detail as it presents many points which support the view that these cysts arise from rupture of an intrasplenic vessel. The patient was the subject of advanced arterial disease and had a popliteal aneurysm, together with evidence of syphilis in the form of gummatous cirrhosis of the liver and amyloid disease in the viscera. It is possible that there may have been a small aneurysm of one of the branches of the splenic artery, from the rupture of which the hæmorrhage originated, though the absence of any marked disease of the main splenic artery is rather against this. No communication between any of the arterial branches and the interior of the cyst could be discovered, but one cannot lay any stress on this point, as the hæmorrhage would almost certainly proceed from a small perforation, and would probably take the form of repeated small hæmorrhages spread over a long period of time. There was a history of malaria in this case, and in many of the cases quoted by Heinrichs mention is made of this point. When present it is an important etiological factor, as the liability of the enlarged malarial spleen to be ruptured by trivial injuries is well-known. And when to this predisposition is added atheromatous and amyloid disease of the vessels it is obvious that very slight causes might bring about the extravasation of blood. In some of the cases there was a definite history of trauma, but these were a minority. As regards the anatomical site of the leaking vessel in this case it was probably close to the hilum since the main mass of unaltered spleen substance formed the left-hand wall of the cyst.

In the two papers referred to the questions of symptoms, diagnosis, and treatment are considered, but these I do not propose to enter into here, as they did not come up for discussion in this case, the existence of the cyst being only discovered at the necropsy. The interest of the case lies in the presence of coincident factors which clearly indicate the pathology of one form of this rare condition.

I have to thank Mr. Olnton for permission to make use of the clinical notes of the case.

THE RELATIVE SIZES OF THE MATERNAL PELVIS AND OF THE FÆTUS IN EUROPEANS, EURASIANS, EAST INDIANS, AND BENGALIS.

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SOME time ago there appeared in THE LANCET¹ an interesting and suggestive paper by Captain Clayton A. Lane, I.M.S., entitled "A Clinical Comparison of the Maternal Pelvis and of the Fœtus in Europeans, Eurasians, and Bengalis," in which he tabulated the full measurements of 118 pelvises, the weights of 357 children, and the measurements of the heads of 158 children, and from the results obtained he enunciated a law that: "The child grows in utero in such a manner, and at such a rate that at full term his size is proportional to that of the mother's pelvis through which he has to pass in order to be born." At a later date a leading article on this paper appeared in the same journal.² At the time of

reading these articles I was holding the post of surgeon to the Eden Hospital for Women, Calcutta, thought that as I was in such a favourable position to work it would be both interesting and instructive to carry out a further course of investigations on the lines, but which should embrace a far larger series. I began this work in October, 1903, and with the exception of a few weeks' break in April and May, 1904 (due to ill health) I continued it until I relinquished my appointment in 1905. I endeavoured to adopt as far as possible exact same methods of weighing and measuring the children of measuring the pelvis, as were employed by Lane and

TABLE I.—Showing the Measurements in Inches of the for Varying Lengths of Conjugate Diameter.

Length of the conjugate diameter.	Number of cases measured.	Length of the Inter-spinous diameter.			Length of intercrural diameter.		
		Minimum.	Maximum.	Average.	Minimum.	Maximum.	Average.
Bengalis.							
3.625	6	6.125	8.25	7.187	8.5	9.75	9.146
3.75	22	6.0	8.5	7.364	7.625	10.5	9.222
3.875	49	5.25	9.0	7.383	8.75	10.375	9.429
4.0	240	5.75	9.0	7.415	8.0	10.75	9.527
4.125	84	5.75	8.75	7.495	8.625	10.75	9.674
4.25	61	6.0	9.0	7.273	8.125	10.5	9.69
4.375	11	6.5	9.25	7.989	9.375	10.75	10.0
4.5	8	6.0	8.5	7.453	9.25	10.875	9.906
4.75	2	8.25	9.25	8.75	10.5	10.75	10.625
Other Natives.							
3.25	1	7.25	7.25	7.25	9.5	9.5	9.5
3.5	3	6.25	6.75	6.417	8.125	8.875	8.553
3.625	2	5.5	6.625	6.062	7.25	8.75	8.0
3.75	4	5.5	7.25	6.656	7.75	9.375	8.875
3.875	6	7.125	9.125	8.05	9.5	10.5	10.025
4.0	33	6.0	9.0	7.619	8.75	10.75	9.633
4.125	21	7.0	9.5	7.929	9.0	11.25	9.964
4.25	16	6.625	8.75	7.633	9.25	11.0	9.994
4.375	3	8.0	8.5	8.25	9.625	11.0	10.5
4.5	1	8.0	8.0	8.0	10.0	10.0	10.0
East Indians.							
3.5	1	6.5	6.5	6.5	8.125	8.125	8.125
3.75	1	7.75	7.75	7.75	9.5	9.5	9.5
3.875	3	6.75	8.0	7.208	8.125	10.0	9.458
4.0	20	6.5	8.625	7.462	8.625	10.875	9.881
4.125	22	6.125	9.25	7.534	9.25	11.375	10.062
4.25	16	6.5	9.0	7.742	9.25	11.0	10.062
4.375	7	7.25	9.0	8.089	9.0	11.125	10.178
4.5	4	6.875	8.0	7.631	9.625	11.25	10.344
Eurasians.							
3.75	1	8.125	8.125	8.125	10.0	10.0	10.0
3.875	1	7.0	7.0	7.0	9.25	9.25	9.25
4.0	33	6.25	8.5	7.53	8.75	11.0	9.958
4.125	52	6.125	9.25	7.534	9.0	11.0	9.995
4.25	60	6.125	9.25	7.698	9.0	11.75	10.275
4.375	34	6.5	9.25	7.865	9.0	11.625	10.231
4.5	20	6.625	8.875	7.775	9.25	11.125	10.356
4.625	2	7.75	8.5	8.125	10.75	12.0	11.375
4.75	2	8.5	9.25	8.875	10.75	10.75	10.75
Europeans.							
4.0	4	7.5	8.5	8.062	10.125	10.625	10.437
4.125	14	7.0	8.625	7.732	9.375	11.5	10.339
4.25	25	6.75	9.375	8.06	8.75	12.125	10.665
4.375	19	7.0	10.25	8.053	10.0	12.0	10.711
4.5	24	6.875	10.75	8.448	10.0	12.5	11.083
4.625	1	7.25	7.25	7.25	10.0	10.0	10.0
4.75	1	9.375	9.375	9.375	11.5	11.5	11.5
4.875	2	8.25	9.25	8.75	10.625	11.625	11.125

¹ THE LANCET, Sept. 26th, 1903, p. 855.

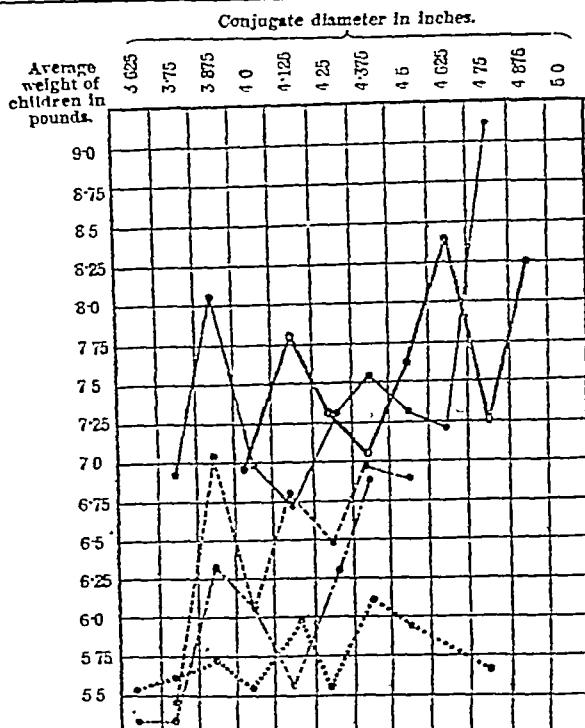
² THE LANCET, Oct. 3rd, 1903, p. 953.

and interspinous measurements bear no relation to the length of the conjugate diameter is again demonstrated. The differences between the intercrystal and interspinous diameters are, on the whole, slightly more marked, but whereas in his table he found that as the conjugate diameter increased in size, the percentage of the interspinous to the intercrystal diameter showed a regular successive diminution, my results fail entirely to demonstrate anything of the sort. This remark applies to the measurements of all the different races equally. As none of the figures in my table show any regularity in this respect it would appear probable that it was merely a coincidence that those cases measured by Lane showed this striking regularity of diminution. This particular point seems to me of itself of little importance as these numbers, as he himself mentions, are of no clinical value in any given case; for in any given size of conjugate diameter it will be seen that the interspinous and intercrystal measurements vary both actually and relatively within even wider limits than in his tables. It will also be noted that with the highest conjugate diameters this average percentage tends to increase rather than to diminish. In Table II. practically the same facts are brought out as in Lane's corresponding table (III.), except that even greater differences are to be found between the maximum and minimum measurements; but this is exactly what would be expected as the result of the larger number of cases measured.

Turning next to Table III., and comparing this with his corresponding table (IV.), whereas he found that the average measurements of the East Indian pelvis were even smaller than those of the Bengali, and, moreover, that the shape of the false pelvis was in them not that of the Bengali, it will be noted that in my table so far from the pelvis of East Indians being smaller, it is on the average larger and the false pelvis is shown to be practically of the same shape; and, furthermore, it will be seen that the Bengali pelvis is smallest, the East Indian next in size, the Eurasian third, and the European largest of all; there would thus appear to be a regular gradation of size in proportion to the admixture of the native element, which is certainly what one would have expected rather than the results obtained by Lane. It may further be noted that the average measurements of the Bengali pelvis and of "Other Natives" are so nearly alike that it would seem to be permissible to argue that the size of the East Indian pelvis would be little, if at all, affected by the question as to whether the native element is Bengali or otherwise.

Coming next to the results of the measurements of the child's head as shown in Table IV., my figures on the whole differ very slightly from those obtained by Lane (vide Table V. in his paper); but in comparing Table V. with his corresponding table (VI.), in which he obtains a very remarkable and striking relationship between the size of the child (as gauged by its weight) and the size of the pelvis (as gauged by the conjugate diameter) through which it passes, the weight of the child showing a steady successive rise with the increase in size of the conjugate diameter, my results are not at all so strikingly regular, although they show a tendency in the same direction. This is clearly demonstrated in the chart here given. Comparing Table VI. with his corresponding table (VII.), in which he again obtains a strikingly regular successive increase in the length of the bi-parietal diameter of the child's head, corresponding to the increase in size of the conjugate diameter of the pelvis through which it passed, here again nothing of the sort is demonstrated by the figures obtained by me, though again there is some tendency in the same direction. This once more seems to me to be only what one would expect, for it is but natural that as a general rule a big woman (in whom usually the pelvis is correspondingly large) should have a big child and vice versa.

I have added a further table (VII.) showing the size and weight of the children of various pregnancies passing through pelvis of the same conjugate diameter. I have only tabulated four sizes of pelvis and these only in Bengalis, because they are the only ones in which I have obtained sufficient numbers of measurements to make the results of any value at all. This table shows again how much the measurements of the child's head passing through the same sized pelvis may vary. There is no doubt that its value would have been far greater had it been possible to obtain measurements of successive children of the same mother,



Bengalis are shown by the dotted line; other natives by the "dot and dash" line; East Indians by the interrupted line; Eurasians by the fine continuous line; and Europeans by the thick continuous line.

but as this has not been feasible I thought it would be worth while to tabulate the results here given. In only one instance did I get the measurements of two successive children born of the same mother, and these were as follows:—

	Weight in pounds.	Bi parietal diameter.	Bi mesal diameter.	Suboccipito-bregmatic diameter.	Occipito-frontal diameter.	Maximum vertexo-montal diameter.
First child ...	7.6	3.5	3.0	3.75	4.5	5.125
Second child ...	8.6	3.5	3.0	3.875	4.5	5.0

With the exception of the children born through the pelvis of 3.875 inches diameter, it will be noted that the size of heads of the first children, as gauged by the bi-parietal diameter, are smaller than the succeeding ones and that there is a gradual increase in size in each succeeding pregnancy up to the fifth, after which the heads again begin to get smaller. The weight of the child shows a general tendency in the same direction, but this is not at all so regular as in the case of the bi parietal measurements.

In conclusion, it will be seen that the proportion in weight and size of the child's head to the size of the pelvis through which it is born is by no means so strikingly regular as would appear from the measurements obtained by Lane, and certainly does not in any way seem to justify the enunciation of any law on the subject.

Calcutta.

BRISTOL DISPENSARY.—At the annual meeting of the subscribers of the Bristol Dispensary, held on Jan. 11th, the chairman stated that the committee had decided to appoint an additional medical officer in February; the institution will then have nine medical officers on the staff.

horizontal groove at the base of the mastoid process. The measuring of the other diameters calls for no particular comment. In the case of the pelvis the interspinous diameter was measured by pressing the two thumbs firmly outwards against the anterior superior spines of the ilia and bringing the points of the callipers against the thumbs. The conjugate diameter was measured by sinking the hand in between the two recti abdominis muscles so that the tip of the middle finger was strongly pressed

TABLE VI.—*Showing the Average Length in Inches of the Various Diameters of the Heads of Children born through Different Lengths of the Maternal Conjugate.*

Length of the conjugate diameter.	Number of women examined.	Length of the bi-parietal diameter.	Length of the bi-mastoid diameter.	Length of the sub-occipito-bregmatic diameter.	Length of the occipito-frontal diameter.	Length of the maximum diameter.
<i>Bengalis.</i>						
3.625	4	3.344	2.75	3.56	4.281	4.876
3.75	10	3.425	2.625	3.512	4.237	4.762
3.875	37	3.402	2.747	3.547	4.264	4.797
4.0	153	3.381	2.753	3.557	4.244	4.783
4.125	57	3.401	2.774	3.59	4.224	4.827
4.25	40	3.372	2.706	3.569	4.212	4.737
4.375	6	3.521	2.729	3.657	4.21	4.792
4.5	3	3.5	2.667	3.708	4.238	4.8
4.75	1	3.5	2.625	3.75	4.25	4.875
<i>Other Natives.</i>						
3.5	1	3.125	2.75	3.375	4.25	4.875
3.625	1	3.375	2.75	3.75	4.0	4.75
3.75	1	3.5	2.75	3.5	4.0	4.75
3.875	3	3.542	2.792	3.75	4.25	4.792
4.0	28	3.464	2.853	3.638	4.272	4.803
4.125	9	3.361	2.694	3.53	4.222	4.75
4.25	12	3.478	2.854	3.604	4.24	4.844
4.375	2	3.5	2.937	3.75	4.5	5.0
<i>East Indians.</i>						
3.75	1	3.25	2.625	3.5	4.25	4.875
3.875	3	3.333	2.792	3.75	4.458	4.958
4.0	11	3.477	2.818	3.625	4.273	4.818
4.125	19	3.559	2.862	3.632	4.296	4.836
4.25	13	3.481	2.885	3.644	4.269	4.808
4.375	7	3.446	2.857	3.732	4.339	4.857
4.5	3	3.542	2.92	3.667	4.417	5.0
<i>Eurasians.</i>						
3.75	1	3.5	3.0	3.75	4.5	5.25
3.875	1	3.5	2.875	3.75	4.5	5.25
4.0	19	3.5	2.836	3.724	4.336	4.888
4.125	43	3.552	2.895	3.677	4.34	4.904
4.25	46	3.595	2.932	3.723	4.386	4.946
4.375	31	3.597	2.915	3.733	4.411	5.036
4.5	15	3.625	2.875	3.775	4.392	4.992
4.625	2	3.662	2.875	3.687	4.312	4.937
4.75	1	4.0	3.25	3.875	4.625	5.375
<i>Europeans.</i>						
4.0	4	3.625	2.936	3.75	4.437	5.062
4.125	15	3.625	2.958	3.733	4.383	4.967
4.25	22	3.619	2.937	3.807	4.386	5.025
4.375	18	3.632	2.937	3.736	4.41	4.993
4.5	22	3.653	3.0	3.836	4.523	5.102
4.625	1	3.75	2.75	4.0	4.5	5.125
4.75	1	3.5	2.75	3.75	4.75	5.5
4.875	1	4.0	3.0	3.75	4.375	5.125

against the promontory of the sacrum (the patient lying on her back with thighs flexed). The hand was then depressed till its radial edge came in contact with the upper edge of the symphysis pubis, the point of contact being marked off by one of the nails of the other hand. The distance from this point to the tip of the middle finger was then measured off by the callipers. I made, however, two

slight deviations: first, in most cases I checked the measurement of the antero-posterior diameter at the brim, by measuring the diagonal conjugate as well; and, secondly, I endeavoured to record such smaller differences of measurement as one-eighth of an inch. Although, as pointed out in the editorial article on the subject, it is doubtless impossible to measure with absolute accuracy such small differences in the living pelvis without anaesthesia, still I think it may be contended that the results arrived at will, taken as a whole, represent fairly accurate averages. I have also adopted the same classification into Europeans, Eurasians, East Indians, and Bengalis, with the same meaning to these terms—i.e., Europeans, those of pure European extraction with no admixture of any native element; Eurasian, those of mixed European and native extraction in whom the white element predominates; East Indian, those also of mixed extraction.

TABLE VII.—*Showing the Average Weight in Pounds and Size in Inches of the Heads of Children of Different Pregnancies passing through Pelves of the Same Conjugate Diameter in Bengalis.*

Number of pregnancy.	Number of children measured.	Weight.	Bi-parietal diameter.	Bi-mastoid diameter.	Sub-occipito-bregmatic diameter.	Occipito-frontal diameter.	Maximum vertex-mental.
<i>Pelves of 8.875 inches Conjugate.</i>							
1	15	5.767	3.408	2.758	3.517	4.275	4.8
2	5	5.45	3.35	2.75	3.575	4.2	4.8
3	7	5.748	3.375	2.714	3.554	4.196	4.75
4	4	6.074	3.437	2.844	3.656	4.437	4.75
6	2	5.265	3.437	2.687	3.5	4.185	4.73
7	1	5.719	3.5	2.75	3.5	4.125	4.625
9	1	6.75	3.75	2.875	3.625	4.375	4.875
10	1	7	3.375	2.375	3.5	4.0	4.75
<i>Pelves of 4 inches Conjugate.</i>							
1	65	5.4	3.304	2.71	3.502	4.223	4.765
2	42	5.788	3.44	2.815	3.565	4.255	4.83
3	25	5.656	3.385	2.76	3.56	4.25	4.75
4	13	6.117	3.658	2.875	3.683	4.327	4.904
5	6	5.417	3.376	2.729	3.477	4.271	4.71
6	2	5.234	3.25	2.5	3.5	4.125	4.687
7	4	5.594	3.376	2.812	3.625	4.25	4.812
<i>Pelves of 4.125 inches Conjugate.</i>							
1	22	6.036	3.381	2.744	3.58	4.25	4.847
2	17	5.894	2.397	2.794	3.596	4.221	4.848
3	9	5.88	3.403	2.75	3.583	4.181	4.75
4	3	5.76	3.458	2.792	3.667	4.268	4.833
5	1	6.172	3.5	3.0	3.75	4.375	4.875
6	1	6.547	3.5	2.75	3.75	4.125	4.675
<i>Pelves of 4.25 inches Conjugate.</i>							
1	18	5.395	3.326	2.701	3.562	4.222	4.776
2	12	5.611	3.396	2.719	3.573	4.208	4.781
3	6	5.669	3.396	2.708	3.604	4.167	4.812
4	1	7.0	3.5	2.75	3.75	4.5	5.0
5	1	6.875	3.5	2.75	3.625	4.5	5.0
6	1	4.578	3.25	2.75	3.25	3.75	4.5
8	1	5.0	3.375	2.375	3.5	4.25	4.75

but in whom the dark blood predominates. I have also further included a class "Other Natives," into which I have put all other native women coming from parts of India other than Bengal. I have excluded other classes, such as Jewesses, &c., as they were not measured in sufficient numbers to give figures of any value. Altogether, during this period 941 pelvis were measured and 699 full-term children were weighed and measured, the measurement, &c., of full-term children, and pelvis of normal women only being recorded.

To compare the results of Table I. (in which for the purpose of economy of space I have combined the measurements shown in Tables I. and II. of Lane's paper) with those obtained by him, as far as these corresponding tables can be compared, his only containing measurements of Bengalis, the well-known fact that the average intercrural

Microscopical appearances of the thyroid and parathyroid glands.—The thyroid presented the well-known features characteristic of myxœdema. There was an almost complete disappearance of gland tissue which had been supplanted by fibrous tissue. Here and there were collections of small round cells and in other places clumps of degenerated thyroid tissue. In these there still remained a suggestion of the normal follicular structure and many of the

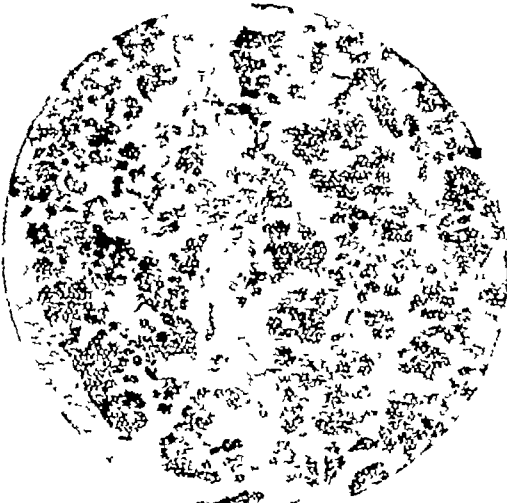
FIG. 1.



Parathyroid gland from case of myxœdema (Zeiss A objective). Showing (1) profuse secretion of colloid distending the lymphatics, (2) increase of fibrous tissue breaking up the cells into isolated clumps, and (3) thickened coats of arterioles on extreme right.

altered vesicles inclosed small drops of colloid. The arteries of the gland showed the marked thickening of their coats which has been frequently observed in other cases. The parathyroid glands were compared with those taken from a large number of other subjects and certain points of difference were apparent. The normal gland, it will be remembered, is made up of solid masses of closely packed

FIG. 2.



Another parathyroid from same case (Zeiss D objective). Showing (1) intercellular mesh of connective tissue, (2) much colloid secretion, and (3) tendency of cells to form acinar grouping.

polyhedral cells, the groups being supported by delicate trabeculae of connective tissue. These cells are arranged for the most part without order, but occasionally they show a tendency to group around a common centre and less frequently a completely formed acinus results, the lumen of

which is filled with colloid secretion. The special features wherein the glands from this case of myxœdema appeared to differ from the ordinary glands were: first, in the arrangement of their cells; secondly, in the quantity of their secretion; and thirdly, to a less extent in the stroma and in the walls of the blood-vessels. The arrangement of the cells was unusual owing to the marked tendency they showed to form small vesicles. In contrast to some parathyroids where a more or less prolonged search is required before an example of this acinar arrangement is discovered, in these specimens there were few fields without acini and many fields contained a dozen or more. In each vesicle the epithelium was a layer of cubical cells. The resulting general appearance of the glands was much more suggestive of ordinary thyroid tissue than is usually the case. As regards the features of the individual cells there was no point to be noticed in either nucleus or protoplasm which could not be frequently observed in other parathyroid glands. The colloid secretion was copious. With few exceptions all the vesicles contained this material and drops of it lay between the clumps of unarranged cells. The lymphatics of the gland were distended with the same secretion and on serial section could be traced towards the surface uniting to form large channels which conveyed the colloid away from the gland. After examining some hundreds of parathyroids, in none do I remember

FIG. 3.



A third parathyroid from same case (Zeiss A objective). Showing excessive formation of fibrous tissue whereby a definitely lobular appearance is conferred on the gland.

such vigour of secretion as in these. The slight change mentioned as present in the stroma consisted in some increase of the connective tissue. Certain of the trabeculae were thickened and in parts of the gland there was a delicate intercellular mesh of connective tissue. In one of the glands there was further a slight thickening of the walls of the arterioles. The two fibrous bodies to which reference has already been made proved on section to possess a glandular structure with a fairly advanced condition of fibrosis—less advanced than in the thyroid, more advanced than in the parathyroids. From the remains of the glandular elements it is not easy to decide whether the bodies were originally accessory thyroids or parathyroids, for the details of structure might represent either the one or the other.

In conclusion, it remains to offer an explanation of the changes in the parathyroids. It is not possible, however, in the limits of this paper to discuss the various interpretations that might be set on these changes and I shall content myself with offering what seems to me the correct solution. I do not think that we should regard the changes in the arrangement of the cells and in the amount of secretion as pathological; rather are they to be interpreted as signs of excessive activity of the glands. The particular reason that we advance for this unusual secretion will depend on the view which we take of the physiological importance of the parathyroids—whether we regard them as glands *sub generis* or as glands possessing a true thyroidal function. Accepting

A FATAL CASE OF MYXŒDEMA WITH CHANGES IN THE PARATHYROID GLANDS.¹

By DAVID FORSYTH, M.D. LOND., M.R.C.P. LOND.,

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THE modern treatment of myxœdema has so affected the mortality of the disease that opportunities of examining subjects post mortem are by no means common. While this result is wholly satisfactory to us as clinicians, from a pathological point of view it is, perhaps, regrettable because the work of recent years suggests that the pathogeny of myxœdema is more complex than was at one time believed. The attempted production of the disease in animals has led to results more contradictory than would have been anticipated. The thyroid has been removed and the chronic symptoms of myxœdema have followed; it has been removed and acute nervous symptoms leading to speedy death have resulted; it has been removed with no untoward accident being produced. These results raise a doubt as to whether myxœdema is attributable to the loss of the thyroid function alone, and the doubt is fostered by the fact that in some cases the administration of the gland extract fails in its results. The whole question has been still further complicated by the supposition on the part of many that the parathyroid glands possess a function of prime importance which is intimately bound up with that of the thyroid. To what extent, if any, these small bodies are concerned in the production of myxœdema is not settled; in fact, as far as I am aware, no account of their condition in atrophy of the thyroid has been published.

The particular case which I am bringing to your notice derives its interest not so much from its clinical features as from the post-mortem findings, yet I feel no excuse is needed for submitting it to this purely clinical gathering. The thyroid gland can without exaggeration be looked on as the peculiar property of our Society seeing that its relation to myxœdema was here established. In these circumstances an account of the parathyroid glands will not be without interest. The patient with whom we are concerned was under observation only a short while before death and the notes of her condition are brief. She was admitted into Guy's Hospital under Dr. W. Hale White, and to him I am indebted for access to the clinical report of which the following are the salient points.

The patient, aged 58 years, married, was admitted to hospital on March 19th, 1906, for "general debility." Her father had died from heart disease at the age of 49 years; her mother had lived to the age of 84 years when she died from old age, and in neither was there any history of thyroidal trouble. The patient bore three children, all of whom are alive and well, the eldest being 26 and the youngest 20 years. There is no history of any family hereditary disease. The previous illnesses include none more serious than scarlet fever and German measles in childhood. The outstanding feature of her adult life appears to have been intemperance. The mental state of the patient disabled her from rendering any trustworthy account of her illness and the details were obtained from the husband. By him the disease was dated back four years, beginning insidiously. Even before that date, however, comment had been made on the inactivity of her habits and on her marked disinclination to expose herself to the open air. For three years the progress of the disease was slow, but 12 months ago she was unable to get upstairs without assistance and since then she had grown more and more inactive. Two or three months before admission the disease began to make rapid strides. Her mind became affected and she grew quite childlike. What little power of locomotion she still retained deserted her and she was quite unable to walk. Persistent pain settled in the back of the neck. She lost control of both bladder and rectum. Her teeth loosened and fell out one after the other without preliminary decay. Her hair, not only on the scalp but from the eyebrows, too, was shed and she rapidly sank into a helpless and apathetic state.

On admission the temperature was 98° F., the pulse was 86, and the respirations were 20. The patient was noted as a little woman with a complexion suggesting the yellow tint

of pernicious anemia. She was singularly dull and listless and the difficulty of communication with her was not lessened by a certain suspiciousness in her attitude towards others. To questions her replies were delayed and were then given in a slow, deliberate manner, with thick articulation. As already mentioned, she was unable to supply details of her past history. She lay still in bed on her back and complained that movement of her legs was painful and of her head very painful. Her arms she used in a slow and lumbering fashion. No teeth remained in her jaws and much hair had fallen out from the scalp but the baldness was more marked in the eyebrows. The tongue was clean but abnormally large. The skin over the whole body was dry, very tough, and yellow, and the slightest touch appeared to give pain, especially on the soles of both feet. The left ankle was red and swollen and the subcutaneous tissue about it pitted on pressure. The hands were cold and spade-shaped and the thyroid appeared atrophied. The pupils reacted to light and accommodation. The calves of the legs were not tender and there was no paralysis though the grip of the hands was weak. Knee-jerks normal; flexor plantar reflex; loss of control of the bladder. The respiratory and circulatory systems presented nothing abnormal. The abdomen was large—35 inches at the umbilicus—but no ascites had formed. The spleen was not palpable but the liver was felt two inches below the costal margin. An examination of the blood showed red corpuscles, 1,700,000 (34 per cent.); white corpuscles, 5000; hæmoglobin, 30 per cent.

The progress of the case was from the first towards a fatal end. The patient's mind wandered considerably and her memory was unretentive of the most recent events. She grew more and more noisy, especially at night, and died on April 2nd, a fortnight after admission. The treatment employed consisted of five grains of dried thyroid extract three times a day and a mixture containing potassium iodide. The former was omitted for a couple of days as it was suspected to be in part responsible for the delirium.

A post-mortem examination was made 12 hours after death. There were old-standing adhesions between the lobes of the lung and between the lungs and diaphragm. The apex of the left lung contained a calcareous deposit and its base showed hypostatic pneumonia. The heart, which weighed 384 grammes, presented some fatty infiltration of the myocardium and hypertrophy of the left ventricle. The anterior cusp of the mitral and all the cusps of the aortic valve were slightly atheromatous, as also was the aorta itself, thoracic and abdominal. The liver slightly fatty and the kidneys with some interstitial nephritis complete the list of organs other than the thyroid and parathyroids which were affected.

Thyroid gland.—A detailed examination was made of the structures in the neck. The whole of the soft tissues anterior to the prevertebral muscles and deep to the sternomastoid were removed *en bloc*, including everything from the tongue to the superior mediastinum. These were carefully dissected and every gland discovered was retained for microscopical section. The thyroid itself in the usual position was remarkably small, pale, and indefinite in outline, merging into the surrounding connective tissue. The isthmus was represented only by a fibrous band spanning the trachea. After dissecting the gland away from its attachments its lobes were seen to have none of the characters (colour, consistency, &c.) of the healthy thyroid and, except at the lower pole on each, none of the usual contour. The whole organ was a thin sheet of fibrous tissue wrapped round the front and sides of the trachea. In close connexion with the right lobe were two parathyroid glands, one lying on the lower part of the lateral surface, the other a short distance inferior to the gland. On the left side were four parathyroids, two large and two minute. Of the former, one lay on the lateral surface of the gland, the other just above the point of entry of the inferior thyroid artery. Close to this last were the two minute parathyroids. All six glands were imbedded in much fat and rested on the thyroid without being depressed into its surface. The four largest were elongated ovoids from 0.5 to 1 centimetre in length, the two smallest being mere pin-heads. All were fairly soft in consistency and of a dirty yellowish-brown colour. On the left side below the thyroid gland were two pale brown bodies, of which the note made at the time of the necropsy was "tough, almost fibrous." The nature of these will be discussed below. In addition to these a large number of glands were examined microscopically but all proved to be lymphatic.

¹ A paper read before the Clinical Society of London on Jan. 11th, 1907.

hæmatemesis. In the other two there had been some, but it had not been a prominent feature. It had only appeared late in the course of the complaint and was not serious in quantity. I looked upon it rather as a consequence of the vomiting. Mælena had not been noted. The onset in all had been very gradual. It was not possible to fix even an approximate date for the beginning. There was a history of long-continued dyspepsia and there were no symptoms sufficiently defined to mark the transition from simple indigestion to a severe degree of pyloric stenosis. In all there was the suspicion of gastric ulcer and at the operation no trace of ulceration or of the cicatrix left by an ulcer could be found either on the serous or the mucous surface.

Whatever may be the pathology of this affection, it is clear that the muscular fibre of the pylorus has disappeared to great extent and been replaced by tough and unyielding fibrous tissue. The serous coat is not involved and there is no evidence of inflammation. There may have been a stage of muscular hypertrophy preceding this, but there was nothing to suggest it in any of my cases. The most probable explanation is that the fibrous degeneration is the outcome of long-continued spasmodic contraction, caused by resistant dyspepsia. In the earlier period if the cause is removed before the degeneration has advanced too far cure may be possible without operation. These are probably the cases in which systematic lavage succeeds. But when that stage is reached in which the pylorus is so rigid that it does not yield to any reasonable degree of force spontaneous recovery is most unlikely. Fortunately gastro-enterostomy, specially that modification described by Finney, can be relied upon to effect a permanent cure with the minimum of risk. I performed it in all of these with the very best result. The pain disappeared. The patients improved in weight and strength, and so long as they took reasonable care they were enabled to lead their ordinary lives and live on ordinary diet.

The question of the time for surgical treatment, therefore, turns upon the stage the fibroid degeneration has reached. Up to a certain point, if the cause that maintains the spasmodic contraction is removed, absorption may take place and the opening regain its elasticity. Beyond that point, whether the cause is removed or not, absorption can do nothing unless it is assisted in some way. The contraction merely becomes tighter. Unhappily the change is so insidious that, as in all my cases, no definite date could be assigned. But it may be taken as fairly certain, if a case is watched for any length of time, that if the dyspepsia returns again and again after apparent cure, and the stomach shows signs of increasing size, especially if at the same time there is evidence that the muscular coat is capable of work, there must be some form of pyloric obstruction and if this does not soon yield to lavage it is better that the patient should have gastro-enterostomy performed than that he should be allowed to continue in a state of constant pain, steadily deteriorating in health and strength.

There is one caution that must be observed. Gastro-enterostomy effects such marvellous results in these cases, that patients, unless they are warned beforehand, are liable to expect too much from it. They are apt to think that they can do what they like and eat what they like, as they did before the operation, forgetting the consequences that followed. It is essential that they should understand what gastro-enterostomy is and what it is intended to do. So far as the difficulty is a mechanical one, to be treated by mechanical means, gastro-enterostomy can be relied upon to effect a cure. It does not treat, or pretend to treat, the condition which preceded the stenosis, and which may continue after the stenosis has been divided. There will not be so much pain, it is true. Such acute attacks of stomachic colic are no longer possible after the contracted sphincter has been divided, and this is one of the great advantages of Finney's method over others. But if the conditions of living which gave rise to the dyspepsia at the first, when the stomach was still perfectly healthy, are allowed to continue, they will give rise to the same results, so far as they can, after gastro-enterostomy has been performed. For want of being cautioned about this patients are sometimes disappointed with the results of gastro-enterostomy. They think that the operation will cure the condition which gave rise to the stenosis as thoroughly as it cures the stenosis itself. I have known several instances in which patients have come back some months after the operation, declaring in spite of their greatly improved appearance and strength that they were as bad as they were before the

operation. It is my invariable rule in such cases to put them to bed, to get the bowels to act thoroughly well, and to restrict them to milk diet for a day or two; and I have never known a case in which the pain did not disappear immediately and recovery follow at once.

Wimpole-street, W.

A CASE OF ABNORMAL DEVELOPMENT OF THE OESOPHAGUS.

By J. E. SPICER, M.A., M.B., B.C. CANTAB.,
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DURING the last 18 months three similar cases of congenital malformation of the oesophagus have been admitted to the London Hospital. The anatomical characteristics of two of them, as well as of previously reported cases, have recently been described by Dr. Arthur Keith and myself.¹ The following case has occurred since and has not yet been recorded. I am indebted to Mr. Jonathan Hutchinson, jun., for permission to publish it.

The abnormality is identical with that of the other cases and can be seen in the accompanying diagrams. It is due to maldevelopment of the tracheo-oesophageal septum in the anterior part of the primitive oesophagus. As a result the upper part of the oesophagus is found to end in a dilated cul-de-sac, while the lower opens above into the posterior wall of the trachea immediately above the bifurcation. The history of the case is as follows.

The patient, a full-term female child of 7½ pounds in weight, was admitted to the London Hospital a few hours after birth the subject of imperforate anus. There were no other external abnormalities. The child was operated on but the rectum could not be found. The patient died 22 hours after birth. She was the tenth child and, with the exception of a short umbilical cord which delayed delivery, the birth was natural. The preceding child was described

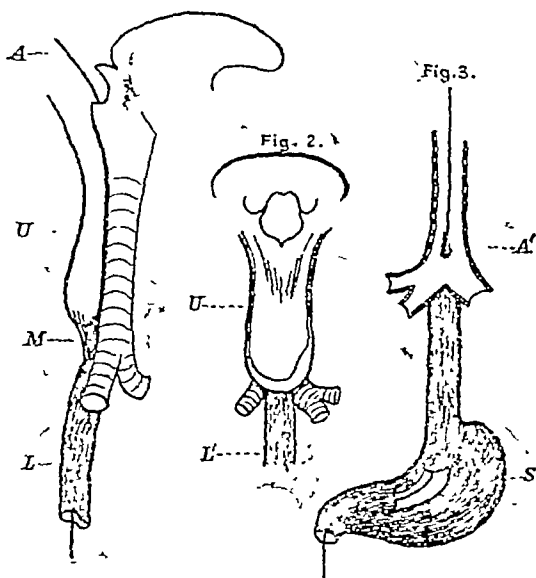


Fig. 1. Side view.—A, Probe inserted in the larynx passing through the trachea into the oesophagus. U, Upper end of the oesophagus, ending in cul-de-sac. M, Band of muscle fibres and no communicating passage. L, Lower end of the oesophagus.

Fig. 2. Back view.—U, Upper end of the oesophagus, ending in a cul-de-sac. L, Lower end of the oesophagus opening above into the trachea.

Fig. 3. Front view.—A, Opening of the oesophagus into the trachea. S, Stomach.

by the mother as having been a "blue baby with a hole in its heart" which only lived four hours. Previously to this there had been a miscarriage but the rest of the children are alive and well. There is no apparent abnormality in any of them and the parents are perfectly healthy. One maldevelopment-alone is known among the collateral branches

the latter hypothesis as the conclusion most in accord with available evidence, it seems reasonable to suppose that these changes represent an attempt on the part of the parathyroids to supply the deficiency of colloid left by the atrophy of the thyroid itself. The increase of connective tissue, though not excessive, was considerably more marked than I have seen in any other human gland or, with one exception,² in the parathyroid of any mammal or bird. Although five of the six parathyroids were directly continuous with the fibrous capsule of the thyroid, this factor alone will not account for the alterations in the former, because the sixth parathyroid, which lay inferior to the main gland, was quite as affected as its fellows. I look on the increase of fibrous material as pathological, in which case it must be regarded as an early stage of the fibrosis, which had reached so advanced a condition in the thyroid.

In brief, these changes show that the parathyroids have been stimulated to supply in part the want of colloid, but that at the time of death they were being overtaken by the same fibroid degeneration as had destroyed the thyroid.

Harley-street, W.

PYLORIC STENOSIS AND THE CONDITION OF THE PYLORUS DURING LIFE.

BY C. W. MANSELL MOULLIN, M.D. OXON.,
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NON-MALIGNANT stricture of the pylorus may be caused by the contraction of a scar left by an ulcer that has healed or it may arise independently, without any evidence of ulceration or inflammation, from what appears to be fibroid degeneration of the circular muscle that surrounds it. With the former of these I am not concerned at present. The latter, however, I have met with so often of late that unless I have happened to have come across one of those exceptional series of cases which sometimes occur to everyone I cannot help thinking that it is much more common, and therefore more important, than is usually believed.

Before proceeding further, however, it is necessary to define what constitutes a stricture of the pylorus and to form some idea as to what may be the real size and the distensibility of the opening during life. With this object in view, for some time past whenever I have had occasion to open the abdomen for the purpose of operating upon the stomach I have made it a practice to examine the pylorus as thoroughly as I could. The description in the ordinary textbooks is no doubt accurate, so far as it goes, but it is founded on the examination of cases after death and it is reasonable to think that the condition post mortem, no matter how soon the examination is made, is not the same that it is during life. The circumstances are not the same. Not only have the changes that set in post mortem to be taken into consideration but there is the loss of the tonic contraction which is present during life and which does not entirely disappear from involuntary muscles, even when the reflexes are abolished. All cases in which there was obvious disease, such as ulceration or a cicatrix or malignant growth, either at the pylorus or close to it, were placed upon one side and only those recorded in which the pylorus appeared to present no gross change. The patients were under complete anaesthesia, with the voluntary muscles of the abdomen relaxed, and the stomach had been emptied in all of them.

The method adopted was naturally not a very elaborate one. The pylorus in each case was carefully felt from the outside to ascertain if there was any hardness or irregularity, and then while it was fixed with the left hand the index finger of the right was made to invaginate the wall of the stomach some way off and was pressed against, or where it was possible without using undue force pushed into, the pylorus. In this way a rough idea could be formed of the size of the opening (under these conditions) and the degree of resistance which it presented. In those cases in which the stomach was opened the examination was afterwards completed with the finger in the interior.

Under ordinary conditions the site of the pylorus is marked by a narrow transverse groove, slightly paler in colour than the rest. The pylorus itself is firm, almost hard

to the touch, the line of transition being more sharply marked on the intestinal side than on that of the stomach. When grasped between the finger and thumb it often gives the sensation of being nodular and irregular even when there is no disease. This is probably due to irregular muscular contraction, perhaps caused by exposure or by the examination, for it is much less distinct when the finger is passed into the opening. From the interior of the stomach the pylorus feels like a round opening with well-defined edges which just admits the tip of the forefinger. So long as it is normal it yields readily to pressure and there is no difficulty in making the finger, with the wall of the stomach covering it, enter sufficiently far to make sure that the opening is free and soft.

Leaving on one side all cases in which there was some gross lesion, I found that the size of the pylorus varied from that of a channel which could easily admit three fingers with the invaginated wall of the stomach around them to that of a tiny orifice which could scarcely be felt. The former was in a patient who was suffering from general enteroptosis. Probably this extreme dilatation was due to the same cause which produced the enteroptosis. The pylorus was indefinite that it was difficult to find. The sphincter could scarcely be felt, and the stomach and intestine seemed to form one continuous canal without a break. The latter was undoubtedly a case of stenosis, as the muscular coat of the stomach was in a state of hypertrophy, and the stomach during life had been seen and felt to contract through the abdominal wall; but there was no evidence of any scar, and the pylorus, when felt from the outside, did not present any marked degree of irregularity. Between the two I have met with every grade.

The degree of distensibility was no less variable. Normally the muscular tone of the pylorus yields at once to gentle pressure. But in many of these, even in those in which the orifice was not exceptionally small, the pylorus was so hard and rigid that though it might have been torn it would not stretch. When examined from the serous surface there was nothing obviously wrong. The pylorus appeared to be firm, but it was uniform and not particularly enlarged or contracted. On trying, however, to press the finger into it, it resisted in such a fashion as to leave no doubt that, though there was no evidence of a scar or old ulcer, it was the seat of fibrous stricture.

I have recently met with no less than seven cases, all with a strong family resemblance to each other, in which the hardness and rigidity of the opening were such as to merit the title of stricture and in which there was no sign of a scar. The size varied. In one the opening could not be felt at all. On inspection from the interior it was so small that it would scarcely admit a probe. In the others the diameter appeared to range from an eighth to a quarter of an inch but in all alike it was absolutely rigid. When the finger was pressed against it, it was a circular opening in a tensile membrane and it would not yield to any reasonable degree of force. There were no adhesions, nor was there any thickening of the peritoneal covering or any other evidence of inflammation or ulceration. It simply seemed as if the circular muscular fibre had disappeared and had been replaced by tough and unyielding fibrous tissue. In one in which the opening was very small, the walls of the stomach were considerably thickened and the size of the organ appeared to be about the normal. In the others the stomach was distinctly enlarged and the walls did not appear to be materially changed. I do not attach much importance to this, however, as it is very difficult to judge of the thickness of the walls, and it is not unreasonable to think that both the size of the stomach and the apparent thickness of its walls may be considerably influenced by the condition of the patient and of the stomach immediately before the administration of the anaesthetic.

Six of these patients were women; one was a man. All had been sent to me with the diagnosis of suspected gastric ulcer. In each the chief symptom had been epigastric pain, more or less gripping in character, coming on some time after food was taken, not immediately, and continuing for hours with varying severity. It was due, no doubt, to stomachic colic, as in one or two the contraction of the stomach could be seen or felt to coincide with the waves of pain. Emptying the stomach always gave relief, but vomiting was not an early or a prominent symptom unless the patient induced it voluntarily. Superficial tenderness was present in all in the upper epigastric region. Deep tenderness was either absent or very ill defined. In five there had never been

² That of a Malayan bear.

a few outlying patches being present and these not more than one inch from the main mass. The fat around the left kidney showed areas of fat necrosis and this was most marked behind the organ. The pancreas was very large and contained numerous hæmorrhages. The tail of the pancreas appeared normal. Many of the veins in the pancreas were thrombosed. No calculi were found and the pancreatic duct could not be properly dissected out. The tissues around the head of the pancreas, and especially behind it, were infiltrated with blood. The common bile-duct was patent and there were no gall-stones. The stomach contained blood.

CASE 3. *Acute hæmorrhagic pancreatitis*.—Total duration of illness, four days; operation 36 hours before death. The peritoneum contained three ounces of blood-stained fluid. There were small spots of fat necrosis in the mesentery and also in the subperitoneal fat in the anterior abdominal wall. There were large masses of fat necrosis in the fat around the pancreas and in the ascending mesocolon. Small hæmorrhages were present in the fat around the pancreas and at the root of the mesentery. The pancreas was very large and formed a large mass extending across the abdomen. There were hæmorrhages on its surface and on section there was seen to be a considerable amount of hæmorrhage into its substance. There were opaque yellow patches of fat necrosis. The tail of the organ appeared healthy. There was no thrombosis of the veins and the duct of Wirsung was normal and did not contain calculi. There was a considerable amount of fat necrosis around the head of the pancreas and also in the peri-renal fat. There were no gall-stones and the common bile-duct was patent.

CASE 4. *Subacute pancreatitis*.—Duration of illness, between three and four weeks; attacks of abdominal pain for two years; operation two days before death. About two feet of the small intestines were very dark in colour and looked gangrenous. The mesentery of this portion was swollen and engorged with blood. The gangrene of the bowel was due to thrombosis of a large branch of the superior mesenteric vein, produced by an extension of the inflammation around the pancreas. There was no fat necrosis under the peritoneum of the larger sac, but there were large areas in the subperitoneal fat over the pancreas. The head of the pancreas was greatly swollen and somewhat hardened and the fat around was very fibrous. There were some small hæmorrhages in the organ and large areas of fat necrosis were present. There were no large gangrenous portions. The blood in the portal vein was fluid, but there was a thrombus on one side of the lumen which had spread up from below. The gall-bladder had been opened by an operation previously and its walls had contracted down and were thickened. The common bile duct was patent.

CASE 5. *Subacute pancreatitis*.—Duration of illness about three weeks; operation eight days before death. A large amount of fat necrosis had occurred in the edges of the laparotomy wound. There was a little blood-stained fluid in the peritoneum. Numerous areas of fat necrosis were seen all over the peritoneum and some of them were situated very deeply in the subperitoneal fat. They varied in size from that of a pin's head to that of a pea. The spots were most numerous in the great omentum and around the spleen; there were very few in the mesentery of the small intestines. There were large masses in the fat around the kidneys and also small foci in the fat behind the sigmoid flexure and in front of the psoas muscle. There was a large tumour in the region of the pancreas; on cutting through the peritoneum over it a thick fluid exuded which had the appearance and consistency of anchovy sauce. There was a considerable amount of fat necrosis around the pancreas, especially at its tail. At the surgical operation an opening had been made into the fat necrosis below the pancreas and another into the head of the organ. A small portion of the head of the pancreas was gangrenous, while the tail showed the normal lobulation. There were hæmorrhages in the organ around the gangrenous portion. The pancreatic duct was not found and a probe could not be passed into it from the duodenum. There were no calculi. Numerous small points of fat necrosis were found under the parietal pleura on the left side. They were situated on the posterior and lateral aspects of the pleura and in its lower half; none were in front of the anterior axillary line.

CASE 6. *Gangrenous pancreatitis*.—Duration of illness between six and seven weeks; operation three weeks before death. There was suppurative peritonitis, with numerous points of fat necrosis. These were most marked in the great

omentum, varying in size, some being as large as a split pea. The fat necrosis was also seen in the mesentery and in the subperitoneal fat of the abdominal wall. There were no deeply situated areas of necrosis in the subperitoneal fat. All the pancreas was gangrenous except for a small portion at the tail. There was an abscess around the head of the pancreas and in it were large masses of necrosed pancreatic tissue. A considerable amount of fat necrosis had occurred in the fat around the pancreas. In some places there were large masses of it. A probe could not be passed into the pancreatic duct. The gall-bladder was considerably distended and a probe could not be passed from the gall-bladder into the common bile-duct; the latter had been in contact with the abscess and had probably been obstructed by inflammatory changes.

CASE 7. *Fat necrosis after hydrochloric acid poisoning*.—The patient, a man, aged 45 years, was admitted into the General Hospital, Birmingham, in November, 1905, for hydrochloric acid poisoning, under the care of Dr. R. Saundby. On admission the man was very collapsed and died within 24 hours. He was apparently quite well before taking the corrosive poison. At the post-mortem examination there were no signs of corrosion around the lips and no stains or burns on the face. There was no corrosion of the tongue and fauces. Throughout the entire length of the oesophagus there were greyish patches on the mucous membrane. In the stomach the corrosion was extensive and deep. There was charring along the ridges, but there was no perforation. The peritoneum over the stomach was injected. There were acute inflammatory changes in the duodenum and for about the first 12 inches of the jejunum. The pancreas seemed to be normal in size and showed the usual lobulation. There were large areas of fat necrosis on the surface of the pancreas and also in its substance. There was no fat necrosis beyond the region of the pancreas. The pancreatic duct was obstructed by the inflammatory changes. The gall-bladder and common bile-duct were normal. The microscopical examination of the necrotic areas showed that the adipose tissue was replaced by a granular mass, which stained yellow with picric-fuchsin. There were no inflammatory changes around the fat necrosis. The pancreas itself appeared normal.

CASE 8. *Fat necrosis in a case of mitral disease*.—The patient, a female, aged 15 years, was admitted to the General Hospital, Birmingham, in August, 1906, for heart disease and was under the care of Dr. J. W. Russell. There was nothing in the history of the symptoms of the malady which made it appear any different from an ordinary case of mitral disease with failure of compensation. At the post-mortem examination it was noticed that there were general oedema and a slight tinge of jaundice. The heart showed extensive mitral disease, with vegetations on the valve and thickened chordæ tendineæ. The left ventricle was dilated and there was marked fatty degeneration of the cardiac muscle. The pericardium was adherent all over the heart. The peritoneum contained 25 ounces of clear fluid. There were many infarcts in the kidneys and spleen; some of them were old, but many were quite recent. There were many small spots of fat necrosis to be seen on the surface of the pancreas and also a few in the substance of the organ. There were a few points of fat necrosis in the root of the mesentery. The pancreatic duct appeared patent. There were no calculi. The liver showed passive hyperæmia and the gall-bladder was distended. The microscopical examination of the pancreas showed that the areas of fat necrosis were similar to those found in the cases of pancreatitis described in this paper. There were small portions of necrosis of the glandular tissue, but no thrombosis of vessels could be made out.

On two occasions I have attempted to make a chemical analysis of the patches of fat necrosis and have found it very difficult. In Case 5, however, an analysis was made by Mr. J. A. Barnes, B.Sc., A.I.C., and the following is his report: "There is no adipocere present and the spots consist of the calcium salts of a mixture of fatty acids, superlatted. There is no glycerine, leucine, tyrosine, or any other amido-acid present; consequently they are not due to proteid decomposition. The composition of the fatty acids I have been unable to determine on account of the small quantity of material at my disposal."

In only one case was a bacteriological examination of the fat necrotic patches made by culture. The examination was performed with great care and these areas were found to be

of the family; the father's brother has a child with congenital talipes.

On post-mortem examination the following points were noted, besides what has already been described:—1. The right side of the heart was very much larger than the left, and the right auricle was hypertrophied and dilated. 2. No trace of septa in the foramen ovale. 3. The veins from the right lung opened into the left auricle so close to the patent foramen ovale that a large part of the blood probably entered directly into the right auricle. 4. Right and left superior vena cava. 5. No right aortic arch (this was present in the two previous cases). 6. The left ureter showed the presence of a well-marked constriction immediately below the pelvis. 7. Imperforate anus, but the sigmoid well developed. 8. The lungs, intestines, and other organs normal.

It may be interesting to add here, in connexion with this maldevelopment of the oesophagus, that in our earlier cases the children lived respectively six and nine days.

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SOME OBSERVATIONS ON FAT NECROSIS.

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DURING two years as pathologist to the General Hospital, Birmingham, I performed eight post-mortem examinations in which fat necrosis had occurred. As probably few medical men can have had the opportunity of observing on so many occasions this interesting condition it seems to me desirable to describe the appearances which were found and to record the results of the microscopical, chemical, and bacteriological examinations which were made in these cases. Three of the cases mentioned in this paper have been published already in various medical journals and they are included in the following list:—

Case.	Age.	Sex.	Disease.	Under the care of—	Where published.	Date of death.
1	43	F.	Acute hæmorrhagic pancreatitis.	Mr. F. Barnes.	Queen's Medical Magazine, vol. ix., p. 72.	August, 1905.
2	41	M.	"	Mr. G. Heaton.	"	May, 1905.
3	48	M.	"	"	British Medical Journal, vol. ii., 1934, p. 1637.	October, 1904.
4	47	M.	Subacute pancreatitis.	Mr. H. G. Barling.	"	February, 1906.
5	54	F.	"	"	"	June, 1906.
6	59 (P)	M.	Gangrenous pancreatitis.	"	British Medical Journal, vol. i., 1905, p. 438.	October, 1905.
7	45	M.	Hydrochloric acid poisoning.	Dr. R. Saundby.	"	November, 1905.
8	15	F.	Mitral disease.	Dr. J. W. Russell.	"	August, 1906.

Fat necrosis is generally considered to be the result of the action of the fat-splitting ferment of the pancreas upon living adipose tissue. The fat in the cells is split up into fatty acids and glycerine by the action of the ferment; the glycerine is absorbed and the fatty acids which remain combine with the calcium salts and so form a soap. The fat-necrotic areas vary in appearance according to their situation. When they lie just under the peritoneum they appear as small round white spots which are from two to five millimetres in diameter. These are the characteristic spots which are seen when a laparotomy is performed by the surgeon. The spots are rarely larger than the size mentioned above, but masses of fat necrosis are often found which consist of many of these areas situated so close together that they are in apposition. The points of necrosis under the peritoneum are never raised above the surface but can just be felt when the finger is passed over them because they are of firmer consistence than the tissues in which they are situated. They are dull white in colour, but sometimes

they are light yellow at the post-mortem examination from being stained with bile. These small spots appear under the peritoneum and sometimes under the parietal pleura and the parietal serous membrane of the pericardium. If one of these spots just under the peritoneum be cut in half it is seen that the whole of the affected portion is of the shape of a split pea, with the flat surface towards the peritoneum. When the spots are situated deeper in the subperitoneal fat they are usually spherical in shape but about the same as to size except when the fat necrosis is in the retro-peritoneal tissue. In the great omentum there were only these small spots and no large masses in my series. The peritoneum over the stomach may also be affected, but it is uncommon to find the necrotic areas over the small intestines, although over the large intestines they are frequently present. In the root of the mesentery and in the subperitoneal fat over the pancreas and the kidneys there are seen large masses of fat necrosis which seem often to have been formed by the direct spreading of the necrotic changes from the pancreas into the tissues around. Sometimes these large masses seem to be the result of small areas of fat necrosis situated close together. In the pancreas there is commonly seen fat necrosis in the interstitial tissue of the organ. The fat necrosis is often present in large masses in the fat behind the kidneys and pancreas and may be found anywhere in the retro-peritoneal fat.

The ages of the patients in the first five of my series is a point worthy of notice. The ages of those suffering from acute hæmorrhagic and subacute pancreatitis ranged from 41 to 54 years, and their ages correspond with what is generally recognised to be the usual time of life in which these diseases of the pancreas occur. Case 6 was stated to be 59 years old, but when seen by me he did not appear to be more than 45 years, so that there may have been a mistake in the record of his age.

It is a very remarkable fact that in the last two cases of my series the fat necrosis was not found associated with any primary disease of the pancreas, but occurred as a result of hydrochloric acid poisoning in one case and in mitral disease in the other.

I do not propose to give a complete account of all the eight cases but only to describe the distribution and the appearance of the fat necrosis and the changes which were found in the pancreas at the post-mortem examinations.

CASE 1. *Acute hæmorrhagic pancreatitis.*—Total duration of the illness, seven days; operation on the second day. The peritoneum was quite dry. There were points of fat necrosis in the subperitoneal fat all over the abdomen. These varied in size from that of a pin's head to that of a pea. Some were stained with bile and had a bright canary-yellow colour. The fat-necrotic areas were situated not only under the peritoneum but also deeply in the subperitoneal fat. These areas were most numerous in the subperitoneal fat lining the anterior abdominal wall and in the great omentum. There were very few in the mesentery of the small intestines and none over the intestines themselves. The peritoneum was swollen and easily stripped off the intestines. In the lesser sac and in connexion with the tail of the pancreas there was a cyst which contained a fluid having the appearance of water. The fluid had a slightly proteolytic action and a markedly amyolytic action. It curdled milk and had a fat-splitting ferment. There were large masses of fat necrosis around the pancreas and also small points in the substance of the organ. Portions of the pancreas looked quite healthy and had their normal lobulation, while other portions were disintegrated and hæmorrhage had occurred in them. No calculi and no obstruction to the pancreatic duct were found. Some of the veins were thrombosed. The common bile-duct was patent. In the parietal pleura on the left side there was a small area of about the size of a shilling in which there were a few points of fat necrosis. It was situated over the vertebral column and just above the attachment of the diaphragm and below the level of the lung.

CASE 2. *Acute hæmorrhagic pancreatitis.*—There was a little blood-stained fluid in the pelvis. Large masses of fat necrosis were present at the root of the mesentery and two small patches in the great omentum. There was no fat necrosis under the parietal peritoneum. Fat-necrotic areas were also found in the transverse mesocolon and in the lesser omentum. There was a considerable amount of fat necrosis in and around the pancreas. The fat necrosis seemed to commence around the pancreas and to radiate from it in the subperitoneal fat, only

nystagmus became much more marked and a decided intention tremor appeared on the right side only, with right-sided patellar and ankle clonus. A very brisk jaw-jerk was obtainable at this time and her speech became altered. For six weeks after this attack she was confined to bed owing to weakness of the right leg. There was a considerable amount of fluid effusion in both the right knee and ankle-joints, which were, however, painless. Incontinence of urine first commenced at this time, intermittently at first but later becoming complete. While in bed during this six weeks the temperature varied up to 102.4° F., and on several occasions there was a difference of four degrees in 12 hours. An interesting feature at this time was the presence of an urticarial rash which extended all over the body, varying in distribution and degree from hour to hour; it lasted off and on for three months and towards the end of February clear bullæ appeared which, broken, left clean, raw, moist surfaces. They developed chiefly on the hands and feet. The only drugs she was using at this time were simple aperients and occasionally small doses of bromides. Whether the urticarial and bullous condition should be attributed to these or to abnormal vaso-motor changes dependent on her disease I do not know. In following April she improved and was allowed out of bed; she gradually gained strength in the right leg until she was able to get from the bed to the chair unassisted. Her speech that month became much worse and very rigid, but could hardly be described as "staccato." At the end of April another seizure occurred, preceded by a fall of temperature. Twitching commenced in the right side of the face and the right arm and leg; speech became unintelligible and wandering and the patient gradually passed into a semi-comatose condition, with clonic spasm of the right arm and leg, which lasted for several days but gradually disappeared with return of consciousness. The pupils varied in size, continually altering from hour to hour, one visit the right being the larger, at the next the left. Intention nystagmus at that period was a constant feature. On the return of consciousness after this attack she was found to be suffering from complete motor aphasia. Sensory hemiparesis was either absent or slight and transient, for within four days from the return of consciousness she could comprehend what was said to her, but it was some days later before she could herself speak, and then for a time she only answered "Yes" to questions put to her, but she would do anything she was told to. Her speech gradually improved and it was then found that there were hyperæsthesia of the right leg and almost complete anaesthesia and analgesia of the left which persisted for many months. Incontinence of urine was continual and in May cystitis appeared but readily yielded to treatment.

In the following September the condition had improved so much that I find a note to the effect that she was out of bed again and having her meals with her friends in the dining-room, to which she had walked with the assistance of both her nurses. Her writing was shaky but clear; she took an intelligent interest in the illustrated papers and played "Patience," of which she was very fond. At the end of October, after another attack, she became bedridden and her symptoms increased in severity. Speech became so bad as to be unintelligible; nystagmus was always present, the spasticity of the legs became worse, and contractures developed. Intention tremor was so marked that she had to be fed and the incontinence of both urine and faeces gradually became complete.

From October, 1903, to March, 1905, numerous attacks of a similar apoplectic nature occurred, after each of which she passed into a comatose state with Cheyne-Stokes respiration for some days. In March, after an attack she became speechless, but noisy, and appeared to be in pain. After several days a large ischio-rectal abscess was discovered and opened. In April she became very lethargic and could not be made to understand anything said to her. She understood, however, to a certain extent, what was going on around her, and would, for instance, help her nurses when washing her. The next month, notwithstanding excellent nursing and a water-bed, a large bed-sore formed on the left hip, followed by an abscess of the buttock, which necessitated very extensive opening and draining with tubes. At that time, too, numerous crepitations were found at the bases of both lungs; and the respiration rate was frequently 30 per minute. The abscess slowly healed and the chest signs disappeared, but from June, 1905, onward, the girl never regained consciousness, hardly ever moving in bed.

During the last 18 months of life it was only with great difficulty and with the occasional help of a nasal tube that her food, which consisted of milk, meat juice, &c., could be given her. She simply lay in bed on her back with her hips and knees flexed and rotated to the right side, her arms flexed and pressed so tightly on her chest as to necessitate her thorax being protected with Gamgee tissue to prevent pressure ulcers. Her legs showed marked emaciation and wasting of muscles, but the rest of her body, with the exception of the hands, remained fairly nourished. In the hands atrophy appeared first in the thenar and hypothenar eminences, and then extended to the interossei; fibrillary contractions were constantly present in the forearm muscles. The tongue, too, showed signs of atrophy. The reflexes slowly disappeared, both superficial and deep, until even the corneal reflex could not be elicited. The pupils towards the end became small and equal, but they always reacted to light. The apoplectic attacks continued and became even more severe in character, leaving the patient collapsed, pulseless at the wrist, and cyanosed; they were almost always preceded by a fall in temperature, so that the nurses were able to predict the occurrence of a fit. These attacks were followed by twitchings and spasms chiefly of the right arm and leg, so severe as to shake the bed. These would continue for hours and were accompanied at intervals by a short, sharp, piercing cry which could only be compared with the meningial cry. They were, to a certain extent, controlled by hypodermic injections of morphine, which had to be given in increasing doses. I am inclined to think that the morphine diminished the number of the attacks. Bromides, even in large doses, had no effect.

Respiration for many months was of the Cheyne-Stokes type, and, at the height of the cycle, when respirations were most active, she frequently uttered this cry, at times so loudly as to provoke complaints from the tenants in the neighbouring flats. The pulse was usually rapid and irregular and at times was imperceptible at the wrist. After the subsidence of an attack, cyanosis, coldness, weak respiration, and feeble cardiac action were so marked that death was often thought to be imminent, and when, after a series of fits lasting for 48 hours, with a gradual rise of temperature to 106°, death did occur on Sept. 5th, 1906, the patient looked no worse than she had done on previous occasions.

The sequence of the classical symptoms of this disease was remarkable, as was also the temperature, which was never what could be considered normal for longer than 24 hours, from February, 1903, to September, 1906. The apoplectic attacks were exactly like true apoplexy, followed by right-sided hemiplegia, and, at first, speech disturbance, but the paralysis was transitory. No post-mortem examination could be obtained.

Holland Park Avenue, W.

DYPHTHERITIC MEMBRANE INVOLVING THE PHARYNX, OESOPHAGUS, AND RESPIRATORY PASSAGES.

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INVASION of the oesophagus by diphtheritic membrane seldom occurs even when there is extensive involvement of the pharynx or respiratory passages. Holt reported on 109 cases of diphtheria and Lennox Browne on 1000 in which there is no mention of membrane in the oesophagus. Codrillman, Malloy, and Pearce have placed on record 12 cases out of 220 examined post mortem in which the oesophagus was part of a general involvement, and Sir Morell Mackenzie mentions cases recorded by other writers and two cases coming under his own observation. The only recent cases of membrane extending to and involving the oesophagus are those recorded by Dr. E. W. Goodall,¹ Dr. E. Cautley,² and Dr. John Fawcett.³

A man, aged 37 years, was admitted to the North-Western Fever Hospital, Hampstead, on the evening of Oct. 9th, 1906, complaining of headache and sore throat. He had had

¹ Transactions of the Pathological Society of London, vol. xlii.

² Reports of the Society for the Study of Diseases in Children, 1902-03, vol. iii.

³ Transactions of the Pathological Society of London, vol. lvi.

sterile. Microscopical sections of the areas in other cases never showed any micro-organisms. In some of the cases bacteriological examinations of the fluids from the cysts, of the peritoneum, and of the pancreas were attempted. The bacillus coli communis was invariably found, together with other micro-organisms, but the examination presented so many difficulties that it was not pursued further.

Microscopical examination of the areas of fat necrosis showed that the adipose tissue was simply replaced by a granular material which coloured deeply with various stains. The outline of the cells in which the fat had undergone the necrotic change could easily be made out. There were no inflammatory changes seen around the areas and no micro-organisms were ever found. The microscopical appearance presented in the pancreas varied considerably in different portions of the same gland. In places the organ was quite disorganised and no glandular structure could be made out. Some areas of necrotic parenchymatous tissue were seen, some large and others very small. In other places the pancreas appeared quite normal or only showed cloudy swelling, while in others there were acute inflammatory changes in the interstitial tissue. Numerous small hæmorrhages were constantly present.

From a study of the foregoing cases it appears that in some the fat necrosis was more abundant near and around the pancreas than anywhere else. This suggests that the fat necrosis commenced in the immediate neighbourhood of the gland and was the result of the leakage of the pancreatic secretion into the tissues around. That this occurred is supported by the fact that large masses of fat necrosis were often found behind the pancreas and around the kidneys. As a result of disease of the pancreas the fat-splitting ferment may escape directly into the neighbouring tissues, as is suggested above. It may, however, be carried there by the lymphatics. Probably both means of distributing the ferment occur. In other cases the distribution of the points of necrosis all over the peritoneum indicates that the pancreatic juice has escaped into the general peritoneal cavity and that it has acted upon the subperitoneal fat, possibly by gaining access to it through the stomata. Microscopical examination, however, has not demonstrated that stomata are to be found over fat necrotic areas. Fat necrosis was found in Case 5 in the edges of the laparotomy wound and this was without doubt caused by the ferment in the general peritoneal cavity, escaping from it rather than that the ferment was carried to the wound by the lymphatics. It is easy to understand how the fat-splitting ferment may escape into the tissues, around the pancreas and even into the peritoneal cavity when there is destruction of the gland, as in acute hæmorrhagic, subacute, and gangrenous pancreatitis. So also may it escape in disorganisation of the pancreas by the action of a corrosive poison. But it is difficult to explain this escape in a case of heart disease. Even in Case 7, in which the necrosis followed hydrochloric acid poisoning, there seemed to be very little, if any, damage of the pancreas. It does not seem possible for the escape of the fat-splitting ferment to be produced by simple catarrhal obstruction of the pancreatic duct, for otherwise fat necrosis would occur very much more frequently than is the case. In catarrhal jaundice there would be reason to expect an obstruction in the pancreatic duct as well as in the common bile duct, but it is obvious that if this occur the fat-splitting ferment cannot be commonly absorbed by the lymphatics, as the bile is in obstruction of the common bile duct, for otherwise fat necrosis would be a much more usual event in practice. To produce fat necrosis it seems therefore that something more is required than merely obstruction in the pancreatic duct; it seems that some destruction of the pancreatic tissue is also necessary.

In Case 7 the fat necrosis was probably due to the damage or injury of the pancreas by the corrosive poison, although any change in the organ was not very obvious, and not to the obstruction in the pancreatic duct, although such obstruction may have contributed to the escape of the fat-splitting ferment. In Case 8 there may have been some catarrhal obstruction of the pancreatic duct as there was slight jaundice. Small areas of necrosis of the parenchymatous tissue of the pancreas, however, could be demonstrated. It is hardly possible that the fat necrosis which was found in the pancreas was merely a post-mortem change. The explanation of the presence of fat necrosis in this case would seem to be that multiple emboli had occurred and produced necrosis of the parenchymatous tissue of the pancreas with a subsequent escape of the fat-splitting ferment.

Although some destruction of the pancreatic tissue seems to be a necessary factor in the production of fat necrosis, yet in cases of extensive disease of the pancreas fat necrosis does not always occur, as was shown by a case on which I performed a post-mortem examination for Mr. L. P. Gamgee in October, 1904. The patient was aged 32 years, and there was an abscess in the head of the pancreas containing three ounces of thick pus. He had received a violent blow in the centre of the abdomen from the shaft of a cart, and there is no doubt that the pancreas was injured at the time. A large portion of the pancreas was gangrenous and the case appeared a typical one for the occurrence of fat necrosis, but none was found. The patient died 11 days after the accident.¹

Eppinger² has suggested that the areas of fat necrosis are infarcts arising by the displacement of small portions of pancreatic tissue along the path of the lymphatics and that this tissue contains "activated" pancreatic ferment. There are three points in my cases which seem to oppose this view—namely, (1) the areas of fat necrosis are sometimes seen just under the peritoneum and nowhere else, except in the immediate neighbourhood of the pancreas, indicating that the ferment had escaped into the general peritoneal cavity; (2) the fat necrosis was observed in the edges of a laparotomy wound; and (3) the radiating appearance of the fat necrosis in one of the cases seems to point to direct extension from the pancreas.

My thanks are due to Dr. Saundby, Dr. Russell, Mr. Barling, Mr. Heaton, Mr. Gamgee, and Mr. Barnes for their kind permission to make use of their cases in this paper.

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NOTES ON A CASE OF DISSEMINATED SCLEROSIS.

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DISSEMINATED sclerosis is frequently seen in its early stages at the hospitals and in its later stages in the infirmaries but is comparatively rarely seen in private practice throughout its whole course by the same observer; hence I venture to publish the following brief notes of a case which I had under my care from a very early stage up to the patient's death. In the course of her illness she showed a great many of the symptoms accredited to this disease and some which I have not been able to find described.

Early in November, 1902, I was called one evening to see a girl in a "nervous fit." The patient, aged 20 years, had a bad family history, being the illegitimate daughter of a man who had undoubtedly had syphilis and who died, when the girl was 16 years old, from general paralysis of the insane, and of a woman who was a dipsomaniac. Her previous history showed nothing of importance, except that her education had been somewhat neglected. Her father left her well provided for. She herself was a girl of medium height, rather inclined to be fat, and fairly intelligent; she had been suffering from attacks of giddiness, which had culminated in the fit for which I was called. When I arrived the fit was just over. The girl was lying on a bed complaining of having fallen and bruised her leg; she was rather excited and showed no signs of any disease other than slight lateral nystagmus and increased reflexes of the legs which led me to make a provisional diagnosis of disseminated sclerosis. A few days later, after using a mydriatic, I found that both optic discs were distinctly pale on the temporal side. There was also marked dorsiflexion of the great toes in response to plantar stimulation. From this time until her death in September, 1906, I saw her constantly, the symptoms being progressive.

The patient was quite intolerant of iodides, so late in December, 1902, mercurial inunction was tried for two months. In February, 1903, without any warning she was suddenly sick and had an apoplectic seizure. She had conjugate deviation of the head and eyes to the right, her pupils were dilated, her face was flushed, and she had stertorous breathing. In this condition she was carried to bed where she remained unconscious for some hours, not responding to any external stimuli. After this attack the

¹ Brit. Med. Jour., vol. 11, 1904, p. 1637.

² Zeitschrift für Experimentelle Pathologie und Therapie, Band 11, Heft 2.

doubt, by a delay in applying to a superior authority at once, be it a senior or better-informed man or a clinical research laboratory. Never, however, must what another has done be given as direct evidence in a court of law. Thus, in 1902, Sir Thomas Stevenson was stopped at the Central Criminal Court, when he wished to testify as to the results of some toxicological examinations which his laboratory assistant had made. Sir William Jenner's advice is pertinent in this connexion: "Never believe what a patient says another doctor said." It is a presumption of the law that all "qualified medical practitioners" are competent professional advisers; this to some extent explains the attitude of the public to differences of medical men, medical men's dilemmas, and dubious diagnoses. Medical witnesses should be continually mindful of the fact that counsel will probe what they have omitted to do. An authority, so-called expert, would be less likely to quail before such questionings, but there are some matters in which the only expert, or at least the most expert, is the prisoner standing in the dock. Such a person, with malice aforethought, may have confused, fictitiously and factitiously, the differential signs usually indicative of murder, suicide, or accidental death. Our medical forefathers, innocent alike of morbid anatomy and of analytical chemistry, were safe only because counsel were, if possible, still more ignorant. Sir Robert Christison in 1857 was made to withdraw an emphatic statement as to the tastelessness of white arsenic when a junior counsel confronted him with a new edition of Orfila. In studying the old records which bear upon legal medicine many annoying omissions are met with. The depositions in the State trials concerning the birth of the son of King James II.'s wife are not full enough to tell us if he was born alive or born dead; in other words, whether the Old Pretender was supposititious or not (1688). The records of the sudden death of Sir Edmund Bury Godfrey still leave it a subject for discussion whether he was murdered or he slew himself (1678).² The recurrence of the inquest jury's verdict after a view of the body, "*Morbus caducus*," is far too frequent to be definite. Such vagueness, at a later date, led Dr. Farr to advise coroners to be more precise (1842, Fourth Report).

Certain facts of common knowledge are supposed to be admitted in court as "being in the ordinary course of nature" or as being within the judge's memory. An obsolescent limitation to medical evidence may arise, however, from the incredulity of the Bench, as where in 1857 Lord Chief Justice Cockburn discredited the testimony offered from microscopic signs; at times a similar incredulity as to newly discovered facts has been exhibited when specialists have given evidence before Royal commissions—an example being the alleged rate at which railway trains would run.

Occasionally evidence is demanded which appears to be beyond what current medical teaching demands; thus the London County Council (Education) Public Health Authority wishes to insist on a certificate that the throat of a child who has been exposed to infection is bacteriologically free from diphtheria before the child returns to school. It is a nice point for discussion how far a general medical practitioner can be compelled to give reasons on a certificate for his opinion that a child is "free from infection."

Another relative limitation arises when some restriction is imposed upon the medical witness while, wittingly or unwittingly, he is qualifying to give his evidence. Thus when a full physical examination of a person cannot be obtained, or when consent to conduct a post-mortem examination is withheld, there are several matters which otherwise might be made patent but which will in the circumstances remain obscure. To-day this form of limitation is made less noteworthy as a full physical examination is gradually becoming customary: this applies both to clinical and to post-mortem work. One is reminded in this connexion of Sir William Jenner's aphorism: "More mistakes are made, many more, by not looking than by not knowing." The advice tendered to Roderick Random at Surgeons' Hall, "Give me ocular demonstration," is to a similar effect. I am told by aged practitioners that the modern method of fully exposing the affected part of a patient was not clinical etiquette in their young days, just as it was hardly the thing to remove your coat, even in obstetrical practice, before you set to serious work. As to the need of post-mortem examinations, on several occasions has this society assented to a condemnation of the practice of giving medical certificates as to the cause of death, or of propounding medical testimony in cases

where a necropsy should have been performed but was not permitted.

I should classify occasions where a post-mortem examination is essential under the following heads. 1. A post-mortem examination is necessary to test the truth of an alleged death by drowning. Otherwise, in the absence of eye witnesses of the fatality, the open verdict, "*Found dead in the water*," is the only possible conclusion. 2. A post-mortem examination should be made before an infant is said to have been "*overlain*," otherwise the open verdict, "*Found dead in bed with the parents*," is preferable. Both in alleged drowning cases and in alleged deaths from "*overlying*" when necropsies are allowed by the coroner not uncommonly some unsuspected malady is revealed, more especially relative to the cardio-respiratory system; thus heart disease in the former cases may have led to syncope and "*cramp*," and broncho-pneumonia in the latter cases may have made the infant's vital spark very dim and easily extinguishable by the lack of fresh air under the bed clothing. Foul play may be discovered—it will be recalled that King Ben-Hadad was suffocated by Hazael with a wet coverlet when he was ill in bed. 3. In cases of alleged stillbirth a necropsy will show if the child had probably lived after birth, although in the absence of an eye-witness the mere medical evidence will count for little. Years ago "*that hydrostatic humbug*" was derided. 4. A most important series of cases where necropsy should be demanded is where civil or criminal proceedings may arise out of the death—whether such proceedings may be taken against the advising medical man or some other person. Thus, where a charge of negligent treatment is preferred or where a criminal homicide may have been the cause of death a coroner will nowadays always order the body to be opened. Lastly, certain alternative conditions cannot be differentiated without the aid of some special chemical reagent or instrument—thus, a gastritis may otherwise be confused with incipient decomposition of the gastric mucosa, especially in the case of infants. All such laboratory work must have been personally superintended by the witness, otherwise the man who actually did the experiment must give the evidence.

The second variety of limitation owing to the lack of sufficient medical knowledge is not relative to the medical witness personally, but is a general inability to make a positive declaration owing to the uncertainty, insufficiency, or inconclusiveness of the facts available. Even real authorities in this variety of limitation may have to confess that they do not know certain facts, or will when pressed offer a very guarded opinion. Thus in questions of prognosis the commendable attitude may be illustrated by an aphorism of Dr. Samuel Gee: "There is only one thing certain in giving a prognosis in phthisis—namely, that you will certainly be wrong." Further, in questions of malingering the very elect may be nonplussed, as is witnessed in Dr. Weir Mitchell's "*The Autobiography of a Quack*." The physicians of the early eighteenth century would have difficulty in discovering the fraud of Clarissa Harlowe's lover's hæmoptysis of fowl's blood. A few definite instances of such limitations due to unavoidable ignorance are as follows: 1. The exact age of a living man, woman, child, or infant cannot be determined apart from a birth certificate. The age of a skeleton, after complete ossification, is guess-work. The sex of a very old or a very young person's skeleton cannot be determined. 2. In the absence of foetal heart sounds pregnancy cannot be affirmed until quickening has been felt by an observer or the foetal parts are palpable. Affiliation to a putative parent on account of an alleged personal resemblance is insufficient. Chastity cannot be impugned from an inspection of the hymen. 3. The presence of gonorrhoea cannot be established by microscopical evidence. 4. A small mammalian blood-stain cannot be sworn to be "*human*" unless its origin was witnessed. It has been suggested the analyst might aid by declaring the ratio of potassium to sodium salts. 5. Death seldom can be certified until putrefaction has set in. In the case of a sudden death, it cannot be stated whether an unwitnessed suicide was inflicted immediately before or immediately after the death. 6. That a man was drunk when he died can seldom be substantiated by a post-mortem examination of his body. 7. That an alleged "*uncontrollable impulse*" was not merely an uncontrolled impulse, Baron Bramwell used to say: "By an uncontrollable impulse, I mean, an impulse uncontrollable in the absence of a policeman."

The last variety of limitation is that imposed by the rules

² Law Quarterly Review, October, 1907.

no previous illnesses. His surroundings both at home and at work were good—the patient occupying a good social position. A history of alcoholic excess, extending over many years, was obtained. His illness began on Oct. 5th, when he complained of headache and sore throat. His constitutional symptoms on that day were so slight that he did not think his condition warranted his having medical advice. On the following day (the 6th) the patient suffered from chilliness, and this in addition to his other symptoms necessitated his remaining indoors. On the 7th he had attacks of nausea and vomiting. His throat caused him more discomfort and constitutional disturbance was a marked feature. Two days later (the 9th) he received medical attention and was sent to hospital. His state on admission was as follows. The face and lips were cyanosed and the tongue was coated. The soft palate, uvula, tonsils, and the pillars of the fauces were much swollen. Membrane, thin, friable and fibrinous, covered the uvula, both tonsils, and the posterior pharyngeal wall. The cervical lymph glands were slightly enlarged. The temperature was 101.6°F . and the pulse was 88, small, and irregular. The urine contained a large quantity of albumin. Breathing was difficult and hurried and dulness extended over the lower lobes of both lungs. Swallowing was difficult and painful. During the night of the 9th the patient became restless and delirious. On the following morning he had an attack of vomiting and a tube of membrane was brought up. Breathing, however, was not relieved, but swallowing became less difficult. Later, he became more restless and delirious. His pulse varied from 100 to 120 and became more irregular. Respiration increased in frequency and cyanosis was a marked feature. As regards treatment, the patient was given 2000 units of antitoxin a few hours before admission. And on admission another 10,000 units were injected, followed by 12,000 units 12 hours later. Treatment was altogether useless and he died 24 hours after entering the hospital.

Necropsy.—The body was found to be that of a well-developed and muscular man. Rigor mortis was present in both upper and lower extremities, with well-marked general lividity. The tonsils were swollen and ulcerated, and flakes of membrane were present on both. The laryngo-pharynx was covered with dense, tough, yellowish membrane, and traces of membrane were present along the œsophagus to about three centimetres from the cardiac orifice of the stomach. These scattered areas of membrane on the œsophagus were the remains of the cast passed immediately before death, the cast measuring some three to four inches in length. The epithelium of the œsophagus was necrosed and there was congestion of the mucous surface. Membrane covered the valleculæ, the lingual surface of the epiglottis, and the aryteno-epiglottidean folds. The posterior surface of the epiglottis was injected; but the probability is that the membrane there had loosened after antitoxin treatment. The false and true cords and the laryngeal sinus escaped. Beginning immediately below the true cords the membrane continued downwards, completely lined the trachea and larger bronchi, and extended even to some of the minute bronchi. The left lung weighed $3\frac{1}{2}$ ounces and the right $2\frac{1}{2}$ ounces. Areas of broncho-pneumonia of hæmorrhagic variety were scattered throughout both lobes of the left and the lower lobe of the right lung. Areas of collapse were present in both lungs. The left pleura showed traces of past inflammation. The heart weighed 16 ounces. The right chambers and the tricuspid orifice were markedly dilated. There was slight dilation of the mitral orifice, the left ventricle, and the left auricle. There was considerable loss of tone of the organ, and fatty change was marked. Patches of atheroma were present on the ascending aorta. The liver weighed 58 ounces. There were fine cirrhosis and areas of fatty change throughout the substance of the organ. As regards the spleen the Malpighian corpuscles were greatly enlarged and the pulp was somewhat diffident. Both the kidneys were enlarged. The capsules stripped readily. The glomeruli were enlarged and the venules were dilated. The superficial and interpyramidal cortices were swollen and showed marked fatty change.

Bacteriology.—On admission a swab was taken from the throat and a culture was made on blood serum. The colonies consisted of various varieties of streptococci and staphylococci, but the Klebs-Löffler bacillus was not isolated. A second culture was made from the membrane post mortem and almost a pure growth of the specific bacillus found.

Remarks.—The importance of an early diagnosis in cases of diphtheria cannot be too strongly emphasised. In this

case the patient suffered from the disease five days before his case was diagnosed and before he received suitable treatment. 12 hours after antitoxin was given the œsophageal membrane loosened, but toxæmia was too far advanced to allow of efficacious treatment. It is probable that over-indulgence in alcohol contributed largely in lowering the vitality of the tissues and this diminished resistance, together with the delay in treatment, allowed the specific organisms full scope to work their malign influence. Another feature in this case was that even when the membrane had been observed and diphtheria diagnosed the first culture made from the throat gave a negative result. Similar results have often occurred in my experience and when one considers the importance of an early diagnosis it would seem best that in all cases in which diphtheria is suspected at least two separate swabs should be taken on first examination of the throat.

I am greatly indebted to Mr. F. N. Hume for permitting me to record the case.

Note by Mr. HUME.—A remarkable feature in this case was the persistence of phonation. In adults where the air passages are wide the loss of voice is important as an indication of the presence of membrane in the larynx and possibly below it. The absence of laryngeal obstruction without loss of voice may be misleading, but increasingly ineffective inspiration without laryngeal symptoms should be recognised as a sign of bronchial obstruction, its significance rendered more grave by the fact that in such cases of pulmonary suffocation, now of very rare occurrence, tracheotomy is useless. The vocal condition in this case is explained by the freedom, found post mortem, of the vocal cords from membrane.

North-Western Hospital.

SOME LIMITATIONS OF MEDICAL EVIDENCE.¹

BY STANLEY B. ATKINSON, M.A. CANTAB., M.B.,
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BARRISTER-AT-LAW; HONORARY SECRETARY OF THE MEDICO-LEGAL SOCIETY.

THE science, the art, and the correct estimation of the value of medical evidence is the province of forensic medicine. It is not impertinent, therefore, to inquire as to what limitations can be and are placed upon the medical man who desires to bear testimony in a court of law as to facts within his personal knowledge. Evidence is the means whereby an alleged matter of fact, the truth of which is being submitted to forensic investigation, is established or disproved. Testimony is such evidence as is given by word of mouth. Usually medical men are skilled common witnesses of fact; often they are asked for opinions inferred from such facts as they narrate. In offering such consequential testimony they must recollect that they are posing as experts; they would be wise in many cases in just stating what they actually found, without drawing a possible conclusion. In such a case John Hunter in 1781 twice told the judge: "I can give nothing definite."

Limitations of medical evidence may arise in two directions—limitations of medical knowledge and limitations imposed by the policy of the law. The former restrictions become fewer with the advance of time, research, and medical education—for men's views narrow with the progress of the sciences. Limitations imposed by rules of law are enlarged less easily; indeed, modern statutes are notorious for the strictness of their definitions—a strictness which often makes it difficult to bring home wrongdoing to a culprit's door. All definition implies limitation. In this connexion it has been said that in forensic medicine the law leads and medicine follows, whilst in State medicine medicine leads and the law follows.

Limitations of medical knowledge may be relative to the medical witness concerned (self-imposed or enforced), or they may be absolute. Thus the diligence, skill, and knowledge of medical men vary from age to age and from person to person. So variable is this range that a man is expected to treat a patient only to the best of his ability and not in the best manner possible by an authority on such matters. Recognising personal limitations, it is wise for all professionals to be on their guard and to risk no disgrace, when in

A paper read before the Medico-Legal Society on Dec. 11th, 1906.

from time to time, as it tends to get weaker, but the instrument is so arranged that this can be done by tightening a buckle of the strap from which the tendon springs. The accompanying reproduction of a photograph shows the arrangement of the artificial tendo Achillis.

Leeds.

MALGAIGNE'S HOOKS FOR FRACTURE OF THE PATELLA.

By J. E. S. BARNETT, F.R.C.S. ENG.

I RECENTLY at the Kingston Victoria Hospital had a case of broken knee-cap in a short, stout, muscular man who refused wiring. Seeking something which offered better results than bandaging with extension I decided to use the hooks, though most text-books "damn" them "with faint praise." I had not used or seen them used before. The index finger had plenty of room between the two fragments when pressed down through the swollen tissues. On the third day after the fracture, with the patient under chloroform and after aspiration of the joint, the fragments were very vigorously rubbed together. Four snicks with a scalpel down to the bone made way for the hooks, which were fixed well home and screwed up as tightly as possible, so as to lock the two halves firmly together. Now, after six weeks, the result is bony union.

The advantages of the hooks are their facility of a plication by the general practitioner. They lie in front of the joint cavity, with a minimum risk of joint sepsis, and there is a good chance of bony union without the continuous presence of a foreign body such as wire between skin and bone. I had difficulty in removing them owing to the thread of screws and bolts becoming filled by a sort of rust produced by iodoform powder and gauze. This could have been prevented by the occasional use of carbolic oil.

Kingston Hill.

NOTE ON A CASE OF DORSAL DISPLACEMENT OF THE ARM IN VERTEX PRESENTATION.

By ARTHUR G. WELLS, M.B., B.S. LOND., M.R.C.S. ENG., L.R.C.P. LOND.

THIS was a case, in private, of recent occurrence of a woman, aged 33 years, who was pregnant with her second child. The patient was very large and caused me, previously to examination of the abdomen, to suspect twins. Abdominal examination, however, revealed the presence of one child only occupying the second position, but an apparently excessive amount of liquor amni. The pelvis was found to be very capacious and the os uteri was almost fully dilated. The pains were short and weak. I proceeded to rupture the membranes immediately and a great gush of liquor amni occurred, much in excess of the average amount. The labour then progressed rapidly and within 20 minutes the head passed the vulva. Now came the interesting part of the labour. The head, instead of being completely born as far as the neck, stopped short after the forehead, nose, and lips had passed over the perineum, leaving the chin from just below the lower lip still within the vulva. In front the head was born to a little below the occiput and at the sides the ears were just born. Two or three more pains followed but no further advance of the head took place; but it was noticed that with each pain there was a bulging on the right side of the vulva, suggesting that something was, so to speak, hooked in the side and prevented the oncoming of the head. I then proceeded to pass the fingers between the vulva and the child's face into the vagina in the position of the bulging spot, and immediately came upon the elbow, which was caught in the side of the vulva, and on tracing the forearm forwards the hand and wrist were found to be lying behind the child's neck. I then brought the forearm down by the side of the face, converting the condition into one of head and arm, and the rest of the child was easily born with the next pain, with a very slight tear of the perineum. Whether this was due to the excessive amount of liquor amni present, and the child pressed in this condition right through the bony canal or not, I am not prepared to say, but such was the state of affairs at, and just within, the vulva.

Cognisant as I am of the very exceptional occurrence of this condition—in fact, some authorities deny even the possible existence of it—and also quite awake to the

difficulties of making a certain diagnosis, I have labelled this a case of dorsal displacement of the arm in vertex presentation, and with the above facts before one the case seems to me open to no other interpretation.

Twickenham.

The Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORAGANI De Sed. et Caus. Morb., lib. iv., Proœmium.

THE ELIOT COTTAGE HOSPITAL, HAYWARDS HEATH.

A CASE OF TRAUMATIC POPLITEAL ANEURYSM.

(Under the care of Mr. C. R. KEYSER.)

A MAN, aged 51 years, a gamekeeper, was sent into the hospital on Sept. 17th, 1906, by Mr. R. F. H. Newton of Balcombe, who asked Mr. Keyser to see him with a view to surgical treatment. The history was as follows. On March 1st, 1905, he was shot by a shot-gun in the right popliteal space at about five yards range. A large wound resulted which bled profusely. Many shot were removed and the wound eventually healed by second intention in about three months' time. For the last year the patient had been unable to work owing to a large painful swelling in the popliteal space that produced pain and swelling in the foot and leg which were much aggravated by standing. For the last nine weeks the swelling behind the knee had much increased in size and the pain and swelling of the foot and leg had also become greater. For one month a small ulcer had been noticed on the under surface of the big toe, opposite the base of the last joint, which exuded a foul-smelling discharge. When Mr. Keyser first saw the patient on Sept. 17th, 1906, he was a healthy looking man. There were a great deal of wasting of the muscles of the right thigh and œdema of the leg as high up as the knee. The skin of the leg was much thickened and dark reddish-brown in colour. The skin of the toes, especially the big toe, was greatly thickened and almost papillomatous in appearance but only on the dorsal surface. The temperature of the two lower limbs was equal and there was no tenderness except over the middle of the right popliteal space. The right foot was sweating freely and on the plantar surface of the big toe was a small, very recently healed, ulcer. Two small shot were felt just under the skin, one just above the head of the fibula and one on the outer side of the knee joint just above the patella. In the popliteal space there was a great deal of scarring; in the middle line particularly there was a large firm mass of scar tissue adherent to the skin and to the tendons, especially the biceps. Occupying the centre of the space and also the outer side was a large rounded swelling of about the size of a small Tangerine orange; expansile pulsation was present, which was readily controlled by pressure on the femoral artery. The pulse on the inner side of the ankle could be felt with difficulty but that on the anterior aspect of the joint could not be distinguished. There was, practically speaking, complete loss of sensation all over the dorsal surface of the foot, the toes, and the outer side of the leg, with the exception of the little toe. On the sole of the foot sensation was present but was much less than normal. Movement at the knee-joint was very good but the toes and ankle-joint were practically immoveable, both actively and passively.

As the symptoms seemed to be due to pressure of the aneurysm on the veins and nerves, Mr. Keyser thought that operation would only be of service if directed to the aneurysm itself in the popliteal space. Although the prospect of removal of the whole sac of the aneurysm did not appear to be very promising owing to the amount of cicatricial tissue present and the probable adherence of the vein and nerves to the sac and the tissues around, yet it seemed that it ought to be attempted owing to the rapid increase in size of the aneurysm and the pain and suffering which

and policy of the law; it arises on account of the essential strictness of the presumptions and of common law or statutory definitions which become more rigid with modern legislation. Thus crimes must be defined in exact terms and the medical facts must, to be of any avail, be capable of being pigeon-holed—counsel will endeavour, as they did in the bad old days of special pleading, to fit the facts into a loophole if possible. Loose popular phraseology has led to occasional surprise in this connexion; thus, in a moment of righteous anger we may say of drunkenness, "It's a crime," but as a matter of fact the law books do not recognise it as such, although it may incidentally or consequentially lead to the commission of crime.

The English law places no limitation or restriction upon testimony on the ground that the evidence was gained under the privileged circumstance of a medical adviser treating a patient—that is to say, there is no such privilege recognised *de jure*, but few judges would strive to extract such testimony from an unwilling witness. On the other hand, no limitation arises from fear of defaming another in the witness-box, for all statements made after being "sworn" are privileged. There are, however, a few limitations imposed on medical witnesses by rules of law. Medical men, as such, cannot give evidence on certain points. Thus the court will not be influenced by medical evidence which shows: 1. That a woman or a man is past the age for procreation and in the case of the former for bearing children. To the medical mind it appears *prima facie* that a medical certificate could summarily settle the point. But the legal mind considers the admission of such a practice as well indecent as capable of too wide an extension. Thus in 1787 Lord Kenyon (M.R.), when asked to declare that a septuagenarian couple was past the age for procreation, declared "if this can be done in one case it may in another, and it is a very dangerous experiment and introductive of the greatest inconvenience to give a latitude to such sort of conjecture." He was evidently suggesting that the principle might be applied to much younger women, sterilised perhaps by surgical means, and *pro tanto* to men should mere medical evidence be admissible. In these matters the law will not often inquire beyond *habilitas ad matrimonium*, the test of which in practice is mutual ability to consummate marriage. 2. That a child born nine months after lawful wedlock is illegitimate. 3. That, in the absence of eye-witnesses, a newly born dead child was born alive. 4. That, in a common disaster, a certain person must have died last. 5. That children under seven years of age are capable of giving "consent" or of committing an indictable offence. The ground upon which these legal presumptions are based is to prevent vain, futile, and often irrelevant discussions upon subjects which are often beyond the knowledge of mankind. In some continental systems of law, where codification is the rule, there are many more dogmatic presumptions; it is claimed that such presumptions prevent perjury and waste of the court's time.

In conclusion, I think it is wise occasionally to take stock of our present ignorance as well as of our present knowledge and it is with that object that this brief paper has been compiled.

Adelphi terrace, W.G.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTES OF THREE CASES OF RUPTURE OF THE TENDO ACHILLIS: TWO COMPOUND AND ONE SIMPLE.

By W. H. BROWN, M.Sc. LEEDS, F.R.C.S. IREL.,
CONSULTING SURGEON TO THE GENERAL INFIRMARY AT LEEDS.

THE following three cases have come under my care in private practice during the last year. Before this, in five-and-twenty years, I have never seen a case, either in hospital or outside. My object in putting the cases on record is to draw attention to the appliance I devised for the after-treatment, which succeeded in each instance in preventing anything like stretching of the healed tendon.

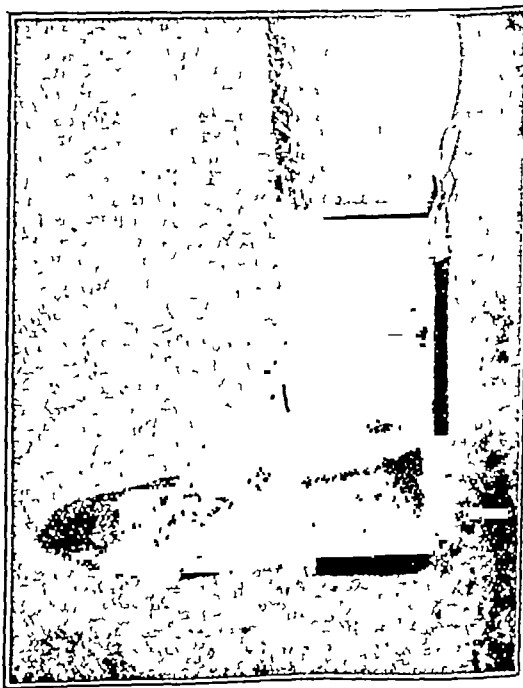
CASE 1.—A medical man, a little over 40 years of age, was playing tennis when he made a great effort to take a ball very wide of him; he felt something give in his

heel, fell as though shot, and had to be carried off the field. When I saw him there was rupture of the tendo Achillis. The gap between the two ends was wide enough to admit two fingers being depressed between them. I put the limb up in the position of talipes equinus, and maintained it in that position by means of an anterior telegraph wire splint. At the end of a fortnight I put the limb up in plaster, and in a month from the date of the accident the patient was able to wear the apparatus described hereafter. This he wore daily for three months. Now the limb is perfectly sound.

CASE 2.—A youth, aged 20 years, wished to wash his feet and attempted to accomplish this by standing with one foot in the lavatory basin. The basin gave way and its broken edge cut sheer through all tissues down to the bone at a point about three inches above the ankle joint. Under an anæsthetic all was made as clean as possible and the out edge of the tendon stitched with silk. In this case I made use of what is described as a "pilot" stitch—that is, a stout silk suture passed through both ends of the tendon and one and a half inches from the out edge, this being drawn tight, leaving the out edges quite slack and enabling the line of suture to be put in without any tension—a distinct advantage—and a method I have adopted in nerve sutures for some years with gratifying results. The skin wound was closed with silk-worm gut and the limb was put up as in Case 1, leaving, however, the bandage in such a way that the antiseptic dressing could be changed without disturbing the splint. The patient made a rapid and uneventful recovery. The youth is now able to indulge in the usual athletic pursuits—i.e., cricket, tennis, golf, &c.

CASE 3.—A man, aged 50 years, seen with Dr. Arthur Hutton of Leeds, attempted to wash his feet in the same fashion as the patient in Case 2, and again the basin gave way, cutting through, obliquely, all tissues down to the bone. Under an anæsthetic the needful cleansing was carried out and a similar line of treatment was adopted as in Case 2. Again, there is nothing of interest to record, the wound healing rapidly, the patient walking about with the assistance of the appliance which I will now describe.

To prevent the obvious danger of stretching the tendon by too early strain I had a boot made, attached to which was an



artificial tendo Achillis made of powerful elastic and leather. This was fixed to the limb by two circular broad bands of leather, about six inches deep, one embracing the calf, the other the same depth surrounding the thigh just above the knee. They girths were joined together by stout webbing. They give a satisfactory purchase and the patient cannot overstretch his tendon. Of course, the elastic needs adjusting

case now under observation. I believe acute rheumatism had nothing to do with the case, for although the mother said that the boy had growing pains he had none of the tenderness associated with this affection. I likewise believe that the presystolic mitral murmur was not a factor in the peri-arthritis, or one often finds this sign in children without any apparent cause. The hardness of the glands is certainly suggestive of syphilis but the boy had no other manifestations of this disease. The blue ointment employed in the treatment was prescribed with no other object in view than the reduction of the peri-arthritis thickening. Those of us who saw the boy were struck with the benefit which followed the taking of the perchloride of iron and glycerine mixture. After considering the whole subject it seems to me that a careful examination of the blood offers the likeliest source of light on the pathology of the affection and when I have another case I shall have repeated differential counts made.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Observations on MacConkey's Bile Salt Neutral Red Medium.
—Typhoid Fever Diagnosed by Blood Culture in the Absence of Agglutination Reaction.—A Third Case of Influenzal Endocarditis Diagnosed by Blood Culture.—The Incidence of Spontaneous Cancer in Mice.—Observations on the Treatment of Lesions by Passive Congestion.—Method for Testing the Digestive Power of the White Corpuscles.

A MEETING of this society was held on Jan. 15th, Sir A. E. RIGHT, Vice-President, being in the chair.

Dr. T. J. HORDER read, in the absence of Dr. F. W. ANDREWS, his paper on Observations on MacConkey's Bile Salt Neutral Red Medium. The writer said that MacConkey had introduced culture media containing $\frac{1}{2}$ per cent. sodium taurocholate with neutral red and any desired carbohydrate as a means of differentiating between various members of the bacillus coli group. He had recently employed the agar medium which MacConkey recommended and had been much struck by its great utility not only in the study of the bacillus coli group but in the case of many other bacteria. He showed a number of plate cultures prepared according to MacConkey's formula and which contained a series of diverse carbohydrates and allied substances. These were as follows: the pentose, *isodulcitol* or *rhamnose*; the monosaccharide, *glucose*; the disaccharides, *saccharose* and *lactose*; the trisaccharide, *raffinose*; the polyatomic alcohols, *glycerine* and *mannite*; and the glucoside, *salicin*. He had selected those eight substances because they were amongst the most useful differential tests for members of the bacillus coli group. On the plates were to be seen growing six members of that group—namely, bacillus coli communis, the bacillus enteritidis of Gärtner, the typhoid bacillus, Schottmüller's two paratyphoid bacilli A and B, and Shiga's dysentery bacillus; also a typical streptococcus faecalis and two different staphylococci. All this had been done before by MacConkey, at least as concerned the bacillus coli group, though perhaps not with precisely the same series of test substances. Nevertheless, Dr. Andrews thought it worth while to show the cultures in case some members of the society might be unaware of the extent to which this valuable method of differentiation could be used and also because the explanation of the phenomena put forward by MacConkey, though they felt sure it was in the main true, did not quite cover all the facts. MacConkey regards the colour of the growth as essentially dependent upon the capacity of the given organism to ferment the given test substance, with the formation of acid, whereby a red colour was produced in the growth. In the majority of cases this certainly held good, but not in all. As regards the actual plates shown, it would be most convenient to consider the results organism by organism rather than plate by plate. In the following tables the results so far as concerned colour production on the plates, are set out with the results as concerned acid formation from the same chemical substance in litmus broth, both under aerobic conditions. Dr. Andrews had had to put in interrogation marks (?) here and there where the colour reaction was not

TABLE I.—Reactions on Bile Salt Neutral Red Agar Plate (Aerobic).

	Isodulcitol.	Glucose.	Saccharose.	Lactose.	Raffinose.	Glycerine.	Mannite.	Salicin.
Bacillus coli communis	+	+	+	+	+	+	+	+
Bacillus enteritidis (Gärtner) ...	+	+	+	+	+	+	+	+
Paratyphoid A (Schottmüller) ...	+	+	+	+	+	+	+	+
" B "	+	+	+	+	+	+	+	+
Bacillus typhosus	+	+	+	+	+	+	+	+
Bacillus dysenteriae (Shiga) ...	+	+	+	+	+	+	+	+
Streptococcus faecalis	?	+	+	+	?	+	+	+
Staphylococcus pyogenes aureus	+	+	+	+	+	+	+	+
Staphylococcus epidermidis albus	+	?	?	+	+	+	+	+

+ = red colour; ? = a colourless growth.

TABLE II.—Reactions with Same Chemical Body in Litmus Broth (Aerobic).

	Isodulcitol.	Glucose.	Saccharose.	Lactose.	Raffinose.	Glycerine.	Mannite.	Salicin.
Bacillus coli communis	+	+	+	+	+	+	+	+
Bacillus enteritidis (Gärtner) ...	+	+	+	+	?	+	+	+
Paratyphoid A (Schottmüller) ...	+	+	+	+	+	+	+	+
" B "	?	+	?	?	+	+	+	+
Bacillus typhosus	+	+	+	+	+	+	+	+
Bacillus dysenteriae (Shiga) ...	+	+	+	+	?	+	+	+
Streptococcus faecalis	+	+	+	+	+	+	+	+
Staphylococcus pyogenes aureus	+	+	+	+	+	+	+	+
Staphylococcus epidermidis albus	—	—	—	+	—	—	—	—

+ = formation of acid; ? = no formation of acid (formation of gas disregarded).

decisive. It would be seen that while there was a very striking, broad, general correspondence between the two sets of reactions there was by no means identity. Thus in the case of bacillus coli communis identity was complete save in the case of salicin. This body was readily fermented by the strain of bacillus coli employed, yet there was no red colour at all on the bile salt plate. In the case of Gärtner's bacillus there was practically complete identity, though in the test tube this organism partially fermented raffinose. Paratyphoid A grew beautifully red with glycerine on the bile salt plate but failed to ferment glycerine in the test tube and the same was true of paratyphoid B. With the typhoid bacillus the identity of the two sets of reactions was complete. Streptococcus faecalis, on the other hand, was colourless with glycerine on the bile salt plate, though readily fermenting it in the test tube, and it gave very feeble colouration with isodulcitol on the plate, though it could easily ferment this substance. The two staphylococci tested both fermented lactose equally well. Yet on bile salt neutral red lactose agar staphylococcus aureus formed no colour at all, whereas staphylococcus epidermidis albus grew bright crimson. It was therefore clear that there was some other factor concerned than mere ability to ferment the test body with formation of acid, though what this was Dr. Andrews did not know. The reactions in litmus broth which he had given were all carried out aerobically so as to be comparable with the plates. They did not in all cases correspond with those given by MacConkey, which were carried out anaerobically. But although one could not as yet explain all the facts, it was evident that these media afforded a wide choice which might be of considerable service in the search for any given organism of known reactions. And this field of usefulness extended beyond the limits of the bacillus coli group. He had tested a number of streptococci and had found that the sodium taurocholate inhibited the growth of streptococcus pyogenes, whereas the common faecal streptococci grew readily and with many of the test bodies

Sir A. E. WRIGHT demonstrated (a) a method for testing the tryptic activity of leucocytes and the antitryptic power of the serum, and (b) a method for measuring that tryptic power for clinical uses. A known quantity of blood was drawn from the finger and diluted with four parts of blood-saline and sterilised distilled water. From this a pellet of clot separated which inclosed all the white cells. The red blood corpuscles and serum were now washed away. Four tubes were then prepared; to all of these gelatin was added and to two of them serum was also added. After the tubes have been incubated, most conveniently at 37° C., for two to three days, in the former, digestion of the clot and of the gelatin took place; in the tubes, however, to which the serum had been added, no digestion occurred, proving that serum had some antitryptic action. In order to estimate the amount of tryptic action the following method was adopted. Known quantities of corpuscles and of albumin were taken into a capillary tube with varying dilutions of serum. In the mixture with pure serum no digestion took place. As the serum was further diluted more and more digestion took place, so that in the mixture which contained no serum complete digestion occurred. Such a method formed a means of estimating the tryptic action of any substance.

CLINICAL SOCIETY OF LONDON.

Acute Pneumonia with Abscess of the Lung and Acute Endocarditis.—Myxœdema with Changes in the Parathyroid Glands.—The Connexion of Tetany with Dilated Colon in Children.

A MEETING of this society was held on Jan. 11th, Mr. H. H. CLUTTON, the President, being in the chair.

Dr. FRANCIS H. HAWKINS (Reading) read notes of a case of Acute Pneumonia with Abscess of the Lung and Acute Endocarditis. The patient was a man, aged 51 years, who presented signs of pneumonia of the upper lobe of the right lung. After the temperature had been normal for a few days it gradually rose for ten days, then suddenly went up to 105° F. and fell to 102°, when the patient broke out in a profuse perspiration. On the following day he had a rigor and the temperature rose to 104°, then fell to 98°, and he again perspired profusely; two days later the patient became comatose and died. At the necropsy the right upper lobe was in a state of grey hepatization; it contained three abscesses varying in size from that of a walnut to that of a hen's egg; all were lined with a distinct lining membrane. At the base of the aortic cusp was a recent fibrous deposit which on being removed showed an ulcerated surface. No murmur had been heard during life. Dr. Hawkins pointed out the rarity of abscess as a complication in acute pneumonia. He regarded the case as one of endocarditis pneumoniae, and mentioned that Weichselbaum had demonstrated the diplococcus pneumoniae in a growth on the cardiac valves in similar cases.—Dr. O. THEODORE WILLIAMS commented on the suddenness of onset of abscess of the lung in such cases and the invariably fatal issue. There was no time, even if the other indications were favourable, for surgical intervention. Happily the complication was a rare one; he could only recall about four cases. In one of these, a woman about 60 years of age, large quantities of pus had been expectorated.—Dr. HAWKINS, in reply, wished to emphasise the fact that the expectoration was not purulent in his case; it was ordinary pneumonic sputum.

Dr. DAVID FORSYTH read a paper on a Fatal Case of Myxœdema with Changes in the Parathyroid Glands which will be found at p. 154 in the present issue of THE LANCET.

Dr. F. LANGMEAD read the notes of three cases of children in whom Relapsing Tetany had been associated with Dilatation of the Large Intestine. Case 1 was that of a boy, aged six years, who between November, 1903, and April, 1905, was admitted five times into the Hospital for Sick Children, Great Ormond-street, under the care of Dr. A. E. GARROD, suffering on each occasion from an attack of tetany. Each attack was accompanied by the evacuation of yeasty pulaceous stools and distension of the abdomen. Abdominal examination revealed the presence of a large hollow viscus on the left side. All treatment was ineffectual until lavage of the large intestine by means of a rectal tube was resorted to, when on each occasion improvement leading to recovery was initiated. The last attack was complicated by fatal distension of the hollow viscus was seen to be

the sigmoid flexure which was very dilated and occupied the greater part of the left half of the abdominal cavity. It held about 13 ounces of fluid. Case 2 was that of a boy, aged three years and two months, who was admitted on May 10th, 1906, also under the care of Dr. GARROD, for his fourth attack of tetany. This proved to be accompanied, as in Case 1, by the passage of pulaceous motions and the presence of a large hollow viscus in the abdomen. Lavage was temporarily successful, but a month after admission diarrhoea and rapid wasting began and operative treatment was employed. Mr. W. A. LANE removed ten inches of dilated sigmoid flexure and at first the child became better. Death, however, occurred 12 days afterwards. Post mortem the remaining large intestine was found to be enormously dilated; the walls being thin and atrophic. No obstruction was present. Case 3 was that of a girl, aged two and a half years, who was admitted under the care of the late Dr. STURGES in June, 1884, for repeated attacks associated with abdominal distension and offensive undigested motions. She was an emaciated child and continued to waste and died from a terminal broncho-pneumonia. Post mortem the only lesion found except broncho-pneumonia was a dilated transverse colon. Dr. LANGMEAD also referred to a case reported by Dr. H. BATTY SHAW and Mr. H. T. MANT.¹ It was that of a girl who for four years had suffered from gastro-intestinal disorder, for 18 months had had abdominal distension, and for seven months repeated attacks of tetany. Thyroid substance had proved effectual when other measures had failed. By operation a general dilatation of the large intestine had been found. These cases formed a definite and apparently hitherto unrecognised group, to which four attributes were common: (1) obstinate relapsing tetany; (2) abdominal distension; (3) offensive unhealthy motions; and (4) a dilated large intestine. The disappearance of the tetany after the bowel was irrigated and its reappearance when accumulation of the characteristic faeces took place showed that it was due in these cases to toxic absorption from the bowel. This favoured the toxæmic theory of tetany in general. Malnutrition, which was present in these as in most described cases, probably acted by producing an unduly irritable nervous system.—Dr. H. G. TURNER discussed the possibility of recognising by an examination of the abdominal distension whether the sigmoid or the whole colon was dilated.—The PRESIDENT said that he had operated on two cases in adults in which tetany was not present. He discussed the operative measures advisable and declared himself in favour of preliminary drainage of the colon for a month or so before attempting resection.—Dr. GARROD considered it was impossible either in the child or the adult to distinguish between enormous sigmoid dilatations and other colon dilatations. In such cases the sigmoid often extended over the whole abdomen, whereas, on the other hand, colon dilatations might closely mimic an enlarged sigmoid in its physical signs.—Dr. LANGMEAD, in reply, said that he would group the sigmoid and colon dilatations together for this purpose as forming a single condition.

EDINBURGH OBSTETRICAL SOCIETY.—A meeting of this society was held on Jan. 9th, Dr. J. W. BALLANTYNE, the President, being in the chair.—Dr. Frederick PORTER communicated a case of Acute Albuminuria caused by the pressure of a tumour on both ureters. The patient, a multipara, aged 34 years, first came under notice complaining of backache and pain in the right hypochondriac and lumbar regions for five years. A tumour with the characteristics of a large moveable kidney was palpated in the right hypochondrium. Several months later the patient developed acute albuminuria with severe œdema of the whole body. Examination showed that pain was now referred to the right iliac region and a tumour was palpated in that region. On operation a multilocular cyst attached to the broad ligament and pressing on the ureters was found and removed. The albumin disappeared from the urine in nine weeks. The patient is now four months pregnant and is taking a light mixed diet.—Dr. Elizabeth H. B. MACDONALD (Dundee) read a paper on Intractable Uterine Hemorrhage and Arteriosclerosis of the Uterine Vessels. The paper was illustrated by 30 micro-photographs. Dr. Macdonald said: Many cases of severe uterine hemorrhage occurring near the menopause without obvious cause have been reported within recent years. By many observers, Reinecke, Chalmers, Pichesin and Petit, Pozzi, and more recently Barbour, the vessel changes

formed a bright crimson growth. This fact confirmed the opinion which he had elsewhere advanced as to the specific difference between these organisms. In the case of the staphylococci the media would prove of similar utility.

Dr. HORDER read a paper on a case of Typhoid Fever Diagnosed by Blood Culture in the Absence of the Agglutination Reaction. He said that recent observations made upon patients suffering from typhoid fever showed that the bacillus could be cultivated from the blood in a considerable proportion of cases. A single case of successful blood culture would not, therefore, deserve the notice of the society were it not that the case had some points of special interest. The patient, a young man, aged 27 years, was taken ill on Nov. 27th, 1906. Seen in consultation on Dec. 3rd, the eighth day of the disease, the chief clinical features were high continued fever (103-4° F.), headache, active delirium, and slight general bronchitis. The presence of a urethral discharge had suggested the possible existence of gonococcal blood infection. There was, however, no arthritis or any evidence of serous membrane inflammation. Films made from the urethral pus showed the presence of gonococci. A leucocyte count resulted in the discovery of a leucopenia, the white cells numbering 1400 only. A blood culture was undertaken at the same time. The leucopenia suggested that the disease might be typhoid fever. The agglutination test was therefore performed, with the result that a 1 in 20 dilution of the blood gave a few small clumps at the end of an hour. A 1 in 40 dilution gave no clumping at the end of an hour. As it is usually held that considerable dilution of the blood is necessary to obtain growth of the typhoid bacillus two of the broth tubes used in the blood culture were added each to 50 cubic centimetres of broth. In 24 hours there was no visible growth in either of the tubes, but in 48 hours a fluffy growth appeared in the blood-clot of two broth tubes which had not been diluted and the two diluted broth tubes showed uniform turbidity. In the blood-agar tubes, where the blood had received no dilution at all, good growth also appeared. On examination all the tubes showed the presence of an organism resembling the typhoid bacillus and it was found that this organism was clumped completely and rapidly by a dilution of 1 in 80 of the blood from each of two convalescing typhoid patients. In the course of the next few days classical reactions were obtained by use of the customary tests. The patient developed rose-spots eight days after the blood culture. The points of interest in this case were: (1) the early diagnosis of the case; (2) the demonstration of the bacilli in the blood in the absence of Widal's test; (3) the coexistence of a marked leucopenia with a large number of bacilli in the systemic blood-stream; and (4) the facility with which the organism grew without having recourse to high dilution of the medium or to the addition of such substances as ox-bile, &c. It might be that in this particular case the bactericidal power of the blood for the typhoid bacillus was exceptionally low. And the absence of the agglutination test might itself have been evidence of feeble immunity on the part of the patient.

Dr. HORDER related a Third Case of Influenzal Endocarditis diagnosed by Blood Culture. Last year he read a paper before the society in which he described two cases of ulcerative endocarditis due to Pfeiffer's bacillus influenzae. A pure culture of the bacillus was obtained upon more than one occasion from the blood of each patient, and in both cases post-mortem observations confirmed the existence of this organism in the heart-valves and the absence of other organisms. Dr. Horder suggested at the time that the occurrence of Pfeiffer's bacillus in association with ulcerative endocarditis would probably be found to be not uncommon. He was able that night to report a third case of endocarditis in which a pure culture of the bacillus influenzae was obtained from the patient's blood. The patient was a man, aged 50 years, admitted to St. Bartholomew's Hospital, where he was under the care of Dr. Samuel West. He had had rheumatic fever when 23 years of age. The onset of his fatal illness was insidious and its probable duration was about four months. The clinical picture was that of a chronic case of ulcerative endocarditis and there was nothing to suggest the nature of the causal organism. The technique of the blood culture was that previously described. In each of four broth tubes, as well as upon two agar slopes, minute colonies appeared in 24 hours and these were large enough to count in 48 hours. It was estimated that there were no fewer than 50 colonies present in each cubic centimetre of blood. The organism

obtained showed several of the features noted in Dr. Horder's previous paper. Thus, the members examined in the original blood-broth tubes were highly coccoid in form, and when seen as definite short bacilli they presented a bipolar appearance so frequently that casual observation might have passed the film as being that of a short streptococcus. Again, first and second subcultures were obtained without the addition of blood to the medium and the colonies on agar were at first opaque. Third subcultures, however, gave the characteristic dewdrop-like colonies. Gram-staining was readily and persistently negative in all colonies examined. Unlike the two cases previously described, this patient's leucocytosis was low—10,000, resembling what occurs most often in cases of chronic streptococcal endocarditis. Death occurred rather suddenly two weeks after the blood culture had been undertaken. A post-mortem examination was not obtained. In view of the present difficulties in satisfactorily assigning the exact rôle played by Pfeiffer's bacillus in the causation of influenza the occurrence of these cases of chronic septicaemia due to this organism obtains additional importance. That it is possible for the blood stream to swarm with any organism and for the patient meantime to be comparatively free from acute symptoms is one of the problems of immunity. That this organism is occasionally Pfeiffer's bacillus influenzae would appear to raise a serious difficulty in accepting the bacillus as the sole primary agent in the disease clinically known as influenza.

Mr. F. W. TWORT gave the following facts in relation to the Incidence of Spontaneous Cancer in Mice. He said that during the past two and a half years he had kept a large number of mice; during the first year out of some 100 mice no case of cancer occurred. During a subsequent period of 18 months out of some 120 mice 20 cases of cancer had occurred. One of these was a primary carcinoma of the lung and another was primary carcinoma at the junction of the stomach with the duodenum. Secondary deposits were present in the glands. This growth occurred in an old male mouse. All the remaining animals affected were females. Around many of the growths sarcomatous nodules were found in considerable number. He considered that this large incidence of cancer among mice was unusual, for he had kept mice for many years previously and had not seen a case in which a cancer visible to the naked eye was present.—Dr. W. BULLOCK said that the proportion of mice affected was much higher than he had met with in the mice kept in laboratories; on the other hand, only young mice were usually kept, whereas Mr. Twort had kept older mice.—Dr. E. F. BASHFORD said that the proportion of cases affected was undoubtedly high. Among 20 descendants of two mice which had cancer in only three was cancer present.

Dr. J. H. WELLS gave the results of some Observations on the Treatment of Lesions by Bier's Method (Passive Congestion). He said the treatment depended on two factors: (1) the increased supply of blood to the part; and (2) the presence in the blood of a substance with a high bactericidal power. Bier's method was to produce passive congestion by applying an elastic bandage on the proximal side of the lesion. In the first case, lupus of the elbow, the bandage was applied for an hour. The opsonic index, which before the application was 0.7, rose after removal of the bandage to 1.2 to 1.4; the same effect was noted on a second occasion. In the second case, tuberculous synovitis of the knee of nine months' duration, the opsonic index before treatment was 0.9; the bandage was applied for three hours and the index rose to 1.2. In a third case a similar effect was produced. In two other cases with external wounds the same treatment was adopted. A similar rise in the opsonic index was shown, but the lymph which exuded from the ulcer showed a falling opsonic index. The opsonic curve in these cases corresponded closely with the curve seen after artificial inoculation and after massage, and it was suggested that passive congestion had the same effect as these other two methods—raising the opsonic index by auto-infection.—Dr. R. W. ALLEN called attention to the fact that he had shown that the plasma obtained from muscle gave a much higher opsonic index than blood serum, and he attributed the good results obtained from massage to the fact that muscle plasma passed into the general circulation.—Sir A. E. WRIGHT doubted if the rise in the opsonic index after massage could be attributed to muscle plasma, for massage gave in the first place a negative phase, whereas if the raised opsonic index were due to the muscle plasma the rise of index should occur at once.

Reviews and Notices of Books.

Pathology, General and Special, for Students of Medicine.
By R. TANNER HEWLETT, M.D. Lond., M.R.C.P. Lond.,
D.P.H. R.C.P.S. Lond., Professor of General Pathology
and Bacteriology in King's College, London; Lecturer
on Bacteriology, London School of Tropical Medicine;
Physician to the Seamen's Hospital, Greenwich. London:
J. and A. Churchill. 1906. Pp. 540. Price 10s. 6d. net.

Professor Hewlett's book is primarily intended for the use of students and practitioners of medicine and in the preface we are informed that this object has throughout been kept in view; in other words, that the essentials of general and special pathology, with special reference to their bearing upon the art of healing, have been detailed. We may at the outset congratulate the author upon the successful manner in which he has carried out his intentions, for the subject matter is carefully arranged and concisely presented and very few important considerations have been omitted; indeed, it is rather a matter for surprise that he has been able to compress so large an amount of useful and up-to-date information within such comparatively small compass, the more so that his book is readable and is not a mere catalogue of facts and theories. A great deal of recent work has been succinctly summarised and incorporated in the text, and in cases where a detailed discussion of problematical matters or a minute presentation of the latest results is outside the scope of the work references are given in footnotes to important monographs or to papers with bibliographies. These references, being very carefully chosen, serve to enhance the value of the book considerably.

The first eight chapters are devoted to general pathology and the consideration of the chief pathological processes which are in all cases intelligibly described and carefully discussed. In cases where various explanations or theories have been propounded these are usually presented in a clear and concise manner and the balance of evidence is indicated. The scope and objects of pathology are first outlined and the causes of disease discussed with reference to their pathological significance. A chapter (No. II.) is devoted to the progressive and retrogressive changes. The processes of hypertrophy, hyperplasia, and regeneration are described. The various necroses, degenerations, and infiltrations are next discussed and the current views of their origin and significance are indicated. In the chapter on Neoplasms the various forms of new growth are briefly described and the recent important work on the cytology of malignant tumours is given in some detail; there is also an account of several of the theories as to the genesis of tumours. The description of inflammation is clear and concise, the vascular changes associated with it are described in greater detail than those of the tissue cells, while the process of suppuration might also with advantage be given in greater detail. The pathology of infection and of parasitism is given in Chapter V. The various organisms are described, their biological characters are given, and the lesions produced by them are outlined. The complex problems of immunity are dismissed with but short consideration, although reference is made to Ehrlich's side-chain theory, to Metchnikoff's doctrine of phagocytosis, and to the occurrence of opsonins as described by Wright and Douglas. A useful chapter is that devoted to fever and pyrexia; the changes in fever, the disorder of metabolism, and the varieties of fever are described, while the theories of the nature of fever are given at considerable length and critically examined. In like manner oedema and dropsy are carefully presented and the results of recent experimental work are given and applied to the discussion of the theories of oedema formation.

The remainder of the book is devoted to special pathology, the diseases of the various systems and organs being considered. Here the limitations of space are more apparent, for many important conditions are discussed with little more than passing reference. Curiously enough, some of the rarer conditions are given more importance than some of those of more common occurrence; for example, the account of achondroplasia extends to nearly two pages, while to pleurisy is accorded barely a page. Some of the chapters in this part of the book are, however, highly commendable, among which we may mention that on disorders of metabolism, where among other things the pathology of gout and diabetes mellitus is given, and that on diseases of the urinary system where the problems concerned in albuminuria and uræmia are carefully considered. Asthma and emphysema are well discussed, diseases of the pancreas receive considerable attention, and the results of recent researches are briefly summarised or references are given to them. In general, Professor Hewlett's accounts of pathological processes and his discussion of hypotheses or theories are better than the descriptions of the pathological anatomy of some of the tissues and organs, which are often meagre and incomplete, and might with advantage be lengthened in a subsequent edition. The only illustrations are those of microscopical appearances, and these are mostly reproductions of micro-photographs, most of which are satisfactory and illustrate the histological details of some of the conditions described.

This book should prove of value to the student. Taken in conjunction with a study of morbid anatomy in the post-mortem room, and of morbid histology in the laboratory, it should afford him a useful acquaintance with some of the fundamental facts of pathology without which a rational study of medicine is impossible. We can commend it as a useful elementary text-book on the subject.

Problems in Animal Metabolism. By J. B. LEATHES, M.B., B.Ch. Oxon., F.R.C.S. Eng. London: John Murray. 1906. Pp. 205. Price 7s. 6d. net.

THIS work represents a course of eight lectures delivered in the physiological laboratory of the University of London in 1904. Perhaps their scope is best set forth by giving the titles of the lectures: Physiological Chemistry and Metabolism; Assimilation and Syntheses of Carbohydrates; Catabolism of Carbohydrates; Assimilation and Syntheses of Fat; Catabolism of Fat; Assimilation and Syntheses of Proteids; Catabolism of Proteids; and Metabolism of Cyclic Formations. The last lecture is one of the most interesting of the series, as it deals with guanidine, kreatine, arginine, histidine, the purin bases, uric acid, and tyrosine, and their allies in the metabolism of the body.

These lectures are intended to point out that the study of animal metabolism is daily becoming less the study of the sum-total of chemical change in the body and more the study of the individual chemical reactions, the items that go to form the final sum. However simple and comprehensive the term metabolism—a word coined by Schwann—it includes some of the most intricate and inaccessible of natural phenomena. The ideal goal of physiological chemistry is still a long way off, but in these lectures we have for the thoughtful student an excellent representation of what has been done up to the present in this difficult department of study. In no department, perhaps, has the progress effected been greater than in the chemistry of the carbohydrates; indeed, the chemistry of the carbohydrates has become a problem in geometrical permutations, and most of the possible permutations have been identified and most of these synthesised. Even the colour tests for proteids—long nothing but empirical tests—have provided a means, when rightly studied, of throwing light on the constitution

have been regarded as the causal factor. Theilhaber, believing the vessel changes in many of the cases to be merely physiological, lays stress on the part played by the musculature, and Palmer Findley has recently supported him enthusiastically in this view. Anspach (1906) has demonstrated the physiological increase in elastic tissue in parous uteri, and suggests that hæmorrhage in some cases may be due to failure in the normal elastic increase. Another class of observers has sought the cause in ovarian changes. From a consideration of the mode of occurrence and control of normal menstrual hæmorrhage, the possible causes of abnormal hæmorrhage may be deduced. They fall naturally into three groups: (1) abnormalities in the periodic ovarian stimulation; (2) conditions giving rise to muscular insufficiency, either from actual deficiency of muscular tissue or loss of tone and consequent deficient response to vaso-motor stimulation; and (3) conditions giving rise primarily to continued congestion of the endometrium, either from increased arterial supply or venous obstruction. The first group has possibly more significance than is generally accorded to it. In considering cases coming under the second heading of muscular insufficiency the vessels are to be regarded as essentially part of the uterine musculature. The uterus may be ideally considered as a muscular expansion of its vascular walls, as Keiffer has pointed out. The third group is important and probably includes most of the cases of hæmorrhage becoming evident at the menopause. The vascular changes in the uterus, physiological and pathological, require special consideration. There is a definite increase in elastic tissue in the vessel walls and throughout the uterus generally with every pregnancy. Periarterial and perivenous degeneration, the degenerated areas showing a deposit of elastic tissue, is normal in parous uteri. This is shown in a case where the uterus was removed for severe menstrual pain, interstitial fibromyoma being suspected, but only a glandular endometritis being found on examination. Premature senile changes associated with alcoholism are demonstrated in a case where the symptoms pointed to cancer of the body of the uterus and where at operation the palpable tumour was found to be a sigmoid cancer and the uterus to be small and senile but otherwise apparently normal. Somewhat similar vascular changes are found in a case where there had been severe menorrhagia for ten years. The association of uterine arterio-sclerosis with general arterio-sclerosis is shown in a case with a history of syphilis. Here the vascular changes present peculiar features; no typical periarterial degeneration is found. The degenerated areas within and surrounding the vessel walls are composed of a more or less degenerated fibrous tissue and show no elastic deposit; at the same time there is a definite increase in elastic tissue in the interior of the larger vessels. The question is whether there is an arterio-sclerosis of the uterine vessels apart from that brought about by physiological causes. If so, will the condition necessarily be accompanied by hæmorrhage? Westphalen and Thoma have endeavoured to show that the peculiar vessel changes in the uterus are essentially due to the changes in the blood pressure to which the functioning uterus is subject. The periodic increase in blood pressure at the menstrual periods, and still more the pressure changes incident to pregnancy and the puerperium, cause changes in the uterine vessels to which no other vessels in the body are subject to the same extent. The uterine vessels, so to speak, are shorter lived than any others. If, now, it is supposed that changes in blood pressure in these arteries arise from some pathological condition similar changes will presumably occur. The changes in the vessels due to physiological processes cannot be regarded as causes of hæmorrhage. They may go to an extreme degree without the occurrence of any abnormal bleeding. This is only natural. Further, since these changes are essentially due to changes in blood pressure associated with the functioning uterus, they are possibly indistinguishable from changes due to a pathological increase in blood pressure. In the causation of hæmorrhage the important thing is the condition which gives rise to the vessel changes. To speak of arterio-sclerosis as the cause of the hæmorrhage is a mere confounding of words. The hæmorrhage is a symptom of the condition of which the arterio-sclerosis is a sign. If the conditions leading to arterio-sclerosis exist, hæmorrhage may occur before the vessel changes. At the opposite extreme are those cases where the changes have extended to the vessels of the endometrium and where the

F. W. N. Haultain, Dr. J. Ritchie, Dr. J. M. Munro Kerr (Glasgow), Dr. W. Fordyce, Dr. B. P. Watson, and Dr. Porter discussed the paper and Dr. Macdonald replied.

SOUTH - WEST LONDON MEDICAL SOCIETY.—

A meeting of this society was held on Jan. 9th, when a paper was read by Mr. Charters J. Symonds on the Diagnosis and Treatment of Malignant Disease of the Cæcum. Mr. Symonds related a series of cases, which he illustrated by preparations, drawings, and lantern slides, showing the varieties of the clinical histories which were presented and the difficulties which lay in the way of accurate diagnosis. In most cases colic was a predominant feature and the recurrence of colic indicated the necessity of a careful abdominal examination as a matter of routine. Colic was not, however, invariably present, as shown by a patient who came for treatment on account of a tumour in the right iliac fossa which had been discovered by herself although giving rise to no symptoms. The differential diagnosis from chronic appendicitis was of the greatest importance, as an error that might involve the postponement of operation was fatal. The pathognomonic distinction lay in the mobility of the tumour in early stages, whereas appendicular masses being inflammatory were always fixed. More rarely tuberculous ulceration of the cæcum or enlargement of glands in the ileo-cæcal angle might give rise to difficulty in diagnosis. Age was of no value in forming an opinion; he had operated on patients as young as 34 and as old as 75 years. The treatment that could alone be effective was by operation and the method adopted was the removal of a portion of the ileum and of the ascending colon and the lateral anastomosis of the former into the latter. The glands of the mesentery were removed as far as possible, involving in some cases a difficult and protracted procedure. The results had on the whole been most successful. The conditions under which an operation should be undertaken were considered; it was a question whether the presence of serum was not a bar to successful operation as it appeared probable that serious symptoms had followed in one case which were attributed to the collection of serum in the cavity left by operation; in this patient a rapid infection of the wound by the growth had taken place. The involvement of coils of intestine did not necessarily require the abandonment of the operation; such involved coils might be separated or even resected. The condition of the patient as to pallor and wasting had to be taken into consideration and much judgment was needed in forming an opinion, as they might proceed from small and repeated hæmorrhages, or from septic absorption, or from the cachexia of malignancy. In the two former an operation might be performed without hesitation. Mr. Symonds urged the wisdom of early operation, pointing to the good results which ensued. He deprecated too light an estimation of the nature of a tumour because it was moveable, or of long duration, or existent in a patient apparently in good health. He held that at present no limits could be placed to the extent of an operation provided that all diseased structures could be removed.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—

A clinical meeting of this society was held on Jan. 4th, Dr. L. P. Mark, the President, being in the chair, when the following cases of interest were shown: Mr. D. J. Armour showed: 1. A man, aged 70 years, with an Epithelioma on the Alveolar Border of his Upper Jaw. His teeth were in a very bad condition and a jagged stump on the lower jaw exactly fitted into the excavation formed by the growth on the upper jaw. 2. A young man from whom he had removed a large Endothelioma from the Left Frontal Lobe weighing three and a half ounces. It was apparently growing from the falx cerebri and was enucleated without much difficulty and the patient made a perfect recovery.—Mr. Aslett Baldwin showed two sisters, one aged three and a half years and the other 11 years, with Bilateral Congenital Dorsal Dislocation of the Hip and the typical waddling gait. The trochanters could be drawn down a considerable distance in the younger child but only to a slight extent in the elder one. Mr. Baldwin thought the younger patient could be greatly benefited by a combination of Lorenz's operation and opening the joint from the front to make sure that the front part of the capsule was freed from the floor of the acetabulum.—Mr. E. P. Paton showed a man with Multiple Perforating Ulcers and marked signs of locomotor ataxy.—Mr. J. G. Alder exhibited a Growth in the Neck treated by the x rays. A microscopical examination showed the growth to be composed of many giant

therapeutics it would seem that serum treatment proper is of but limited use, more being accomplished by protective vaccination against infective conditions. A long list of diseases is attributed to the action of infective agents so small as to be invisible even under the highest available powers of the microscope; this includes rabies, variola, and foot-and-mouth disease, all of which may affect mankind, as well as the epizootics, bovine contagious pleuro-pneumonia, rinderpest, and South African horse sickness. Probably swine fever and canine distemper are also due to invisible organisms. Quite a considerable number of epizootic diseases are due to protozoan organisms; such are Texas fever, red-water fever, equine biliary fever, and canine malignant jaundice, all of which are technically piroplasmoses; and several forms of trypanosomiasis, such as surra and nagana. Spirochætae—whatever may be the true biological position of these organisms—cause disease in geese and fowls, while the author has found them invariably present in cases of canker and grease in horses. Many other points of interest are contained in the book before us, which is also adequately illustrated. We are sure that it will be appreciated by those for whom it is intended.

LIBRARY TABLE.

A Text-book of Botany for Secondary Schools. By J. M. COULTER, A.M., Ph.D., Head of the Department of Botany at the University of Chicago. London: Sidney Appleton, 1906. Pp. 365. Price 5s. net.—This book is based upon some previous works of the author who has availed himself, as he states in the preface, of the opinions of many experienced teachers of botany. The book is divided into 25 chapters. Commencing with a description of the structure, function, and relationship of plant organs the author goes on to describe the various divisions of the vegetable kingdom and gives a short account of plant breeding and forestry. The four concluding chapters are devoted to "plant associations" or the way in which plants become grouped together according to conditions favourable to their growth. Those who are familiar with the author's previous works will be prepared to hear that the present text-book is an excellent one, and it is made the more valuable by being the outcome, as we have already said, of the co-operation of the author and other teachers. Practical work is insisted upon, the author emphasising the need of the supplementary aid of the teacher, the laboratory, and field work. Used in this way the book will be found of great value, while the style and plan of the work also make it suitable for general reading, and the clearly printed illustrations, of which there are 320, greatly elucidate the text.

War with Disease, being a Series of Lectures on Preventive Medicine delivered to the Officers and Non-Commissioned Officers of the Cavalry Brigade in Ireland under the Command of General M. F. Rimington, C.B. By FREDK. F. MAC-CABE, M.B. Dub., Medical Officer of the South of Ireland Imperial Yeomanry. Dublin: Doland, Limited, naval and military printers, 1906. Pp. 78. Price 6d. net.—Although of no great size, this book contains a mass of information set forth in so admirable a style that if the truths embodied in it are borne in mind epidemic diseases peculiar to an army in the field should have their power for evil vastly reduced. General Rimington has written an excellent introduction addressed to his men, after which the work opens with the subjects of the physiology of the blood and digestion, and of the bacteriology of the diseases incidental to soldiers. The remarks on the water-supply of troops are excellent and the author gives a telling instance in his own person of how a medical officer can influence the minds of soldiers and cause them to take the necessary precautions against enteric fever and dysentery. He contrasts

the returns of the deaths from disease in our South African War with those which occurred among the Japanese in their war, much to our disadvantage. Lecture II. deals with diseases of the lungs and zymotic and venereal affections. His remarks on the preventive measures to be undertaken against the last class of disease are peculiarly apposite and, moreover, are quite up to date, as they include the most recent investigations of Dr. Roux and Professor Metchnikoff. In Lecture III. tropical diseases are considered. We are glad to see that the use of the "cold tub" as an exciting cause of disease in the tropics is insisted on. Malaria, yellow fever, Malta fever, tick fever, cholera, and dysentery all receive due attention. The last lecture is devoted to personal and camp hygiene. The work is replete with valuable hints for the combating of disease and has given us much pleasure in perusal.

1. *Examination Questions for the Diploma of Public Health.*

By HUGH R. JONES, M.D., D.P.H. Camb. London: Baillière, Tindall, and Cox, 1906. Pp. 96. Price 2s. 6d.—

2. *Five-figure Mathematical Tables for School and Laboratory Purposes.* By A. DU PRE DENNING, M.Sc. Birm., B.Sc. Lond. London: Longmans, Green, and Co. 1906. Pp. 22. Price 2s.—

3. *Elementary Science applied to Sanitation and Plumbers' Work.* By A. HERRING SHAW, Manchester: The Artistic Printing Co., Limited. London: The Sanitary Publishing Co., Limited. 1906. Pp. 234. Price 2s. 9d.—

As the subjects of these three small books have several points in common it will be convenient to consider them in one notice. 1. Dr. H. R. Jones has compiled a useful selection of about 470 examination questions arranged under 15 headings, of which the first five are Chemistry and Physics, Practical Bacteriology, Practical Microscopy, Practical Chemistry, and Sanitary Inspection. It is not a "cram book," as it does not give answers to the questions or hints or "tips" of any kind, but it supplies excellent material for practice or for self-examination by candidates before presenting themselves for the final ordeal. Two of the questions seem to us to be rather conjectural in their scope and therefore unsuitable for examination purposes. One of them (on p. 24), is "Give an account of atmospheric electricity and its influence on health"; the other (on p. 47) is as follows: "The death-rate from violence is increasing. Is there any probable explanation?" 2. Mathematical tables may be appropriately mentioned here, as the first question in Dr. Jones's treatise just referred to, is, "What are logarithms?" Mr. A. du Pré Denning's object is to exhibit the usual five-figure tables of anti-logarithms, logarithms, circular functions, squares and cubes, and so on, on pages of somewhat large size, their type surface being a close approximation to that of THE LANCET. This arrangement, as he points out, naturally requires less turning over of pages. Tables of atomic weights, differential coefficients, electrical units, and various numbers in frequent request are appended. 3. Mr. A. Herring Shaw's "Elementary Science" is primarily intended for students who may be preparing for the examinations of the Royal Sanitary Institute of Great Britain and for certain examinations open to plumbers. It is an excellent compendium of the information required for such purposes, is copiously illustrated, and contains numerous exercises and problems, fully explained and worked out, corresponding to many of the examples given by Dr. Jones in his "Examination Questions" under the headings of Physics, Air and Ventilation, Sewage, and Miscellaneous.

JOURNALS AND MAGAZINES.

The British Journal of Tuberculosis.—The first number of this new publication has now been issued. The object of the journal is to deal with the many medico-sociological problems which gather round tuberculosis, more particularly

of the proteid molecule and the same may be said of the products of gastric and pancreatic proteolysis. But even, when all is said and done, what we obtain is clearer views as to the composition and constitution of the material in which the chemical processes of life are carried on, and not that the chemical processes themselves are clearer for what has lately been accomplished in physiological chemistry. After all "no laboratory can rival an animal cell." The immense importance of ferment action is insisted on. We may recall the observation of Ludwig that physiological chemistry may some day prove to be a chapter in the chemistry of catalytic action. Indeed, the extension of the idea of enzyme action into all phases of metabolic activity has been to effect a revolution in physiological chemistry.

To appreciate fully the importance of the variety of problems set forth the reader should have a good all-round knowledge of physiology and in addition should be conversant with organic chemistry in its modern aspects and developments. Perhaps the student of medicine would find it advantageous in studying the problems of metabolism if he made a point of reading as an introduction the chapters on cognate subjects in "Recent Advances in Physiology and Bio-Chemistry," edited by L. Hill.

These lectures are most comprehensive and present a very explicit account in the English language of the subjects with which they deal.

Syphilology and Venereal Disease. By O. F. MARSHALL, M.D., M.Sc. Vict., F.R.C.S. Eng., late Assistant Surgeon to the Hospital for Diseases of the Skin, Blackfriars; formerly House Surgeon to the London Lock Hospital. London: Baillière, Tindall, and Cox. 1906. Pp. x-509, demy 8vo. Price 10s. 6d. net.

THE author reminds us that since the work on Syphilis and Local Contagious Disorders written by Berkeley Hill and Arthur Cooper appeared about 25 years ago there has been no book published in England dealing in a systematic manner with syphilis and venereal diseases. Of late much light has been thrown on the pathology of syphilis by the experimental inoculation of monkeys by Metchnikoff and Roux, Neisser, Finger, and others, and by the discovery of the spirochæta pallida by Schaudinn and Hoffmann; an account of the research work is found in Dr. Marshall's pages. The important subject of parasyphilis, the conception of which originated with Fournier; the more recent evidence with regard to the question of the transmission of syphilis to the third generation; the question of paternal heredity; the syphilitic origin of general paralysis; the etiological factor of syphilis in arteriosclerosis, aneurysm, Bright's disease, cirrhosis of the liver, epilepsy, and other disorders of the nervous system; and other problems in syphilology are sufficiently discussed in this book. The portion dealing with syphilis is based chiefly on the teaching of Fournier and his followers: that dealing with gonorrhœa on the writings of Finger, Neisser, Jadassohn, and Balzer. On controversial points the author gives his own opinions. He emphasises the importance of syphilis and gonorrhœa as etiological factors in disease. When it is remembered that they are probably the oldest diseases which afflicted mankind, that they are both very contagious, that syphilis is the most hereditary of all diseases, and that gonorrhœa is the cause of a large proportion of the diseases from which women suffer, it is, as the author says, "difficult to overestimate their importance."

In the historical survey of syphilis Dr. Marshall tells us that the disease appears to have been known among the Hindus 1000 years B.C. and, on the authority of Klein, he states that mercury was used by the Hindus for the treatment of syphilis. Dr. Marshall says that Zambaco found bones with apparently syphilitic lesions in the ancient necropolis of Cairo showing that syphilis probably occurred

among the Egyptians. According to Dabry the oldest evidence of syphilis is found among the Chinese. In 2367 B.C. the Emperor Hoang-ti collected the medical writings which were then existing, and these have been translated by Dabry who states that the Chinese were acquainted with syphilis and treated it with mercurial inunction, that they differentiated between syphilis and gonorrhœa, and that they recognised the hereditary transmission of syphilis. Dr. Marshall writes that the existence of syphilis in prehistoric times has been assumed by the discovery of human bones showing signs of syphilitic lesions. At Solutr , where prehistoric human remains have been found, a woman's skeleton was found with nodes on the tibia which were regarded as syphilitic by Virchow.

The section on the pathology of syphilis brings out all the points very clearly before the reader. The bacteriology, the experimental inoculation in apes, the experiments in serotherapy, and the questions of reinfection and of re-infection in hereditary syphilis are all thoroughly gone into and discussed in a most interesting manner. At pages 306 and 307 the author gives the details of his scheme for the treatment of syphilis; the whole treatment is by metallic mercury, in the form of pill, gray oil injections, or inunction. The main objection to this programme is the number of years over which the treatment is spread. The three sections on parasyphilis, which is, perhaps, better called quaternary syphilis, are most instructive reading. The author quotes Ferrier's suggestion that the terms cerebral tabes, spinal tabes, and cerebro-spinal tabes should be substituted for general paralysis, locomotor ataxy, and tabo-paralysis. In a most useful appendix are given the methods of staining the spirochæta pallida, the method of staining it in sections, and the methods of staining the gonococcus. There is also a list of the chief preparations of mercury used for mercurial injections, with the dose and percentages of mercury in each and of the chief substances used for injection in gonorrhœa. The author likewise gives details of Zittmann's treatment of chronic rebellious cases of tertiary syphilis. With regard to the treatment of gonorrhœa in the male the wise rule is laid down that the urethroscope should never be used in acute or recent cases of urethritis. It is especially indicated for simultaneous diagnosis and treatment and should not be passed an unnecessary number of times for purposes of diagnosis only.

The book is up to date and we congratulate the author on its appearance. The print and binding are good and it is illustrated with five plates which are arranged at the beginning and at the end of the volume.

Notes on Blood-Serum Therapy, Preventive, Inoculation and Toxin and Serum Diagnosis, for Veterinary Practitioners and Students. By WALTER JOWETT, F.R.C.V.S., D.V.H., formerly Demonstrator of Comparative Pathology and Bacteriology in the University of Liverpool. London: Baillière, Tindall, and Cox. 1907. Pp. 204; Price 5s. net.

So far as we are aware this is the first book published in this country dealing with the subject of serum treatment and vaccination as applied to veterinary medicine, and the author is to be congratulated upon his success in giving a fairly complete account of this branch of research. The study of comparative pathology may do a great deal to throw light upon dark problems in human disease and medical men may find food for reflection in much that is contained in this little book. For example, the facts ascertained as to the diseases of sheep known as louping ill and braxy reveal a curious relation of immunity to season of the year, animals being immune to each of these diseases for certain months, but the season of protection not being the same for both maladies. In veterinary as in human

THE LANCET.

LONDON: SATURDAY, JANUARY 19, 1907.

The Medical Inspection of School Children.

IN the closing days of last year we received the report of the Public Health Committee of the London County Council submitting the report of the medical officer of health for the county for the year 1905. This interesting volume, which is dealt with at p. 185 of our present issue, contains as one of its appendices the report of the medical officer (education) for the year ended March 31st, 1906, and this appendix has been issued as a separate report which now lies before us. In the summer of 1905 the London County Council appointed 20 local assistant medical officers or medical inspectors, who began their duty on Sept. 1st, 1905. The duty of these officers, in the words of the report, is "to visit the schools of one district, spending three school sessions weekly in such work and making a weekly report on the schools visited." The school session, we gather from another portion of the report, is half a day—a scholastic day, that is—so that three school sessions would be about ten hours, and on an average six sessions are devoted to each school—that is, about two sessions to each department—viz., boys, girls, and infants; but among the poorer classes sometimes as many as three or four sessions may be given to any one department. The first selection of the cases to be seen is made by the teachers, but, as the report states, it is obvious that only very marked cases of defect are likely thus to be noticed. The early stages of the disease are therefore not detected. Some teachers, we learn, regard the medical officers' work as inquisitorial, and a few of the non-provided school teachers object to the medical inspectors' visits. We note that the report points out the difficulty of following up the cases, a difficulty which must be obvious to anyone who has had any experience in medical work among the poor. One interesting feature of the report is the remarks upon the conditions of school buildings and surroundings with respect to lighting, ventilation, heating, sanitation, and furniture. As regards these important hygienic armaments the reports of the local assistant medical officers are divided into those dealing with provided schools and non-provided schools. As is only to be expected, provided schools come out far the best, but without wishing to embark upon a singularly embittered controversy we must point out that a provided school obtains all its money from the rates without difficulty, which is not the case with a non-provided school. To turn to some of the detailed reports, that dealing with dental conditions is interesting and at the same time somewhat painful reading. The percentage of caries is very high and this, together with alveolar

abscess, is a fruitful source of septic poisoning and chronic gastric disorder. 245 children examined at the Michael Faraday school had on an average 3·9 carious temporary, and 2·8 carious permanent, teeth each, while 9·3 per cent. had alveolar abscess or purulent fistulae. Another interesting feature of the report is the section dealing with the physically defective in ordinary schools. Out of an attendance of 14,098 children there were 105 cases who were physically defective and of these 31 were suffering from rickets. Ricketty children apparently come from a special class, the existence of which is due to the general want of appreciation of the hygienic needs of childhood by ignorant mothers. As Mr. N. BISHOP HARMAN is quoted as saying, "The children are of a respectable class. They are well fed and clothed, but are altogether a flabby and pappy lot. Almost all of them have palpable glands in the neck. The head teacher returned over 100 as defective. This seemed absurd until the children were examined. Then the oft-repeated note of 'delicate' was justified. The children are too respectable to play in the street. They have no near park or fields. Their back gardens or house-rooms are small, so that they do not compare favourably save in cleanliness with children in poorer quarters who play freely in the open air. The teaching of hygiene is needed in the district."

It is interesting to note that a medical examination has recently been made in Liverpool of three large council schools in that city and some results of the examination were given in the letter from our Liverpool correspondent in THE LANCET of Jan. 12th. To mention some other points not referred to by our correspondent these three schools are respectively representatives of three classes, A, B, and C—A being a type of the best class council school where the parents of the child were well-to-do; B, a school where the parents were mostly of the labouring classes or small shopkeepers; and C, a type of the poorest classes where the parents belong almost entirely to the employed or casual labour section. The medical inspector was Mr. A. S. ARKLE and we note that he mentions that the children in the poorest school—namely, C—come out more healthy than those of schools of the types A and B. Mr. ARKLE suggests that the children in C class mostly live out-of-doors and so are hardier than children who are rather better off, a conclusion which is curiously like that of Mr. HARMAN.

The question of medical inspection of school children is one of the utmost importance, not only in its present aspect as regards the health of the community now, but also when we look towards the future and think that in 20 years time those of our present scholars who are then alive will be full-grown subjects of the empire. On them in great measure will depend the prosperity of our country. The system of medical inspection has not as yet been at work in this country for a long enough period to enable conclusions of any real value to be drawn, but in Germany, at all events, the results are obviously valuable, and there the system has been at work for some years. The chief difficulty, of course, which medical inspection has to deal with is ignorance—that is to say, ignorance of parents, ignorance of teachers, and ignorance of children themselves. The ignorance of the teachers is gradually being abated but the ignorance of

the pulmonary variety. Tuberculosis is not only a puzzle in pathology but appeals to all sorts and conditions of men as a question of world-wide importance. As we have already indicated¹ the journal will be issued under the editorship of Dr. T. N. Kelynack and the contents of the first number demonstrate the keen interest taken in the matter by the leading authorities. After some able editorial remarks Professor T. Clifford Allbutt contributes a paper entitled "The Study of Tuberculosis: A Retrospect," in which he vividly sketches the lines upon which the treatment of the disease has been conducted hitherto and then gives a brief outline of the evolution of the hygienic treatment. This is followed by an article by Dr. R. W. Philip headed "An Anticipation," dwelling among other matters on State and municipal responsibility. Dr. Philip considers notification to be a sound and necessary measure, and is confident that compulsory notification must be appealed to for the ultimate solution of the problem of tuberculosis. He refers to the fact that the Local Government Board for Scotland has declared in favour of notification. The result of this action will be watched with interest. Several pages are then occupied by a "Discussion" on the care and control of the consumptive poor. This is opened by Sir Richard Douglas Powell who deals with the disease as occurring in England and Wales. He considers the subject of practical reform and its difficulties. He says that it must, in truth, be confessed that at the present time there are no adequate means of treating the poor afflicted with consumption. The village medical practitioner or out-patient physician may make an early diagnosis but not one-hundredth of the cases so recognised can be taken in hand for proper treatment. He urges that co-ordination of effort on the part of philanthropic and municipal bodies is essential. He considers, however, that to adopt compulsory notification is doubtfully justifiable whilst there are no means of fulfilling its logical corollaries. Sir Richard Douglas Powell's remarks are characterised by thoroughness and sound common sense and should be carefully considered by medical officers of health before recommending the adoption of compulsory notification. Dr. Byrom Bramwell continues the discussion, taking the disease as it is seen in Scotland and the measures which are proposed for its control. He also urges the necessity of a combined effort for dealing with the disease. Naturally, he has much to say on the rôle of the Local Government Board for Scotland in reference to compulsory notification. Dr. Bramwell is of opinion that such a measure is essential if a thorough and determined effort is to be made to grapple with pulmonary tuberculosis and other forms of tuberculous disease. None of the objections which have from time to time been brought against compulsory notification are, in his judgment, of any real weight. Voluntary notification seems to him to be merely a makeshift and a compromise. Sir John W. Moore discusses the control of the Irish consumptive poor and although he says but little about compulsory notification appears to favour it. He gives a brief account of the measures available in Ireland for the relief of tuberculosis among the poorer classes. Amongst the original papers may be noted one on Tuberculosis and National Efficiency, by Sir Lauder Brunton; and one on Climate as a Factor in the Treatment of Tuberculosis, by Sir Hermann Weber. Other contents are descriptions of certain institutions for the tuberculous, including the King Edward VII. Sanatorium at Midsbury, remarks on health stations, and reviews and notices of books. We congratulate the editor on the success of the first number and once more wish our new contemporary every success.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY meeting of the Council was held on Jan. 10th, Mr. HENRY MORRIS, the President, being in the chair.

Some recommendations of the library committee for enlarging the library by alterations to adjoining rooms were approved and adopted.

Sir JOHN TWEEDY presented on behalf of Mr. Sidney Young a transcription of the Book of Ordinances dated 1435 of the Guild of Surgeons, with an illuminated frontispiece by Mr. Austin Travers Young. The following motion was carried:—

That the thanks of the Council be and are hereby given to Mr. Sidney Young, F.S.A., for his gift of a transcription of the Book of Ordinances dated 1435 of the Craft of Surgery of the City of London, and to Mr. Austin Travers Young for the illuminated frontispiece representing in proper colours the arms given to the craft by King Henry VII. in the year 1492.

Letters were read from Mr. W. Watson Oheyne and Mr. Frederic S. Eve resigning their seats on the court of examiners as from the completion of the pass examination in surgery commencing on Jan. 11th, in anticipation of the expiration of their period of office on March 20th. The PRESIDENT stated that the vacancies on the court of examiners occasioned by the resignations of Mr. Watson Oheyne and Mr. Eve would be filled at the meeting of the Council in February. Mr. Watson Oheyne does not propose to offer himself for re-election.

In reference to the letter from the Liverpool School of Tropical Medicine, asking the views of the College on the scheme for the extension of the course of instruction at the school, it was decided to state that the Council is of opinion that so far as the scheme relates to the subjects of tropical medicine, tropical surgery, and tropical hygiene it deserves approval. The Council notes with satisfaction that it is proposed to afford greater opportunities for clinical observation than exist at the present time.

Course of lectures for 1907.—The following are the arrangements for the annual course of lectures to be delivered at the Royal College of Surgeons. The lectures will commence on Feb. 4th and will be delivered on each Monday, Wednesday, and Friday, until March 22nd, with the exception that during the week in which the Hunterian festival takes place the course will be suspended.

Erasmus Wilson lectures.—Mr. Willmott H. Evans will deliver one lecture on *Leucoderma and Analogous Pigmentary Changes in the Skin* on Feb. 4th; Mr. Reginald C. Elmslie, one lecture on *Injury and Deformity of the Epiphysis of the Head of the Femur (Coxa Vara)* on Feb. 6th; and Mr. Kenneth W. Goadby, one lecture on the *Etiology and Pathology of Pyorrhea Alveolaris (Rigg's Disease)* on Feb. 8th. During the week following this lecture the Hunterian festival will be held, the course being resumed on the following Monday.

Arris and Gale lectures.—Mr. J. Faulkner Dobson (Leeds University) will deliver two lectures on the *Lymphatic System of Certain Portions of the Alimentary Canal*, on Feb. 18th and 20th, and Dr. Bertram L. Abrahams one lecture on *Some Clinical Applications of Physiology* on Feb. 22nd.

Hunterian lectures.—These lectures will be delivered by the following Hunterian professors: Mr. W. Sampson Handley, two lectures on the *Pathology of Melanotic Growths in Relation to their Surgical Treatment*, on Feb. 25th and 27th; Mr. J. W. Thomson Walker, two lectures on the *Renal Function in its Relation to Surgery*, on March 1st and 4th; Mr. J. Howell Evans, two lectures on *Cysts and Cystic Conditions of Embryonal Origin*, on March 6th and 8th; Mr. William Wright, three lectures on the *Prehistoric and Early Historic Inhabitants of England*, on March 11th, 13th, and 15th; and Mr. Cecil F. Beadles, who will conclude the course, has chosen the two following subjects for his three lectures to be delivered on March 18th, 20th, and 22nd: (a) *Anatomical Variations in the Larger Arteries of the Brain and their Medical and Surgical Aspects*; and (b) *Aneurysms of the Larger Cerebral Arteries with Special Reference to their Possible Diagnosis and Treatment*.

might be carried further, because alcohol goes on improving in quality long after five years, and 6d. per gallon per annum might be subtracted from the 11s. for a further period of three or four years at any rate. There is still one doubtful point that only practical experience is likely to clear up and this point our correspondent puts in the following question. Would the matter of mere cost always be the controlling motive? There are plenty of blended whiskies on the market to-day guaranteed to be three, five, or seven years old which contain spirit manufactured within the 12 months. Blenders contend that this is no fraud, because they add spirit of greater age than the guarantee and so make the average right. But even a little of the new spirit might carry with it unwholesome qualities, and a graduated tax ought to have excellent influence; if such a measure did not put an end to the practice the question could be considered of imposing absolute prohibition on spirit of less than a specified maturity.

Barmaids.

AMONG the many derelicts of the Parliamentary sessions of 1906, sacrificed, more or less, to political exigencies manifestly incapable of fulfilment, not the least important, in a social sense, was a Bill to restrict the employment of barmaids. We had occasion early last year to consider the bearings of this question at some length and in relation to a pamphlet in which the necessity for restrictive legislation was set forth; and we cannot but regret that this necessity was not brought under the notice of Parliament. It has been clearly established that the employment of young women as barmaids is in many respects objectionable, partly because it introduces them to an occupation which is seldom or never of a permanent character, partly because it often entails an amount of standing which is calculated to be injurious to health, and chiefly because it is attended with many temptations to drink and with many temptations to immorality. The temporary character of the employment depends, indeed, upon the obvious fact that young and good-looking barmaids are in demand as sources of attraction to the bars in which they are engaged; and that, as soon as they lose either their physical charms or a certain pertness which is perhaps incidental to the liquor traffic, they are liable to be dismissed in order to make room for successors who retain these characters. Even in the male sex, it is well known that employments for the young, which are not educative, that is to say, which do not afford opportunities for learning some definite form of industry, and which cast adrift, at early manhood, those who have been engaged in them, are of very questionable value to the community; and hundreds of boys, who have been tempted into such occupations by the prospect of good wages and temporary employment, have had only too much reason to regret their choice. In the case of women, with marriage to a bread-winner as a natural goal, the temptation to embrace a merely temporary calling is even greater than with men; and the results, when the matrimonial goal is not attained, are likely to be even more disastrous. Even under the best conditions, the industry of the bar is but little calculated to be a preparation for discreet wifehood and motherhood, or for the nurture of children calculated to add to the physical and

moral strength of the community. The barmaid is liable to be brought into intimate association with worthless and intemperate people, to be morally contaminated by much that she is compelled to see and hear, and to be forced to sacrifice her own sense of modesty and propriety to the demand of her employer that she shall make herself agreeable to his customers.

In these circumstances, there can be little doubt that legislation is required in the interests of the class of women more immediately concerned, or that such legislation would be regarded favourably by the public; but it is at least equally certain that it should be governed by careful consideration of all the consequences likely to be produced. The derelict Bill to which we have referred provided that, from the time of its enactment, no woman should enter for the first time upon the duties of a barmaid, and that only those should be permitted to continue in the employment who had already been so occupied for at least three months. A register of existing barmaids was to be constituted and placed under the control of the licensing justices and of the police, and licensed persons were to be prohibited, under heavy penalties, from employing in the capacity any women whose names were not upon this register; so that, as these women ceased, from various causes, to be available, the class to which they belonged would cease to exist. So far, the provisions of the Bill were reasonable, inasmuch as they would entail no hardship or loss of employment upon women already committed to the industry, and, indeed, would be calculated to increase their value; but here the reasonableness ends. The Bill further provided that nothing in its contents should prevent the wife or daughter of any licensed person from being employed as a barmaid upon the premises of such licensed person, and then subjected this provision to the condition "if the justices permit"; while a previous clause would give power to the justices, on the occasion of the annual renewal of any licence, to impose the condition that no barmaid should be employed on the premises, and, if the licensed person should refuse to assent to or should violate this condition, would allow the justices to refuse without compensation the renewal of the licence. In other words, it was gravely proposed to permit the daughters of publicans to serve as barmaids upon premises occupied by their parents and thus to engage in a form of industry deliberately condemned by the legislature as unfit for respectable women, while, on the other hand, it was proposed to subject the parental discretion in the matter to the absolute and irresponsible control of the licensing justices of the particular district concerned. There can be no doubt that under such a law the question whether the daughters of publicans should serve in their father's or mother's bars would be made a party one in many localities, and that the decisions of the justices upon the point would be governed by many considerations wholly irrelevant to the real merits of the case. The suggestion to admit parental responsibility as a general principle and then to override this responsibility by the decision of a casual bench of magistrates is equally inconsistent with liberty and with common sense. If it be improper to employ girls as barmaids, the impropriety is not diminished by the fact that they are the daughters of publicans; and no question which falls rightly under

parents will take many years to overcome. Take, for instance, the case of measles. The average parent has no idea that in by far the majority of cases the dangerous time for the child is not while the rash is out but after it has disappeared. Over and over again we have known parents in deliberate disregard of their medical attendant's advice let their children go out to sit on a cold doorstep directly the measles rash has disappeared, with the almost inevitable result that bronchopneumonia supervened. Teachers can be, and are, taught simple hygienic rules. To teach the parents is extremely difficult, if not impossible under present conditions, but unless medical inspection of schools can include some method of making parents obey some of the simpler rules of hygiene its benefits, great as they are, will be but a tithe of what they might be.

The Control of the Sale of Potable Spirits.

WE are very slow in this country in adopting reforms, for our reformers are often too extreme and it takes a long time to educate public opinion even half way. This is particularly the case as regards temperance, the thick-and-thin supporters of which may be divided into two classes—one believing in prohibition and determined to stop at nothing less, the other convinced that the proper method of reform is to place all sorts of restrictions on the public through the licensing laws. Both combatants pay little heed to the possibility of improving the liquor, which they are generally prepared to contend is bad at the best.

A correspondent—in the course of some remarks upon our article last week dealing with the alleged settlement of the question, What is whisky?—has brought to our notice some important facts concerning the control of the sale of potable spirits. The self-governing States of the British Empire have travelled a long way farther in real temperance reform than the Mother Country, and this time it is Australia that shows the way. The Customs and Excise regulations for spirits in the Commonwealth were much the same as in this country until a few months ago. The duties were somewhat higher and the margin between imported and home-made spirit a little wider, as befits a country prone to protectionist ideas, 14s. and 13s. per gallon respectively, against 11s. 4d. and 11s. Partly to increase the protection to the home distiller, about the wisdom of which there may be difference of opinion, and partly on moral and social grounds, about which there can be none, very considerable changes were effected last session. To begin with, the import duty was raised to 15s. per proof gallon. Then the Excise taxes were lowered to from 10s. to 18s., but it is in the graduation that the merit comes in. The lowest rate is applicable only to pure grape wine brandy and malt whisky, which will be admitted, according to predilection, as the best or least dangerous kinds of these forms of alcohol. We will quote intact the clause of the Act relating to whisky: "Whisky, distilled wholly from barley malt by a pot-still or similar process at a strength not exceeding 35 per cent. over proof, matured by storage in wood for a period of not less than two years, and certified by an officer to be pure malt whisky, per proof gallon 10s." The next rate in the

scale is for blended wine brandy which must contain not less than 25 per cent. pure grape wine spirit and pays 11s. Similarly blended whisky, distilled partly from barley malt and partly from grain, but containing not less than 25 per cent. pure barley malt spirit, pays 12s., as do also rum distilled from molasses and pure gin Spirits without ancestry or character are submitted to a tax of 13s. The graduation is not apparently very wide but it must be borne in mind that with the possible exception of high-class brandies there is no spirit that costs 3s. a gallon to manufacture in its natural state; consequently the worst spirit that has to pay 13s. costs more by the time it is cleared from bond than the best that has only to pay 10s. and thus the difference ought to be quite prohibitive as regards the former. We agree here, however, with our correspondent that "the system adopted by this Act is far from perfect." The best whisky, it is true, is distilled from barley malt; medium and passable stuff is obtained from maize and rice; and then there is a quick descent to potatoes, damaged grain, and even decayed and rotten fruit and vegetable matter. The last is supposed to be for methylation and industrial purposes, but there is no guarantee that some of it is not used for human consumption as a beverage. Besides, barley may be inferior or damaged, and the alcohol manufactured from it more mischievous than that obtained from sound grain of other descriptions, but so long as there is a margin of 2s. per gallon the chances are that the former will be used in preference, and the public be a loser rather than a gainer. The position is partially provided against by the time limit in the clause already quoted, which is really far more important than the graduated tax. Under the new Act no spirits are to be cleared for consumption unless they have matured in the wood for at least two years; and as regards importation, if spirits have not remained in bond during that length of time in Australia evidence must be afforded that they have complied with this condition elsewhere. Now good spirit improves with keeping and bad does not become good so there is a reasonable guarantee of good material if it has to run the gauntlet of at least a two years' novitiate.

But while the principle of this legislation is thoroughly sound, there are several reasons why its applicability is hardly the same in the United Kingdom as in Australia. One of these is the growing importance of alcohol in industry and the arts which renders it advisable to impose as few restrictions as possible on actual manufacture, whatever subsequent restraint may be placed on consumption. The real remedy in Great Britain is the time limit. If bad spirit will not mature so as to maintain any sort of fitness as a beverage it should be made so dear that no liquor dealer, wholesale or retail, could afford to sell it. This ought to be easily accomplished bearing in mind once more the low prime cost of most spirit. Let us take the existing duty as per basis, then instead of charging 11s. per gallon on all proof spirit, irrespectively of quality or age, let us suppose the charge to be made dependent on the spirit having remained in bond for four or even five years. If for every year short of that time there were added another shilling for duty, the clearance of inferior distilled spirit would in the ordinary commercial sense become prohibitive. The graduation indeed

by both Solon and Lycurgus; whilst Musonius, in a quotation preserved by Stobæus, says that the Greek legislators had forbidden women to practise such a thing and also to use any means for preventing conception. The "Apocalypse of St. Peter" discovered at Akhmîm in 1886 contains a scene in which the souls of unmarried women who have terminated their pregnancies by abortion are represented as being in hell together with the souls of the infants, and the latter direct jets of fire against their mothers. M. Reinach considers that this view of the criminality of abortion was derived from the Greek Orphic doctrines and that abortion was not reckoned immoral by the early Christians, but a very early extra-canonical Christian document known as the *Didachê*—i.e., "Teaching (of the Apostles)"—says: "Thou shalt not slay a child by abortion, nor what is conceived shalt thou destroy." Among nations or races who practised infanticide the prevention of childbirth does not appear to have flourished. There is one part of M. Reinach's argument which he develops elaborately but in which we are unable to agree with him. The description of the visit of Æneas to the underworld, which forms the principal subject of the sixth book of the *Æneid*, contains the lines (426-30):—

*Continuo auditas voces, vagitus et ingens
Infantumque animæ flentes in limine primo
Quos dolcis ritae exsortes et ab ubere raptos
Abstulit atra dies et funere mersit acerbo.
Hec juxta falso dantur crimine mortis.*

Before the gates the cries of babes new-born,
Whom Fate had from their tender mothers torn,
Assail his ears; then those whom form of lava
Condemned to die, when traitors judged their cause.

—Dryden.

In his metrical translation Dryden has expanded the phraseology of the original and introduced some ideas not expressly mentioned by Virgil. M. Reinach interprets the passage in a very different manner. He is so far from accepting the imagery of "tender mothers" that in his opinion the wailing infants had been the victims of abortion. Considering the singularly lucid and unaffected style of the *Æneid* (there are some riddles in the *Elogues*) the most easy and natural interpretation is that the infants had died while young without any specific reference to attendant circumstances. M. Reinach also seems to argue that because the French word "*sein*" means both "mammary gland" and "womb" therefore Virgil's "*ab ubere raptos*" may be taken to mean either "torn from the breast" or "torn from the womb." We cannot agree in this reasoning.

THE RESPECTIVE MERITS OF SEMMELWEISS AND OLIVER WENDELL HOLMES IN THE TREATMENT OF CHILD BED FEVER.

THE honour of priority in scientific discoveries is often claimed for more than one person and sometimes the balance of evidence is so even that posterity can never arrive at a unanimous verdict. The history of medicine supplies an instance of this kind in connexion with the prevention of puerperal fever—a disease which was once terribly rife in maternity hospitals but is now quite uncommon in hospital practice. In THE LANCET of August 4th, 1906, p. 301, we reviewed Dr. C. J. Collingworth's exposition of the part taken by Oliver Wendell Holmes, the American physician, in this great work, and afterwards, in our issue of Oct. 20th, p. 1090, we gave an account of the ceremonies at Budapest when the Hungarian memorial to Semmelweis was unveiled. In estimating the respective merits of these two great men the views of Dr. Collingworth and their natural complement in those of Professor T. Clifford Allbutt of Cambridge, who has said: "The Benefactor to whom the world's gratitude and memorial are due is he who makes the thing go, an achievement which comes after heroic sacrifice and a life's devotion, as in the instance of Semmelweis. That another man [O. W. Holmes] should have hit on the same idea, as some other

man always has, is to that other man's great *personal credit*, and he deserves the record in his biography, but if he did not expend himself upon it, and but for the man who did, the idea would have emerged and developed much later, I do not think he, but the effective person, deserves the chief honour."

THE DIRTY BLOTTING PAD.

It may reasonably be doubted whether the highly besmudged blotting pad is innocent as regards disease germs. In the act of writing the blotting pad is commonly breathed upon and bacteriological experiment has shown that micro-organisms may be projected a long distance by the breath. Blotting paper being an absorbent of moisture any septic matter would be rapidly dried on it and reduced to a readily transferable substance. Inkpots, again, are nearly always left open and consequently dust readily gains access to them, carrying in its load of micro-organisms. These in their turn are transferred by the pen to the paper and thence to the blotting pad, where they are left high and dry to be scattered once more in the room on the smallest provocation. Some inks, of course, contain an antiseptic but it is not likely that all inks serve as germicides. It may be a counsel of perfection to lay down that the blotting pad should be a fresh spotless sheet every day but when infectious respiratory disease is endemic such a precaution would not be so fatuous as might be supposed. Apart from this, everyone appreciates a clean blotting pad which will dry the writing without smearing it. Often enough the blotting pad is one mass of blotchy characters and ink-stains representing a usage of days, weeks, or even months. In such a condition its function has not only come to an end, any further use of it invariably leading to smears and annoyance, but it must be also bacteriologically filthy.

THE USE AND ABUSE OF SODIUM BICARBONATE.

In the whole range of drugs in common use there is perhaps none the pharmacological value of which is considered less open to question than sodium bicarbonate. It has enjoyed a wide vogue for many generations in cases of gastric pain and hyperacidity of the stomach. It is important, therefore, to notice in the *Bulletin des Sciences Pharmacologiques*, 1906, No. 10, a monograph by Dr. Léon Meunier in which the value of this classic remedy in allaying gastric pain is discredited. Dr. Meunier states that the action of the drug is generally explained in the following way. Gastric pain is due to an excess of hydrochloric acid, which causes no inconvenience during digestion owing to its absorption by the food. But when the stomach is empty the acid begins to exercise an irritating action upon the sensitive nerves of the mucous membrane. The acid is neutralised and as a result the pain is removed by the administration of bicarbonate of sodium at an interval of two, three, or four hours after a meal. Having doubts as to the validity of this theory Dr. Meunier set himself to investigate both clinically and chemically the part played by the drug. He found that in nearly every one of 16 cases the most severe pain was experienced when the hydrochloric acid in the stomach was at a minimum. As bicarbonate of sodium was uniformly successful in relieving the pain Dr. Meunier was led to attribute its beneficial action not to a mere neutralising effect but to the production of carbon dioxide which exerts a calmative effect on gastric pain. The acceptance of this hypothesis suggests the unsuitability of administering sodium bicarbonate alone as a source of carbon dioxide, since its therapeutic action is proportional to the quantity of hydrochloric acid present in the stomach and is liable, therefore, to great variations. Moreover, the saturation

parental control can be properly transferred to the decision of the licensing justices.

The whole question affords a fresh illustration, following many which have preceded it, of the inadequacy of present Parliamentary methods to meet the growing needs of a civilised community. In our elaborate social system new conditions which call for some adaptation to them of former laws, customs, or requirements are constantly arising; and we endeavour to meet these conditions by an adherence to methods of legislation which sufficed for the England of the STUARTS. Every Government department is aware of many directions in which law should be modified to meet the changing circumstances of the day; and every department alike shrinks from any endeavour to carry out what is seen to be necessary. There can be no doubt, of course, of the general wisdom of avoiding hasty legislation; but in this country we are fast falling into the very opposite error, and are permitting obsolete forms and superfluous precautions to stand in the way of changes which all admit to be required. The whole system of private Bills, of balloting, of blocking, and of many of the formalities of Parliament, is now far more operative in hindering useful measures of reform than in preventing changes for the worse; and it is high time that Parliamentary procedure was remodelled by the light of modern requirements. It ought to be rendered possible for the head of each of the great departments of the State to bring in a Bill containing any minor legislative changes shown to be necessary by the experience of the department over which he presides, to have these Bills examined and reported upon by a sufficiently large committee, and to have them pushed on to enactment by all the force of the Government. Mr. BURNS has lately told the House of Commons that the Local Government Board could not deal adequately with certain requirements about food until an amending Bill in relation to them had received the sanction of Parliament; and, as this amending Bill has perished along with others the public may still be poisoned with impunity. There are a score of questions as to which it is urgently necessary to increase the powers of the administration but as to which nothing is done, or probably will be done, until evils which might be nipped in the bud have become intolerable. And all this because the most crying administrative needs of the country are neglected or forgotten amid the bawling of politicians and of placemen.

Innotations.

"No quid nimis."

MALADVERTISEMENT.

ON more than one occasion under this heading we have commented upon the action of the Capsuloid Company in coupling the name of THE LANCET with the advertisement of their wares. In 1900 the Capsuloid Company sent to us specimens of hæmoglobin capsuloids. We analysed them at the time and stated in THE LANCET of August 11th, 1900, that they contained, as they then did, whatever they may do now, hæmoglobin in an oily excipient. The Capsuloid Company having obtained this testimonial, then flooded the press with advertisements setting forth the

virtues of capsuloids as promoting the growth of the hair. They added, "Send for Free Hair Booklet and copy of what 'The Lancet' says." We called their attention to this, and after some time they altered this statement into "See for Free Hair Booklet and copy of 'The Lancet's' statement." We have received many communications from various correspondents wishing to know if we in any way endorse the statement that capsuloids are good for the hair. We therefore wish to state distinctly that THE LANCET never said anything about hair or implied in any way that the hæmoglobin capsuloids had any influence upon its growth. The action of the Capsuloid Company in issuing these advertisements is distinct fraud upon the public. They imply, and deliberate so, that THE LANCET recommended capsuloids for the growth of the hair. This is not true, and the advertisement as it stands is written with the deliberate intention to deceive.

ARMY MEDICAL SERVICES: THE RECONSTITUTED ADVISORY BOARD.

IN our issue of Dec. 29th, 1906, we were able to lay before our readers an official communication from the War Office giving an account of the constitution of the reconstructed Advisory Board for Army Medical Services. The new Board was to consist of, in addition to the Director-General, a chairman, a civilian sanitary expert, a civilian physician, a civilian surgeon, and a civilian physiologist, an officer of the Royal Army Medical Corps specially qualified in sanitation, an officer of the Royal Army Medical Corps with special knowledge of tropical diseases, an officer of the Royal Engineers from the department of the director of fortifications and works, and the President of the Medical Board, India Office, as well as the Deputy Director-General, who will act as vice-chairman. Those representing the various positions above mentioned are as follows: chairman, the Director-General, Army Medical Service; vice-chairman, the Deputy Director-General, Army Medical Service; members, Colonel D. Bruce, C.B., F.R.S., M.B. Edin., R.A.M.C. (as expert in tropical diseases), Colonel G. K. Scott Moncrieff, O.I.E., R.E. (assistant director of fortifications and works), and Lieutenant-Colonel C. H. Melville, M.B. Edin., R.A.M.C. (as expert in sanitation). The civilian members are the following: Sir F. Treves, Bart., F.R.C.S. Eng., G.C.V.O., as civilian surgeon; Dr. J. Ross Bradford, F.R.S., F.R.C.P. Lond., as civilian physician; Dr. Louis C. Parkes, as civilian sanitary expert; Dr. M. S. Pembrey, as civilian physiologist; and Sir Charles A. Cameron, M.D. R.U.I., F.R.C.S. Irel., C.B., as representing Irish sanitation. The representative of the India Office is Surgeon-General A. M. Branfoot, C.I.E., I.M.S., retired; and the Secretary is Lieutenant-Colonel C. H. Melville.

ABORTION AMONG THE ANCIENTS.

THE declining birth-rate in France and many Anglo-Saxon countries has been much discussed recently chiefly from the modern ethical, sociological, and political points of view and not from the historical standpoint. An essay by M. Salomon Reinach, the eminent Parisian scholar, however, gives much information upon the subject of abortion in connexion with the morals and regulations of classical civilisation. He dwells upon the punishment stated by classic authors to have been inflicted in the Inferno in Hades upon women who had been guilty of the practice of abortion—a retribution, proved by various quotations, awarded to the criminals by the spirits of the children themselves in the Inferno. The evidence concerning the consideration by the ancients of abortion as a criminal act commences in Greece with the "Hippocratic oath" which says, "I will not give to any woman an abortive pessary." Galen tells us that abortion had been prohibited

yellowish discolouration of the sclerotics. The liver was smaller, the right hypochondrium was less full, and the hard consistence of the liver could be appreciated. The urine was slightly brownish and scarcely gave Gmelin's reaction. This case shows that epiploexy may produce in three years an extensive collateral circulation between the portal and systemic veins. M. Le Gendre and M. Deglos attribute the beneficial effect of the operation to the "blood-letting," which they think may have considerably modified the vascular condition of the liver and diminished the pressure in the biliary canaliculi. The diagnosis was hypertrophic cirrhosis of the liver.

HOSPITAL MISUSE AND EXCESSIVE MEDICAL CHARITY.

A MEETING of the Marylebone division of the Metropolitan Counties branch of the British Medical Association will be held at the rooms of the Medical Society of London, Chandos-street, Cavendish-square, at 8.30 P.M. on Thursday, Jan. 24th, when there will take place the second of a series of discussions on "Economic Problems in the Practice of Medicine." The motion submitted will be—

That the development of properly organised systems of mutual insurance for the costs of illness offers the most readily available method of reducing the admitted evils of excessive medical charity and the misuse of hospitals.

The debate will be opened by Dr. R. C. Baist, Mr. H. W. Armit, Mrs. Scharlieb, M.D., Dr. L. S. Moftmann, and Dr. J. H. Keay.

SPONTANEOUS ABORTION OF SYPHILIS IN THE PRIMARY STAGE.

It is generally accepted that in the absence of treatment the primary stage of syphilis is always followed by the secondary. At the American Association of Genito-Urinary Surgeons in New York last year Dr. R. W. Taylor of that city quoted Barnett's statement that in certain cases most typically Hunterian sores were not followed by secondary symptoms, and brought forward the following cases in support of this view. A Jewess, aged 14 years, had a typical indurated chancre of the lower lip, with a bubo of the size of a walnut. The secretion of the sore contained the *spirochæta pallida* in abundance. Mercurial plaster was applied but no constitutional treatment was adopted, as it was decided to await the development of systemic manifestations. The chancre subsided in about a month and then the bubo also underwent involution. Observation of the girl for eight months showed no constitutional symptoms. In a second case a woman was seen with an encrusted chancre on the right labium minus which had existed for two weeks. She had had coitus with only one man who was under treatment for an excoriated nodule in the coronal sulcus and inguinal buboes, and who subsequently developed constitutional syphilis. In the woman's case typical induration and pronounced adenopathy showed that she had received syphilitic infection. Under local antiseptic treatment she recovered in three months, to the surprise of Dr. Taylor. Her body was examined every week for six months, but no eruption could be found. She was watched for 18 months without further result. She married and had two healthy children. In a third case a man, aged 35 years, had a small chancreous erosion behind the sulcus and near the frenum which was regarded as suspicious and was treated with black wash. In three weeks the lesion developed characteristically. It presented marked induration and a greenish-yellow membrane. The efferent lymphatics and the vessels and glands became enlarged. Recovery followed. The patient was watched for five years without showing any evidence of constitutional syphilis. In a fourth case a man, aged 28

years, had a single coitus with a woman who was subsequently found to have condylomata of the vulva. Three weeks later he presented erosion and hardening of the lips of the meatus. Typical induration developed and extended half an inch backward with chancreous erosion and typical yellowish-green membrane. The inguinal glands became enlarged and hard. Under local treatment recovery took place. The patient was watched for 16 months and showed no signs of constitutional syphilis. Dr. Taylor referred to other reported cases, including one published by Kaposi. In all ten cases have been reported by seven observers. Probably many will require further evidence to convince themselves of the existence of exceptions to a well-recognised generalisation even when these are brought forward by such a well-known observer as Dr. Taylor. However, there is nothing unreasonable in supposing that certain persons may develop so great a natural resistance to the syphilitic virus that recovery takes place in the primary stage and the disease is aborted. Adopting the teaching of Sir A. E. Wright, we might suggest that inoculation of the virus is followed by the development of a high opsonic index.

NOTES UPON HEALTH RESORTS.

IN another column of this issue of THE LANCET a short article will be found upon the Riviera from the pen of Mr. James Stanley Little, and we take the opportunity of saying that we shall continue to publish at convenient intervals authoritative notes upon health resorts, continental and British. We have chosen a communication from a layman with which to start the series, because the layman puts his views in such a way that it can be at once appreciated what sort of information the public want from the medical profession. The questions asked of our readers by their patients concerning health resorts are not necessarily of a highly scientific character, but upon their answer may depend entirely the suitability of a particular locality for a particular case. All sorts of points of convenience and economy have to be considered in the recommendation of a place of sojourn as an adjunct to medical treatment, and it is a fact that the public is quicker to recognise this important point than its medical advisers have sometimes been.

AT the Medical Graduates' College and Polyclinic (Chenies-street, W.C.) to-day (Friday, Jan. 18th) a discussion on the Present State of the Leprosy Question in South Africa will be introduced by a paper read by Dr. R. Sinclair Black. Dr. Black was until recently the resident medical officer on Robben Island (the home for lepers of Cape Colony). His personal familiarity with the details of his subject may be expected to make the occasion one of unusual interest.

IN our reference last week to Sir Henry Pitman we stated that he was "but six months away from the hundredth anniversary of his birthday." We find that this is not quite correct, as he was born on July 1st, 1808, and consequently July 1st, 1907, would represent the commencement, not the conclusion, of his centenary.

Dr. H. Charlton Bastian will read a paper at the meeting of the Royal Medical and Chirurgical Society on Jan. 22nd, taking as his subject the *De-novo* Origin of Bacteria, Bacilli, Vibriones, Tornæ, and Moulds in certain previously Superheated Saline Solutions contained within hermetically-sealed Tubes.

A TELEGRAM from the Governor of the Mauritius received at the Colonial Office on Jan. 11th states that for the week

of the hydrochloric acid by the sodium salt retards the progress of gastric digestion, as pepsin acts only in an acid solution, and it further retards intestinal digestion, as the acidity of the gastric juice has been shown by Pawlow to be the specific excitant of the pancreatic gland. This drug may thus reduce a patient to a state of alkaline cachexia which led Trousseau to utter the dictum: "The abuse of alkaline drugs has done more harm than the abuse of mercury." Dr. Meunier suggests that it is more rational to produce carbon dioxide in the stomach by means of tartaric acid and a mixture of carbonates, so chosen as to evolve the gas slowly and continuously without modifying the acidity of the gastric juice. The tartaric acid is prescribed in one gramme powders and the alkaline powders contain sodium bicarbonate 0.4 gramme, calcium carbonate 0.3 gramme, and hydrated magnesium carbonate 0.2 gramme. The patient is directed to add an acid and an alkaline powder separately each to half a glassful of water and when the pain commences to take alternately tablespoonful doses of the acid and alkaline draughts. Dr. Meunier has found that gastric pain is most readily relieved by this treatment, whereas the administration of the alkaline draught alone is much less efficacious. From clinical experience he concludes that the carbon dioxide acts as a sedative by accelerating the evacuation of food from the stomach.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

A MEETING of the council of this Fund was held at the Mansion House on Jan. 10th, under the presidency of the Lord Mayor, for the purpose of filling vacancies on the council and committees. Among those present were Lord Oheylesmore, Sir Ernest Tritton, Sir William Selby Church, Sir E. Durning-Lawrence, Sir Savile Crossley, Mr. F. H. Norman, Mr. J. Astley Bloxam, Canon Fleming, Dr. J. G. Glover, Mr. T. Bryant, Mr. A. Pearce Gould, and Mr. Wakley. Mgr. Howlett, the administrator of the Roman Catholic Cathedral at Westminster, was elected to fill the place of Canon Pyke, who has resigned by reason of age, and it was decided to ask the Bishop of Southwark to make a nomination in the case of a second clerical vacancy. Lay vacancies were filled by the election of Dr. James Andrews, Mr. C. E. Layton, Mr. Frank Debenham, Mr. A. G. Phillips, and Mr. A. Millar, conditionally upon their willingness to serve. Sir Frederick Treves, Mr. Frank Bevan, and Sir Joseph Dimsdale were elected on the Distribution Committee, and a new committee, to be called the Finance Committee, was constituted as follows:—Sir E. Tritton, Sir W. S. Church, Sir John Bell, Mr. J. H. Hale, and Mr. J. H. Buxton. Lord Oheylesmore and Mr. Pearce Gould were elected to the General Purposes Committee.

"JUDY."

THE old-established comic paper *Judy* has been, we are informed, taken over by an entirely new management, and the proof of the change of spirit and tactics will be seen in the issue of the paper bearing to-day's date. It has been represented to us by Mr. F. W. Vogt, the new editor, that our leading article last week, commenting without regret upon the conviction of the late editor and proprietor Edward de Marny, might interfere with the success of what is practically a new and perfectly clean newspaper, and Mr. Vogt, at the same time, has forwarded to us an advance copy of the first issue under his superintendence that we may judge of the accuracy of his words. We congratulate him and his staff, and no less the new proprietor, upon the result of their revolutionary work. Every one of the offensive and mischievous advertisements of which we complained has disappeared, and *Judy* has become a perfectly respectable old lady, without, we may add, losing any of her power to amuse. We wish Mr. Vogt good luck in his intention to

regain for a widely-known and long-established newspaper the prestige of its earlier existence.

PRESENTATION TO MR. W. WATSON CHEYNE.

ON Dec. 21st, 1906, in the board room at King's College Hospital, Mr. W. Watson Cheyne was presented with his portrait by his old house surgeons and dressers as a permanent token of their esteem for his teaching and their regard for his scientific work. The presentation was made by Mr. Peyton Beale, as Mr. Cheyne's first house surgeon, on behalf of the subscribers. Dr. R. T. Hewlett moved a vote of thanks to the artist, Mr. W. O. Penn, for having produced such an excellent likeness, for it was greatly admired by all who had seen it. Mr. Cheyne expressed his thanks to the subscribers, saying that he should never forget how fortunate he had been in having such excellent workers in his wards.

THE EFFECTS OF EPILOPEXY FOR PORTAL OBSTRUCTION.

Talma's operation, or epiploxy, has been performed with considerable success for the treatment of the portal obstruction and consequent ascites due to cirrhosis of the liver. A collateral circulation is established between the portal system and the veins of the abdominal wall and the obstruction is relieved. Opportunities for observing during life the anatomical results of operation must be few. At the meeting of the Société Médicale des Hôpitaux de Paris on Nov. 30th, 1906, M. Le Gendre and M. Deglos reported the following case. A man, aged 39 years, was admitted into hospital on Feb. 18th, 1906. About six years previously he was addicted to alcohol and suffered from gastro-intestinal troubles. In 1903 he was in San Francisco and had jaundice but the feces remained coloured. Although he had no pains in the hepatic region gall-stones appeared to have been diagnosed and an operation was performed. Not finding any calculi the surgeon performed Talma's operation, although there did not appear to have been any signs of cirrhosis of the liver. The jaundice gradually diminished but six months later it recurred. In 1904 the patient returned to France where he was treated for 18 months without result by a number of practitioners. On admission there was deep jaundice, the urine contained an abundance of bile pigments, and there was obstinate constipation but the feces were of normal colour. The liver was enlarged, the spleen was palpable, and there was intense pruritus. The patient's condition became worse; incessant and more and more violent itching prevented sleep in spite of all hypnotics. He wasted and his colour changed from bronze green to olive green. The liver dulness measured 19 centimetres in the nipple line. The consistence and form of the liver were difficult to estimate as its lower border was masked by a broad and thick layer which extended to the right and left of the scar of the operation. The spleen extended below the ribs and measured 18 by 11 centimetres. There was slight pyrexia, the temperature rarely rising above 100.4° F. Laparotomy was performed in June, 1906; by M. Hartmann. On dividing the abdominal muscles no increased vascularisation of the subcutaneous tissues was found, but on dividing the muscles an abundant venous network which became almost angiomatous on reaching the external surface of the peritoneum was observed. The hæmorrhage was so severe that it was not thought wise to proceed and the wound was closed. After the operation the patient was in a state of profound depression which was thought to be hopeless. But a fortnight later some diminution in the jaundice was observed. He recovered and was able to leave the hospital with some jaundice and the liver and spleen nearly as large as before. In November, 1906, the jaundice had completely disappeared from the skin and there was only a slight

"The elements of the blood therefore visible by the microscope without any addition or manipulation are: 1st, the red corpuscles; 2nd, the colourless corpuscles; 3rd, molecules and granules in the interior of the colourless corpuscles; 4th, molecules and granules not inclosed in any corpuscular tunic; 5th, the fibrine." Under the action of reagents on white cells he describes the circulation of cell contents. Previously to Addison's time, white blood cells had been seen in the cold-blooded animals and were thought to be the nuclei of the red cells set free. Addison's experiments on inflammation and the vascular changes accompanied by diapedesis are quite as accurate as anything written within the last ten years.

It would follow as a self-evident conclusion that pus was altered colourless corpuscles, but with his usual correctness of detail he does not postulate this until he has carefully researched the component parts of pus. Here are his final deductions on pus: "The conclusions to which these experiments lead are, that pus corpuscles of all kinds are altered colourless blood corpuscles and that all liquid colourless, abnormal discharges are effusions of the liquor sanguinis, containing more or less of the fibrine and corpuscles in varying proportion. No new elementary particles are formed by inflammatory or diseased action." This is a wonderful advancement over the belief of his time—viz., that pus came from grown granules and molecules of the blood and tissues.

Addison's next field of research was the lungs and here again he is a pioneer, giving the first accurate description under the microscope of lung structure. It was necessary to know the normal to appreciate the abnormal deposits—viz., tubercles. The quotation of a few lines will enable one to grasp the clearness with which Addison worked out the minute anatomy of tubercle. "Objects composing tubercles of the lungs originate from blood corpuscles and not from any peculiar formation foreign to the normal structure of the tissues. In the first place a tubercle involves or includes in its substance the vesicular structure of the lungs; minute blood-vessels, lobular passages, and air cells, ... the blood-vessels are no longer permeable but their presence may be demonstrated. Secondly, I shall endeavour to show that the tubercles are composed of abnormal epithelial cells, ... Granulated corpuscles of a tubercle are sometimes very large (1/800 in 1/1000). There appears from my researches to be no distinction whatever between spots of lepra on the skin and tubercles in the lungs, if we except those arising from the different situation and function of the tissues."

William Addison's work was a stimulus to O. J. B. Williams, Wharton Jones, and James Paget, yet none of them seemed to have the accuracy and keen insight to recognise in the next 25 years that Addison's views of inflammation were essentially correct. In 1868, when Cohnheim first published his contribution on inflammation, the English pathologists began to discover that William Addison antedated Cohnheim's observations some 25 years. It has escaped observation, however, that he first recognised leucocytes as an integral part of human blood and that he attempted a classification of them on the bases of their granules, thus antedating Ehrlich's classification (1876) a third of a century. It is easily understood why his observations on leucocytes in inflammatory blood should have gone unnoticed inasmuch as it is only of recent date that it has become a subject of first importance to the clinician. The blood platelets, however, are a subject of interest to skilled investigation alone and it is difficult to understand how his observations remained unmentioned for 60 years.

* London Medical Gazette, December, 1840, and January, 1841.

DONATIONS AND BEQUESTS.—By the will of Mr. Arabella Vernon, of Penalt, Weston-super-Mare, Somerset, the following bequests are made: £2000 to the Royal National Hospital for Consumption at Ventnor; £2000 to the Royal United Hospital, Bath; £2000 to the Indigent Blind Visiting Society; £2000 to the Royal Hospital for Incurables, Putney Heath; £2000 to the West-End Hospital for Paralysis and Epilepsy, Welbeck-street; £2000 to the London Fever Hospital at Islington; £2000 to the Central London Ophthalmic Hospital; £2000 to the Central London Throat and Ear Hospital, Gray's Inn-road; £2000 to the Royal Hospital for Diseases of the Chest, City-road; £2000 to the Brompton Cancer Hospital; £2000 to the Deaf and Dumb Asylum (office in Cannon-street); £2000 to Guy's Hospital; and £2000 to the Rebuilding Fund of the Western Ophthalmic Hospital, Marylebone-road.

NOTES UPON HEALTH RESORTS.

A LAYMAN'S VIEW OF THE RIVIERA.

BY JAMES STANLEY LITTLE.

UNTIL comparatively recently the Riviera, in any case the French Riviera, had enjoyed an unassailed reputation as the health resort of the world. Even now, although that reputation has been challenged seriously from several quarters, the belief in its sanitary perfections is general and widespread. Without calling in question the substantial accuracy of this popular verdict, four seasons' residence from end to end of the Riviera, from Toulon to Leghorn that is to say, ought to bring home to any reflective person the fact that it is wise to recognise certain special or local conditions which go to qualify the unreserved acceptance of this enviable reputation.

It would ill become a layman to attempt to enter into those highly debatable and technical discussions as to whether the warm and sheltered parts of the earth are so favourable to consumptive patients as those altitudes to which many of our most distinguished chest physicians now send their patients. I may say in passing, however, that while I have personal knowledge of scores of consumptives who have been restored to health by the voyage to South Africa and residence in suitable parts of that benighted country, with equal opportunities of knowing I can remember comparatively few cases where the like happy result has followed on wintering in the Riviera. In any case it seems to be conceded, with something approaching unanimity, that persons hitherto free from pulmonary diseases run a risk, not inconsiderable, of contracting them in places where the air and soil are impregnated with the germs of lung disease. Latterly this consideration has operated in favour of the Italian Riviera, which, not being so full of tuberculous sufferers as the French Riviera, has been considered less dangerous as a health or pleasure resort. It has militated greatly against the popularity of such towns as Mentone. It seems to me that the clouds of dust which fill the air (a plague vastly increased in these days of automobilism), the startling variations in temperature experienced in any ordinary day from end to end of the Riviera, especially the chill dampness of the sunset hour, expose delicate persons visiting that coast to serious risks which they do not run in patronising many of the winter resorts of England. As touching this varying temperature, the changes in the weather in any one day, during the last four seasons in any case, have often been so great and so frequent that grave consequences have resulted to many invalids. Then there is that spell of three weeks' rain to be reckoned with, and those cyclonic storms, which are becoming so general as almost to change the character of the whole district so far as climate goes. This year the bad seasons of the previous three years has culminated, as all the world knows, in a ten days' storm of lightning, hail, and rain of unexampled severity. Indeed, it is necessary for the sick, and, for that matter, the sound also, to take great care and to adopt almost painful precautions in this country.

It is commonly asserted that the Italian Riviera, throughout its entire length, is damper than, and that the air lacks something of the stimulating and resilient qualities of, the French littoral. I should be inclined to dispute this view so far as the coast of the Alpes Maritimes is concerned. That coast, as a whole, does not compare favourably, I think, with many parts of the Italian Riviera from Ventemiglia to Spezia. Nor can it be said that in the matter of evil smells, the pollution of the foreshore and sea, and of the towns themselves, the French resorts are, on the whole, in any better case than their Italian rivals. The drainage of the former is generally of a more advanced type theoretically than that of the Italian towns. But the odours of Hyères, not merely those of the charming old town but of the fashionable quarters also, are as noxious as any one endures in the Italian towns and villages; while for general untidiness, and carelessness in disposing of household refuse, many centres of population in Provence, marine as well as inland, are as open to censure as the much abused cities and villages of Northern Italy. What saves Provence, or to be more explicit, what saves the littoral and its hinterland from Cannes to Hyères, and especially the nascent winter quarters between San Raphaël and Bormes, is the mistral, which blows away the smells and renders this stretch of the

ending Jan. 10th there were 15 cases of bubonic plague and 6 deaths from the disease.

Mr. Edward Mason Wrench, F.R.C.S. Eng., has been appointed a member of the Fourth Class of the Royal Victorian Order.

WILLIAM ADDISON, M.D.: THE WORLD'S FIRST HÆMATOLOGIST.

By HUGH A. MCCALLUM, M.D., M.R.C.P. LOND.,
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YEARS ago while waiting for the termination of a tedious confinement I was asked to inspect some medical books which the husband of my patient had obtained at an auction sale. Among them was Vol. XI. of the Transactions of the Provincial Medical and Surgical Association of 1842 (but published in 1843). It contained the plates and classical article on Inflammation by William Addison. This volume contains the presidential address by James Black. A glance at this retrospective address in medicine will give one a fairly accurate idea of the scientific attitude of the profession at that period on the subjects of blood corpuscles and inflammation. We find from this address that William Addison was then considered an authority on blood.

William Addison, who first discovered the meaning of diapedesis of leucocytes in inflammation, is little known by modern pathologists and clinicians. His name is usually confused with Dr. Thomas Addison, the discoverer of disease of the suprarenal gland, and at one time physician to Guy's Hospital, and for many years the acknowledged spirit which influenced the medical doings at this hospital. This is the statement of Sir Samuel Wilks, the biographer of Thomas Addison, and no higher tribute could be paid him, inasmuch as among his colleagues were such men as Bright, Hilton, Golding Bird, Hodgkin, Gull, Fagge, and Wilks himself. In addition to his celebrated monograph on suprarenal disease, which contains his classical description of progressive pernicious anemia, the life and labours of Thomas Addison are not only preserved by Guy's Hospital and its attached museum but by a biography of him written by Sir Samuel Wilks.

After searching the Library of the Royal College of Physicians of London one finds very little bearing on the life of William Addison. He practised at Malvern and was physician to H.R.H. the Duchess of Kent. His earliest writings were on the blood, published in the *London Medical Gazette* (December, 1840; January, 1841; March, 1841; and April, 1842). He delivered the Goulstonian lectures in 1859 on Fever and Inflammation (Dr. H. D. Rolleston kindly presented me with an autographed copy of a reprint from the *British Medical Journal* of these lectures). His works include three published volumes—viz., "Experimental Research with the Microscope," "Healthy and Diseased Structure," and "Cell Therapeutics." Like his namesake he wrote an extensive article on *Pneumonia*. I shall pass over all his other writings to point out some overlooked observations in his classical memoir "Blood Corpuscles, on Inflammation and on the Origin and Nature of Tubercle in the Lungs." This essay, with plates of microscopic structures, covers 74 pages, and some idea of the range of research can be gathered from the headings on its first page—viz., 1. Human Blood (a) red corpuscles; (b) colourless corpuscles; (c) molecules and granules; (d) fibrine. 2. Pus Cells. 3. Blood Cells and Lymph Globules of the Frog. 4. Inflammation. 5. Cells, flowers, fruit, leaf, pollen, grains, spores, animal; vesicle of the liver, epithelium, animalcules, colourless blood corpuscles. 6. Aeriferous Structure of the Lungs. 7. Tubercles. In speaking of his microscope, he remarks: "The powers I have used magnify 250 and 500 diameters linear." We see that he was equipped with dry lenses of fairly good powers. In addition to being the acknowledged discoverer of the part played by vessels and leucocytes in inflammation—antecedating Cohnheim 25 years—it can be fairly claimed for him that he was the world's first great hematologist. It was he in this same memoir who first recognised leucocytes as a separate blood element and the mammalia. Previously to his time and cell in man and the mammalia. Previously to his time and for years after leucocytes were recognised as the nuclei of the red cells: "A corpuscle deprived of its coloured capsule" the red cells: "A corpuscle deprived of this blood cell. In this

classical article on inflammation he gives a most accurate description and diagram of blood platelets. He was likewise the first to recognise the fibrillar arrangement of coagulation, and while he makes no statement his diagrams show he not only recognised its fibrillar arrangement but that these took origin from a mass of blood platelets. The use of reagents to determine the meaning of the granules in leucocytes he noted and described the circulation of contents in the leucocytes.

To enable one to obtain a clear conception of what William Addison is describing it will be necessary to consult his drawings among his five plates. In his discussion of human blood (on p. 237, paragraph 2) he says (in italics) "Two very distinct kinds of corpuscles may be distinguished in the blood." He directs to withdraw from the skin by puncture "a spot of recent blood," which is to be pressed into a thin film between two slips of glass. During examination he discovered corpuscles that had no disposition to adhere together in rows or irregular masses. After a very accurate description he says: "These are colourless corpuscles of the blood. By repeating the experiment with blood drawn from any inflamed surface as a pimple or the base of a boil, they are found to be abundant; and in the blood taken from the skin of a patient in scarlet fever or from the spots of any cutaneous disease they are remarkably numerous and conspicuous." Here the first hint in medical literature of leucocytosis (local general) in inflammatory conditions.

In Carpenter's "Human Physiology" (American edition 1858) one finds the following sentences (p. 222): "So, regards the human subject, Mr. Paget confirms (lectures on Inflammation in *Medical Gazette*, 1850, Vol. XLV, p. 97) the statement of Mr. Wharton Jones and Professor J. I. Bennett that the increased proportion of the colourless corpuscles which has been regarded by some observers (especially by W. Addison and Dr. C. J. B. Williams) as characteristic of inflammatory blood and particularly that which is drawn from an inflamed part is far from being a constant phenomenon." I merely quote you these words to show that he called forth in his own day, in a measure, confirmatory criticism.

To return to his knowledge of colourless corpuscles, he says: "They are seldom less in size than the red corpuscles frequently much larger. The central portion or inner vesicle (nucleus) is clearly defined, its outline appearing like a delicate filament just within the outer tunic of the corpuscle. The interval between the outline of the central portion and the outer circumference of the corpuscle is very small and without colour. Sometimes there is no interval between them and then the corpuscles have a uniform molecular aspect. The central portion has at all times a molecular or minutely granulated aspect and frequently one, two, or more granules during the observation become distinctly visible in it." Thus we have the first description in any tongue of mononuclear and polynuclear leucocytes. He then makes an attempt to determine the character of both red and white cell contents by use of "water, the dilute acetic acid, and liquor potassæ." In closing this paragraph of his paper he says: "These experiments lead to the conclusion that the colourless corpuscles are highly organised vesicles or cells circulating in, and forming a portion of, the blood."

On p. 241 of this volume we have paragraph 5 given over to a discussion on the "Molecules, Granules, and Fibrine." He says: "In the liquor sanguinis of buffy blood before it coagulates a great number of isolated molecules and granules, not enclosed in any corpuscular tunic, may be seen; they are mingled with the colourless corpuscles, but can never be confounded with them on account of their minute size. They are frequently seen in separate groups, which have sometimes a circular outline, appearing as if the corpuscular tunic had been dissolved away from around them. After a short time the fibrine may be seen coagulating." He then goes on to describe coagulation as seen under the microscope. In Plate 1, Figs. 7 and 8, he attempts to sketch what he is describing. A careful inspection of these figures along with the words of his text will convince anyone that he has seen and most accurately drawn the blood platelets and sketches fibrin formation as beginning in a group of them.

William Addison insists on the importance of the granules of a cell, saying: "It is the molecules and granules in its interior which give special qualities to the secretion or the contents of the cell." Half of Plate 3 and all of Plate 4 are given over to drawings of animal and vegetable cells to show the number and position of cell granules. He says:

proved that the death of a woman aged 53 years was due to heart failure from cystitis and chronic Bright's disease. The inquest was presumably held on account of the absence of a certificate of the cause of death, for it was shown that the deceased had asked a druggist to treat her and he had acceded to her request. The imprudence of this course was pointed out by the coroner, Mr. Frontbeck, who expressed a hope that the public by the publication of the details of such cases might be induced to refrain from putting pressure upon druggists to usurp the functions of the medical man. Fortunately for the druggist in the case mentioned the medical witnesses were able to say that the medicine given was such as might have been prescribed in the circumstances described, but he had arrived at it apparently through having suffered himself from similar symptoms to those which the deceased described to him and by remembering what his own medical adviser had ordered him to take.

THE REPORT OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

Sir Shirley F. Murphy's fourteenth annual report on the health of the administrative County of London in the year 1935 has just reached us. Like its predecessors the present volume is replete with information of interest and importance to dwellers in the metropolis, rich and poor alike. The report is divided into two sections. Part I, dealing with vital statistics and public health and Part II, being concerned chiefly with sanitary administration. In an appendix there appears the report of Dr. J. Kerr, the medical officer for education, which is dealt with elsewhere in our present issue, and the whole is prefaced, for presentation to the County Council, with an introduction by the chairman of the public health committee. This arrangement, whilst adding little to the value of the information contained in the report itself, is advantageous as a means of smoothing some departmental difficulties connected with the recent assumption of educational responsibilities by the central authority.

As usual, Sir Shirley Murphy's report opens with an analysis of the rates of marriages, births, and deaths, each of which attained its lowest point in the year 1935. With respect to the ages at marriage of Londoners, we note that as compared with previous years there has been in both sexes a decrease in the proportion of minors married to marriages at all ages. This feature, however, is observable not only in London statistics but also in those of the rest of England and Wales. The decline in the metropolitan birth-rate which has been manifest since 1871-80 has not been uniform throughout the administrative county. In all the registration districts of London save those of Whitechapel and St. George's-in-the-East there has been in recent years a decline of greater or less amount, but in these two districts the birth-rate has shown a not inconsiderable rise since 1881-63—a result, perhaps, indirectly due to alien immigration. From an interesting table in the text it appears that in most of the principal European towns there has been within the last 25 years a similar fall in the birth-rate, the decrease being most conspicuous in Brussels, Paris, Berlin, and Vienna, and least so in St. Petersburg.

As regards the relation of social condition to fertility of the female population Sir Shirley Murphy gives interesting information which is not generally accessible. In a useful table the rates are shown for groups of sanitary areas arranged with reference to the proportion of the inhabitants dwelling more than two in a room in tenements of less than five rooms. Very properly, the birth-rate has been calculated on the number of married women estimated to be living at child-bearing ages and not as heretofore on the total estimated population. On the other hand, for the reason that the previous places of residence of the mothers confined in such institutions could not be ascertained, no correction has been made for the very considerable number of births occurring in lying-in institutions. From this table we learn that the birth-rate is persistently higher in the more overcrowded and least affluent districts than elsewhere, the birth-rates varying from 2.03 per 100 married women, aged from 15 to 45 years, in Group I, where the overcrowding does not exceed 6 per cent. of the total houses, to 2.73 per 100 in Group V., where the overcrowding reaches 25 per cent.

In treating of the mortality of London in 1935, which he shows to have been the lowest on record, Sir Shirley Murphy reviews the ordinary methods of correcting death-rates for differences in the age and sex constitution of populations. These methods he illustrates by reference more particularly to two—the one generally known as the factorial method, the other, and more accurate, consisting in the application of the deaths at each age to a population of standard composition. It is the factorial method that has been adopted in this report because of its greater facility of application, as well as of the greater economy of arithmetical labour incidental thereto. But Sir Shirley Murphy is careful to note that by the method adopted he obtains results which, even in the case of the abnormally constricted population of Hampstead, do not differ from the methods of deaths in standard populations by more than about 1 per cent.—an error which in the circumstances may be regarded as negligible. The report contains a series of tables showing for the administrative county as a whole as well as for each of its sanitary areas the death-rate in proportion to estimated population, the figures being corrected by referring to the previous places of residence, the deaths occurring in public institutions. In order so far as practicable to eliminate error Sir Shirley Murphy has been at the trouble of constructing a life table for London on the basis of the census enumeration of 1931, thus ascertaining the expectation of life of Londoners at the several age periods dealt with in the tables. In another table the number of deaths in 1935 at each group of ages and for each sex is compared with the number that would have occurred had the rates in that year corresponded to the mean rates in 1891-1930. The number of lives gained in the year 1935 is also shown, the result being expressed in terms of "life capital," which result has been obtained by applying the mean future life term to the number of lives saved at each group of ages. The importance of presenting after this fashion the effect of sanitary administration in London will be appreciated when the fact is realised that in one year alone there has been a saving of 19,535 lives, representing a gain to the community of 757,016 years of "life-capital."

Prominent among social questions of first importance in the present day is that of the persistent decline in the fertility of our female population and its relation to the notoriously excessive loss of life that still prevails in early infancy. This question has recently been freely discussed in the public press, lay as well as medical, and the conference on infantile mortality held last autumn at the instance of Mr. John Burns has led to a further ventilation of the whole question which will, we trust, eventuate beneficially to the rising generation. In these circumstances we were prepared to find in the present report more than a passing reference to the subject of metropolitan infantile mortality. Availing himself of the returns made by medical officers of health to the Local Government Board on forms newly issued by the Board's medical department for the purpose of securing a more detailed account of infant mortality and its causes Sir Shirley Murphy has compiled an instructive table showing for the metropolis generally and for its several areas the deaths of infants from the principal causes in weeks and months of the first year of life. What is conspicuous in the sanitary history of the year 1935, as of other recent years, is the unfortunate fact that whilst the death-rate at all other ages shows a decrease from year to year the mortality of infants remains practically stationary. From the table last referred to it may be seen that of the deaths occurring within the first year of life nearly one-third take place within the first month and that in each successive month the number of deaths decreases until the ninth, when an increase is observed, due in all probability to the change of diet from natural to artificial. From a life table included in the text it will be gathered that the probability of an infant's living one month increases with each successive month until the ninth is reached when the probability is less than that in the eighth month of life. Whether or not this is a constant feature of infantile mortality in London can only be determined after more extended experience, for the figures now published relate to one year alone. But it is interesting in this connection that a similar life table published in the previous annual report, and based on the figures for the year 1932 presented by Dr. Tatham to the Inter-departmental Committee on Physical Deterioration, manifested a similar fall in the probability of living through the ninth month of life. That life table,

Riviera, in a far greater degree than any other part of the Mediterranean coast, bracing and invigorating. The fact remains, however, that here almost as much, if not quite as much, as in other parts of the French Riviera the number of victims to consumption among the natives reaches every year a very high percentage of the population. But this unhappy fact is due, I think, to morbid causes in which climate plays but a subsidiary part. It would take me too far afield to attempt to discuss this issue.

Again, it is not to be denied that this stretch of the Riviera is trying to the constitutions of persons whose maladies are purely nervous. On the other hand, despite what has been stated as touching the natives, it may be asserted, without fear of contradiction, that more remarkable cures of pulmonary disorders can be claimed by this coast than any other reach of the Riviera can establish. St. Maxime has a particularly happy reputation in this regard. I know, personally, of several well-authenticated cures effected in this little old-world village, which I have ventured to christen the "Margate of the Riviera." The famous Breton poet, Théodore Botrel, visits this tiny seaport—one of the few remaining untouched villages along the Riviera—every year. When he first made its acquaintance he was at the point of death.

If one may judge by certain habits of the people generally, no country the world over is more trying to the throat and vocal passages than the Riviera. Here, again, the short stretch of coast which lies off the P.L.M. from St. Raphaël to Hyères is favourably distinguished, since despite the fact that it is considerably colder than other sections of the littoral, its inhabitants do not habitually turn the earth into a spittoon in the manner of their near neighbours. Upon this habit, about its causes that is to say, certain Italian doctors, men of standing, have discoursed to me; but whatever the reasons, the fact remains that affections of the throat are extremely common both in Southern France and Northern Italy, in the interior as well as the coast. In Northern Italy nobody seems to possess a sound throat, and in many districts goitre is painfully prevalent. The inhabitants of the whole of this beautiful part of the world are not, it must be allowed, healthy in appearance, nor do they make, as a rule, old bones. But this perhaps is to be attributed mainly to the fact that they mature early in life, and that they pay scant attention to hygienic precepts in their manner of living.

To return to the visitors. There is another serious drawback to the Riviera which cannot be overlooked. Just as the inhabitants of any given town will aver vehemently that it is free from cold winds, evil smells, and other disagreeables, whilst its near neighbour is damned as the victim of all these ills; so as the visitor proceeds from end to end of the Riviera he is told in turn that the particular town he is instantly visiting is practically free from mosquitoes, though the towns to the right or left of it are eaten up by them. I find, as a matter of fact, that no exception is to be made: the whole coast is under the ban; though, of course, with differences. I have suffered cruelly, sleeping under nets too, in the best hotels of San Remo and Mentone for instance. The nets are some protection it is true, but woe betide the unhappy wight who becomes imprisoned with one or more of these pests as his sweet companion, for they creep in somehow. In any case nets are far from comfortable and they are not always forthcoming. The pastels—Zamparoni they are called from the name of their inventor—are also of limited utility. They send the robust insects to sleep for awhile and kill the weaker vessels. But it is not everyone can stand their fumes. They produce headache and are bad for the eyes and throat. I have smothered myself with mentholised vaseline, thymol powder, and a score or more odious specifics besides, but the wretched tormentors of one's slumbers are not to be denied. After a time their horrid little blast comes sounding over one's head and around one's ears. One feels like a man gagged and bound and covered by a fully charged revolver which he knows will be discharged at him sooner or later. I have been almost reduced to hysteria by their attentions and have spent a full hour night after night chasing the villains. Sleep is impossible and nervous prostration results. In estimating the pros and cons of wintering on the Riviera the miseries caused by these pestilential creatures, which sting you by night and by day, which are so hardy that this winter they have survived the ten days' cyclone of early November, must be taken into consideration.

Varazze, Italy.

MEDICINE AND THE LAW.

*The Golden Rules of Medical Evidence.*¹

A LITTLE work has recently appeared in the series of booklets called by their publishers the "Golden Rules Series," dealing with the giving of medical evidence and Dr. Stanley B. Atkinson, the author, lays down principles which are for the most part admirable. It is not always, however, easy to be brief and at the same time explanatory, and although the author, as a rule, makes his meaning clear we are not quite sure that we agree with his advice to a medical man anxious to escape attending as a witness if we have understood it rightly. He says: "If an appeal to the solicitor falls you may state that your memory of the events in question is vague, and when prompted you may find that the facts as known to you are quite hostile to his client's claim." If this is intended to cover all cases, including those in which the evidence, if given truly and frankly, would not be adverse, we should suggest modification; if, on the other hand, we have attached a meaning to the author's expressions which he did not desire to convey they might be made clearer. Nor are we convinced of the safety of a recommendation to be found on p. 21, with regard to the obtaining of a declaration from the lips of a person who may be dying as the result of an act capable of being charged as murder or manslaughter. Dr. Atkinson says: "Should death be imminent after a criminal assault (which includes abortion) the medical man should urge the victim to make such a dying declaration." It would involve the medical man in heavy responsibility should he have to repeat a declaration thus extracted in the witness box with the life of the prisoner in the dock dependent upon its absolute accuracy. The dying person conscious of impending death may be assumed by the law to speak the truth but no such assumption renders him infallible and in conceivable circumstances he may have been under a mistaken impression which a living witness would be able to correct. It is one thing to receive such a declaration or even to encourage the utterance of that which may be useful in the cause of justice; to "urge" it is a very different matter. The pages devoted to informing and reminding the medical man of points relating to the preparation and giving of his evidence where it is strictly of a medical character are, however, of a useful and practical nature and we note that matters of detail hardly to be described as rules of medical evidence have not been too rigidly excluded—e.g., a reminder that "it is dangerous to attend lying-in women after making an autopsy." It is more easy, however, to lay down apparently simple maxims than it is to obey them. We find, for example, on p. 31 the golden rule, "Say exactly what you mean," which all honest men endeavour to do but which sometimes through their very desire to be accurate they fail to achieve with complete success. "Avoid appearing suspicious" is another maxim on the same page, which suggests as a possible preliminary warning, equally needed, "avoid being suspicious," although neither would always be easy to obey. Occasionally a "golden rule" may require amplification in order that it may be clearer, but we can point to one propounded by Dr. Atkinson which would be as easily understood, and no less generally applicable, if two words were elided: "Little is gained by cross-examining one who is obviously telling the plain truth." The words which we have put in italics are surely superfluous, particularly to those who are willing to understand that the "truth" implies the truth of the witness's oath—i.e., "the truth, the whole truth, and nothing but the truth." Most counsel will agree that the witness, whether he be a skilled witness of fact or one called as an expert who is master of his facts and narrates them simply, concealing nothing, is not likely to be seriously "knocked about" by the most skilful cross-examiner "within" or "without the bar." Still less is he likely to suffer either apparently or in reality if he has been called by an advocate with the knowledge necessary to re-examine properly and to correct any false impression liable to be founded upon the cross-examination.

Prescribing by a Druggist.

In the course of a recent inquest at Westminster it was

¹ Golden Rules of Medical Evidence, by Stanley B. Atkinson, M.B., B.Sc., of the Inner Temple, Barrister at Law. Bristol: John Wright and Co. London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1906. Pp. 63. Price 1s.

The rates in the eight Scotch towns ranged from 18.2 and 19.2 in Paisley and Edinburgh, to 24.0 in Perth and 25.6 in Greenock. The 721 deaths in the eight towns showed a decline of 75 from the number returned in the previous week, and included 67 which were referred to the principal epidemic diseases, against 55 and 71 in the two preceding weeks. These 76 deaths were equal to an annual rate of 1.9 per 1000, which exceeded by 0.5 the rate from the same diseases in the 78 English towns; they included 19 which were referred to whooping-cough, 18 to "fever," 12 to diarrhoea, nine to measles, six to diphtheria, three to scarlet fever, and not one to small-pox. The 19 fatal cases of whooping-cough showed a slight increase, and included 13 in Glasgow and four in Greenock. The 18 deaths from "fever" exceeded the number in any recent week, 14 occurring in Glasgow and four in Edinburgh; 11 of these "fever" deaths in Glasgow and three in Edinburgh were certified as cerebro-spinal meningitis. Four deaths were attributed to diarrhoea both in Glasgow and in Edinburgh. Five fatal cases of measles were returned in Aberdeen and two in Edinburgh; three deaths from diphtheria and the two from scarlet fever were recorded in Glasgow. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 119, 167, and 182 in the three preceding weeks, further rose to 185 in the week under notice, and exceeded the number returned in the corresponding week of last year by 59. The causes of 22, or 3.0 per cent., of the deaths registered during the week in the eight towns were not certified or were not stated; the mean proportion of uncertified deaths in the 76 English towns during the week did not exceed 1.0 per cent.

HEALTH OF DUBLIN.

The annual death-rate in Dublin, which had been equal to 28.8, 18.4, and 31.9 in the three preceding weeks, declined again to 29.0 in the week ending Jan. 12th. During the 13 weeks of last quarter the death-rate in the city averaged 23.9 per 1000, the mean rate during the same period being only 16.0 in London and 16.2 in Edinburgh. The 219 deaths of Dublin residents during the week under notice showed a decline of 22 from the high number in the previous week, which excess was mainly due to the delay of registration during the Christmas week; they included eight which were referred to the principal epidemic diseases, against five and 19 in the two preceding weeks. These eight deaths were equal to an annual rate of 1.1 per 1000, against 1.2 in London and 1.8 in Edinburgh. These eight deaths from these epidemic diseases in Dublin last week included three from measles, two from whooping-cough, two from diarrhoea, one from "fever," and not one either from scarlet fever, diphtheria, or small-pox. The fatal cases of measles corresponded with the number in the previous week, while those both of whooping-cough and diarrhoea showed a marked decline. Four inquest cases and one death from violence were registered during the week; and 87, or 40.1 per cent., of the deaths occurred in public institutions. The causes of seven, or 3.2 per cent., of the deaths registered in the city during the week were not certified; the percentage of uncertified deaths in the week under notice did not exceed 0.2 in London, while it was 3.1 in Edinburgh.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

The following appointments are notified:—Fleet Surgeons: P. V. Jackson to the *Sapphire* on recommissioning, and P. E. Melchard to the *Majestic*. Staff Surgeon: J. Martin to the *President*, for three months' course at West London Hospital. Surgeon: F. O. Robinson to the *Sapphire* on recommissioning, to be lent to the *Tyne*.

In accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1891, Staff Surgeon Albert Robart has been allowed to withdraw from His Majesty's Naval Service with a gratuity.

ROYAL ARMY MEDICAL CORPS.

Major R. W. H. Jackson, specialist sanitary officer at

Dublin, is appointed to the Belfast District. Captain E. Brodribb, from Gibraltar, is appointed for duty at Kilkenny, and Captain S. de C. O'Grady from Limerick to Dublin. Captain F. S. Penny joins the London District for duty.

ROYAL ARMY MEDICAL CORPS IN INDIA.

Lieutenant-Colonel J. J. O. Bennett has assumed command of the Station Hospital, Saugor, on return from leave. Major F. W. Begbie has been posted for duty in the 5th Division. Captain L. L. G. Thorpe has returned from leave and has arrived at Jubbulpore. Captain A. W. Gibson has left Dthala for Aden. Captain T. F. Ritchie is granted 60 days general leave from Dec. 7th, 1906. Lieutenant J. Campbell is appointed specialist in the prevention of disease.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Major-General Lord Oheylesmore, O.V.O., will distribute the prizes of the London Companies Royal Army Medical Corps (Volunteers), on Saturday, Feb. 9th, at their headquarters, 51, Calthorpe-street, Gray's Inn-road, London, W.C.

MR. HALDANE'S NEW ARMY SCHEME.

The Army Order recently issued puts us in possession of some very important information regarding the great changes, which are still, however, quite incomplete, proposed to be carried out in Mr. Haldane's new army scheme. There is little or nothing in the Army Order or in the explanatory memorandum accompanying it which calls in any special way for medical comment. Nevertheless, as no great and fundamental changes can take place in the army as a whole without more or less affecting every branch and department of it, and as the present War Minister's declared aim and object are to develop, if not to create, a national army and to organise a new and comprehensive system of national defence we may venture to express some of the impressions that have occurred to us. Seeing, moreover, that any movement in this direction is necessarily intimately associated with that of the maintenance of our national stamina and vigour it becomes a question of public health. On this relation, however, there is no need to enter here beyond calling attention to the important bearing which it has upon this army problem. As regards the titular changes introduced, for British military purposes a division is a handier tactical unit and one more in accordance with the army traditions of this country and with the present organisation of our Indian army than an army corps. Divisions and brigades lend themselves well to army medical organisation purposes. We can only suppose, however, that before Mr. Haldane for economical reasons made the reductions that he did in the regular army of trained soldiers he had taken some steps to ascertain how his new proposals for recruiting and reorganising the regular army from the non-regular—as to foreign service, for example—were likely to be received and to work, for on this success mainly depends. It is as impossible to have a river without water as an army without recruits, and the quality, in training and efficiency, of any force to take the field against that of a Continental Power has in the present day to be of the best. As we have already said, no one can doubt Mr. Haldane's sincerity of purpose and breadth of view. The object which he seeks has, and should have, no element of political party spirit about it. The appearance of his complete scheme will naturally be awaited with great interest and curiosity, and should it prove reasonably adequate to the needs of the occasion and likely to lead to some settlement of this question on a satisfactory basis he will have well deserved all the praise which he will surely obtain from men of all parties.

NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund held on Jan. 15th, when Sir J. Dick, K.C.B., presided, the sum of £62 was distributed among the several applicants.

THE NEW ARMY MEDICAL SERVICE ADVISORY BOARD.

The personnel of the reconstructed Advisory Board formed by the amalgamation of the Army Medical Advisory Board and the Army Hospital Sanitary Committee has now been announced. We publish the names in another column (see p. 178) and believe that our readers will agree with us that the selection of members has been made judiciously.

however, showed a fall in the probability in the seventh month of life which is not noticeable in the table for 1905.

The influence of social condition on mortality at different periods of the first year of life is well shown in a table in which are compared the rates of infant mortality obtaining in groups of metropolitan districts arranged according to degrees of overcrowding as revealed by the recent census. Allowing for some irregularities in the rates due to the fact previously noted that the births in lying-in institutions have not been distributed to the districts in which the mothers reside, it appears that the mortality of infants in their first year increases with the proportion of the population at all ages living in overcrowded tenements. When the figures for each "trimester" are considered the same phenomenon is observable but the fact particularly deserves notice that the difference in mortality between the least and the most overcrowded groups is the least marked in the first three months of life, more marked in the second, still more marked in the third, and most marked of all in the fourth three-month period of life. This important question of the influence of social condition on infantile mortality is brought into prominence for the first time in the present report. Unfortunately a similar method has not as yet been attempted for other parts of the United Kingdom, but until this has been done no trustworthy data will be available whereby the relation of social circumstances to infant vitality can be looked for. Sir Shirley Murphy has divided the districts of London into five groups in the increasing order of overcrowding, the first group showing a proportion of 8 per cent. of the population living in one room and the fifth group a proportion of 28 per cent. Owing probably to the more complete registration of births and deaths in the better circumstanced districts the mortality in the most overcrowded group in the first month of life scarcely exceeds that of the group that is least overcrowded. As age progresses, however, the difference increases and this may be due either to decrease of the difference of death registration in the several districts or to "the effect of environment becoming more marked as it is afforded a longer time in which to operate." Although Sir Shirley Murphy very properly hesitates to strain inferences from the experience of a single year, nevertheless he thinks that the figures which he has published tend to invalidate the conclusion expressed by some persons that ante-natal conditions constitute a predominant factor in determining infant mortality.

Looking Back.

FROM

THE LANCET, SATURDAY, Jan. 17th, 1829.

REMARKABLE CASE OF COMPLETE ABSTINENCE.

ANNA GARBERO, of Racconis in Piemont, died on the 19th of May, 1828, after having been for two years, eight months, and eleven days, without any solid or liquid nourishment. Sixteen hours after death she was examined by MM. Rolando and Gallo, of Turin. The serous and synovial membranes were dry, and resembled parchment; the diameter of the principal veins and arteries was much less than usual, but the most remarkable morbid alteration was that of the digestive organs; the transverse colon had descended to the hypogastric region, its two extremities remaining fixed in their natural situation; the stomach had descended in a similar manner; and being much contracted, had the appearance of part of the larger intestine. The duodenum was in a natural condition, but the other small intestines were considerably contracted; the lower part of the cæcum, and the middle portion of the transverse colon, contained small hardened scybala; at the lower part of the colon descendens, the membranes of the intestinal canal were thickened and callous, so as to hinder the further progress of the excrement; and in the sigmoid flexure, it was completely obliterated. The mucous membrane of the stomach was softened and friable; that of the intestinal canal had undergone the same alteration, and was of a brown colour, such as is observed in incipient gangrene; the valvæ conniventes were hardened, and the whole tract of the small intestines was empty. The mucous membrane of

the rectum was of a violet colour, thickened, beset with hard scirrhous excrecences, and covered with very foetid pus. The mesenteric glands were in a natural condition; the epiploon and mesentery exhibited no traces of fat, and were nearly in the same state as the pleura and peritonæum.—*Annali di Omodei.*

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 9413 births and 6348 deaths were registered during the week ending Jan. 12th. The annual rate of mortality, which had been equal to 19·7 and 22·4 per 1000 in the two preceding weeks, declined again to 20·7 in the week under notice. During the 13 weeks of last quarter the death-rate in these towns averaged only 16·2 per 1000, the rate during the same period in London being 16·0. The lowest death-rates in the 76 towns during last week were 8·7 in Hornsey, 10·3 in King's Norton, 14·3 in Willesden, and 14·4 in Aston Manor, in Rhondda, and in Barrow-in-Furness; the rates in the other towns ranged upwards to 30·2 in West Bromwich, 31·5 in Brighton, 31·8 in Hanley, and 32·8 in Middlesbrough. The 6348 deaths in the 76 towns showed a decline of 531 from the high number in the previous weeks, which was partly due to the delay of registration during the Christmas holidays. They included 423 which were referred to the principal epidemic diseases, against 430 and 478 in the two preceding weeks; of these, 140 resulted from measles, 91 from whooping-cough, 70 from diphtheria, 47 from diarrhoea, 41 from scarlet fever, 34 from "fever" (principally enteric), and not one from small-pox. The deaths from these epidemic diseases were equal to an annual rate of 1·4 per 1000 in the 76 towns; the rate in London from the same diseases did not exceed 1·2. No death from any of these epidemic diseases was registered last week in Halifax, Northampton, York, Coventry, or in eight other of the 76 towns; the annual death-rate therefrom, however, ranged upwards to 4·7 in Smethwick, Bootle, and Hull, and 8·2 in Warrington. The fatal cases of measles showed the largest proportional excess in West Ham, Leicester, Bootle, Rotherham, Hull, and Warrington; and whooping-cough in Huddersfield, Leyton, Rotherham, and Walthamstow. The 70 deaths from diphtheria showed a decline of 29 from the number in the previous week, but this disease caused a high death-rate in Reading, Smethwick, and Leyton; the deaths from scarlet fever also showed an excess in Smethwick and Hanley. The deaths referred to "fever" included 11 in London, two in Birmingham, two in Salford, two in Blackburn, and two in Swansea. The fatal cases of diarrhoea were fewer than in recent weeks. No case of small-pox has been under treatment in the Metropolitan Asylums Hospitals since the end of June last. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 3846 and 3707 in the two preceding weeks, had further declined to 3521 at the end of the week under notice; 285 new cases were admitted to these hospitals during the week, against 237 and 309 in the two previous weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had steadily increased in the six preceding weeks from 312 to 718, declined again to 620 in the week under notice, but exceeded the corrected average in the corresponding week of the last five years by 261; 83 deaths were also referred to influenza. The causes of 62, or 1·0 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Salford, Newcastle-on-Tyne, and in 38 other of the 76 towns; the proportion of uncertified deaths, however, again showed a considerable excess in Liverpool, Birmingham, St. Helens, Sunderland, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 19·0 and 22·9 in the two preceding weeks, declined again to 20·8 in the week ending Jan. 12th, and was almost identical with the rate recorded during the same week in the 76 English towns.

CYANOSIS AND INDISCRIMINATE SELF-DRUGGING.

To the Editors of THE LANCET.

SIRS,—I have read with pleasure and also with no little benefit the interesting lecture by Dr. Thomas Oliver which appeared in THE LANCET, Dec. 29th, 1906, p. 1772, which warningly illustrates the ill-effects upon the body which may be brought about by the indiscriminate self-drugging with medicaments ordinarily regarded by the public as non-injurious even if non-effective. It is scarcely to be expected that the lay person should know whether or not certain drugs are or are not more than ordinarily injurious; as a matter of fact, he or she commonly regards them as being safe principally on account of the ease with which they can be procured and the publicity given to the class of medicine by its exposure in the windows and show cases of chemists' shops, contained, as it usually is, in the pleasing and portable little tin-stoppered bottle.

The lecture recalls to my mind two cases which have occurred in my own practice during the last 12 months, in both instances in women, and I should perhaps not have noted the effect of this class of drug had it not been that the symptoms of the second case were practically identical with those of the first. The first case was that of a nurse, aged 30 years, who for some time had suffered from dysmenorrhoea, but which latterly had been of such severity as to cause her to resort to drugging; on the night the incident occurred she had taken two antihemorrhagic pellets but as she got no relief from them within an hour she took two more. In about an hour's time she was seized with violent pains in the lower part of the abdomen, accompanied by an urgent condition of dyspnoea with pallid face, blue lips, ears, nose, and finger tips; the pulse and respiration-rates were both increased in frequency. She said she had at the time a feeling of impending death. She was given a little brandy and water and when I saw her I ordered fomentations to the lower abdomen. She was apparently quite well again in an hour and a half.

The second case, also a nurse, aged 27 years, although robust looking, had suffered six years previously from scarlet fever complicated by pleurisy and albuminuria; she was never free from a slight albuminuria and had recently been troubled with nasty headaches on and off. She was given four antipyrine pellets by another nurse who was in the habit of taking them for headache. She took all four at once and about half an hour later she was taken ill and with the exception of the absence of abdominal pain she had similar symptoms to the previous case, but had a more marked and prolonged initial faint. She was put to bed and was given a little brandy and water with hot applications over the precordial region, and was apparently quite well again in about three hours.

I am, Sirs, yours faithfully,

JOSEPH BEARD, F.R.C.S. Edin., D.P.H. Camb.

Bottle, Jan. 2th, 1907.

THE CASE OF GEORGE EDALJI: A QUESTION FOR OPHTHALMOLOGISTS.

To the Editors of THE LANCET.

SIRS,—Might I ask you in the cause of justice to permit me to put the following question to those of your readers who are engaged in eye practice:—

"Do you consider it physically possible for Mr. George Edalji, whose degree of myopic astigmatism as determined by retinoscopy under homotropine is

Right eye — 8.75 diag. sph.
— 1.75 diag. cylind. axis 90°.
Left eye — 8.25 diag. sph.

to have set forth upon a pitch dark night with neither moon nor stars, to have crossed country for half a mile climbing fences, falling gaps in hedges, and passing over a broad railway line, to have found and mutilated a pony which was loose in a large field, to have returned half a mile, and to have accomplished it all under 35 minutes, the limit of the possible time at his disposal? Mr. Edalji did not wear spectacles."

A consensus of scientific opinion upon this point would greatly aid me in setting justice for this young professional

man, condemned for an offence which in my opinion he could not possibly have committed.

I am, Sirs, yours faithfully,

ARTHUR CONAN DOYLE, M.D.

Underham, Hindhead, Surrey, Jan. 15th, 1907.

AMYL NITRITE IN HÆMOPTYSIS.

To the Editors of THE LANCET.

SIRS,—If I have read him correctly, Dr. Albert Abrams in his two recent letters on the above subject maintains that amyl nitrite inhalation promotes hæmostasis of the lung largely through reflex action. The vapour of the drug stimulates the terminations of the vagus in the nasal mucosa. Thence reflexly the longitudinal muscular fibres of the bronchioles are made to contract and express the blood from the lung parenchyma. This seems overmuch to expect from the "weaker longitudinal fibres." But whether or no these be competent for the task, it is certain that amyl nitrite can render the lung more or less exsanguine without assistance from the nasal mucosa or its nerve supply. In the laboratory demonstrations by Pic and Petitjean, the lung was rendered so anemic that when incised no single drop of blood escaped. Yet the amyl nitrite responsible for the result was injected into the femoral vein. Further, nitroglycerine given by the mouth has proved no mean substitute for amyl nitrite inhalation in some cases of hæmoptysis.

Referring to the inhibitory influence of amyl nitrite on uterine hæmorrhage, Dr. Abrams expresses the opinion that the drug "acts on the fibres of the uterus with secondary constriction of the blood-vessels." An action on the uterine musculature, so far as I know, has not been hitherto postulated of the drug. But even if true, how could such action explain the influence of amyl nitrite on the hæmorrhage which follows removal of parovarian cysts and on that which accompanies rupture of the sac in ectopic gestation?

In point of fact, the only physiological action of amyl nitrite which rests on any secure foundation is the sudden production of vaso-dilation—or, in other words, the sudden inhibition of vascular tone—in wide areas, if not generally; this being of necessity associated with a fall of blood pressure and a compensatory acceleration of the heart beat. All other actions ascribed to the drug would appear to depend on mere inference from preconceived theories. For example, from the relief sometimes afforded by it in the asthmatic paroxysm, amyl nitrite is inferred to have the power of relaxing the bronchial muscles. But the inference is unjustifiable because the view that asthma depends on bronchial constriction remains an unverified hypothesis. The only view of the mechanism of the asthmatic paroxysm which is consistent with the known physiological action of amyl nitrite, is the vaso-motor hypothesis: amyl nitrite relieves asthma by relaxing the peripheral vaso-constriction which is an essential factor in the bronchial vascular distension responsible for the obstruction to respiration.

I am, Sirs, yours faithfully,

Upper Norwood, Jan. 12th, 1907.

FRANCIS HARE.

GAS FIRES.

To the Editors of THE LANCET.

SIRS,—We have read with interest Mr. Francis Jones's letter in THE LANCET of Dec. 15th last criticising the results of the recent inquiry held by the Coal Smoke Abatement Society on gas stoves and should be glad if you can find space for the following reply.

Length of the tests.—While admitting that, within limits, a long test is preferable to a short one, we consider that in practice a full working day is quite sufficient. In this conclusion we are supported by the accepted practice in the case of boiler trials. The purpose of the inquiry being to provide data upon which to base general conclusions as to gas stoves, an investigation into the behaviour of 25 different stoves in different rooms is surely far preferable to a test of only one stove in one room, however long continued, which was, we believe, the condition holding in Mr. Jones's experiments. We consider it quite impossible to arrive at sound general conclusions as to the value of gas-stoves from such a test, however instructive the results may be in other ways. A peculiarity in the room or stove may vitiate the entire results.

Correspondence.

"Audi altorum partem."

SECURITY OF TENURE FOR POOR-LAW MEDICAL OFFICERS IN THE HIGHLANDS OF SCOTLAND.

To the Editors of THE LANCET.

SIRS,—Security of tenure for Poor-law medical officers in Scotland is so well recognised as right and proper that without any special enactment it has gradually but surely become the rule except in the remoter parishes of the Highlands and Islands. No doubt the law of the land should in explicit terms reinforce the practice. But security of tenure cannot be made legally absolute "*ad vitam aut culpam*." It can only be relative—that is, there must be the power of dismissal still left with the parish authorities but subject to the intervention of the Scottish Local Government Board. This Board has to be made the judge as to whether the dismissal be capricious and unjust or not.

Had the Local Government Board 40 years ago laid down that the power of dismissal was only to be exercised subject to its approval as one of the regulations in connexion with the Parliamentary grants in aid of Poor-law medical relief, I have no doubt such a restriction would then have been quietly accepted as a necessary condition of help from the State. But, Sirs, the times change and we have to change with them. Two things have happened. Gradually parochial boards have come to see that their officers deserve, and should possess, security of tenure. And so it may truly be said that parochial medical officers all over Scotland with the exceptions I have mentioned do already hold their appointments "*ad vitam aut culpam*." The other change which also I can say on looking back nearly 50 years, a great part of which was passed as a parish doctor, has come about, is that Scottish feeling as against central interference of all kinds has waxed very much stronger, and, rightly or wrongly, parish councils in the larger centres will not allow that the Local Government Board should have any legal right whatever to interfere with their jurisdiction. And so the chances of a change in the law, however reasonable, yet as tending, however remotely, towards centralisation are to those studying the trend of the times absolutely nil and the agitation in that direction useless. If this contention be right, surely, Sirs, it is wiser to limit our attention to the diseased portion of the existing system and leave the healthy part alone.

Pain and disturbance of function are practically—nay, I may say invariably—limited to the extremities of the Scottish body politic, the Highlands and Islands. What, then, is the cure for this complaint—a complaint, unfortunately, too frequent and one which no unprejudiced person can deny really exists and demands remedy. Owing to the widely scattered and poor condition of the inhabitants in those remote regions it has become necessary to pay the parish doctor at a much higher rate per head of paupers than the ordinary parochial medical officer is paid in the more densely populated and richer parts of the country. Again, from the very nature of things, the Highland and Island doctor is appointed, not only to look after the paupers, but also he has to attend those of the parish inhabitants, be they rich or poor, who may require his services. In this way he becomes a sort of club doctor and the invariable evils of contract practice immediately begin to grow and flourish. His employers, partly by salary from their own pockets, partly by securing larger and larger grants from the public purse, claim that they have the right, not only to his services, but to dictate on private and personal grounds that they themselves should be judges of the skill and attention he should bring to bear on the discharge of his professional duties. Surely, Sirs, a ridiculous state of things if the doctor is to be in any sense independent, and if he is to exercise that indispensable qualification for real usefulness in his work. No doubt legal security of tenure would help him. But to those who know the real nature of the working of the existing state of things much more than security of tenure is required if the condition of the Poor-law doctor in the Highlands and Islands is to be placed on a satisfactory footing. Even with security of tenure he would still be

ill-paid, ill-housed, a prisoner practically in his parish, and unpensioned for his old age. The state of matters of which we have read so much as existing in Ireland is practically going on on this side of the Irish Sea in a great portion of the north and west of Scotland.

Is the real remedy here, as there, to be a State-paid medical service? From the purely professional point of view there is much to be said in favour of this proposal, as there is in the corresponding case of education. The position of a civil servant is assured, his salary and pension are fixed and certain, and, above all, merit would be more likely to be recognised and promotion to follow would almost come to be relied on.

But with all due deference to Mrs. Sydney Webb, I do not think the country is prepared for such a 'grave socialistic and centralising experiment.' No doubt, as that great authority on local government shows, we have travelled far on the same road in the matter of public health in supplying free of charge to rich and poor infectious diseases asylums and are fast giving to all and sundry gratuitous medical advice and medicines in our general hospitals. But, looking forward, as we are entitled to look, hopefully to great advances in sanitation, housing, proper upbringing of children, physical training of the pupils, and medical inspection of schools, is there not a real prospect of abolishing what may be called the policy of mere expedients to meet present difficulties? It may be visionary, but having secured the reforms mentioned there is really no reason why each individual should not sit down under his own vine and fig tree, when he will have learned not only to avoid all known causes of infection but be able to cope with disease and death guided by his own medical adviser, without the intervention of an army of medical officers of health and sanitary inspectors and without consigning his nearest and dearest to the tender offices of strangers in a public hospital.

State management being a dangerous experiment, what ought to be the relation of the civil power to that part of the country as long as it continues to contribute, not only for the help of sick paupers, but also, as has been shown it does, in the Highlands and Islands of Scotland for the whole existing population in those poor and remote regions? Fortunately, we have been provided with an answer to this question by the successful results of the action of the Scottish Education Department in parallel circumstances. In the Island of Lewis where on account of the poverty of the population the department found it necessary to give exceptionally large money grants to the schools "my lords" insisted on exceptional powers of interference in the local management of those schools. H. M. Inspector has a seat—indeed, the chief seat—on their boards; regulates the appointment and dismissal and pay of all teachers, and really controls the whole management. In like manner, wherever there are exceptional grants, say above 20s. per head for each individual on the roll of paupers in such parishes, the Scottish Local Government Board should have the right to appoint one of their inspecting officers to a seat on the parish council with the right of voting on the appointment, dismissal, and salary of the Poor-law doctor. The position, status, and security of tenure of the teachers have been much improved by this system of modified State interference and so, there can be no doubt, would also be the result in the case of parochial medical officers in the Highlands and Islands. Petty saving and petty tyranny would disappear and we would by-and-by have a contented body of well-paid, well-housed, and properly free and independent public servants. At present the Poor-law service is often the very opposite, to the detriment not only of the medical care of the poor but also to the loss and misfortune of those who are better off.

I might enlarge on the need for holidays and, above all, for pensions. But I have said enough at present to show the urgent need for reform. The first step mentioned, that of Government interference, could, I believe, be at once effected by a modification of the regulations for the granting of Poor-law medical relief in exceptional cases, and along with this change should come, in simple justice to Scotland, not a fixed annual contribution from the Consolidated Fund for the whole of that part of the kingdom as at present, but a frank payment of the one-half of each parish doctor's salary as has long been the case in England, while the proportion, I believe, is still more in Ireland.

I am, Sirs, yours faithfully,

WILLIAM BRUCE.

Jan. 1st, 1907.

in medical prescription or otherwise, in any preparation which can be used as a beverage, or which is capable of being taken internally as a medicine, and the use of methylated spirits in making any other preparations should receive the sanction of the Board before they are made up." This reply refers, of course, to ordinary mineralised methylated spirit but it reveals a willingness on the part of the Board of Inland Revenue to consider special cases. Hence it would be well if secretaries of hospitals were to write to the Board for permission to employ industrial methylated spirit for external applications not mentioned above.

I am, Sirs, yours faithfully,

"HESPERUS."

Jan. 5th, 1907.

SIR WALTER SCOTT ON "EUGENICS."

To the Editors of THE LANCET.

SIRS—Old writers are sometimes unconsciously instructive upon topics supposed by us moderns to be peculiarly of to-day. Thus Sir Walter Scott in "The Pirate," one of his less-known works which is full of good psychological analysis à la Thackeray, devotes a long excursus to the subject which during the last year or two we have agreed to call "eugenics." It is the aim of "eugenics" to breed human beings as pedigree dogs and horses are bred. The idea commends itself to a generation as much in love with ideas of State interference and machine-made human institutions as it is ignorant of the long teachings of history and of human nature. Sir Walter Scott is speaking of the queer discrepancies everywhere apparent, as well now as in his day, in the marriage relation. How is it, he asks, that such unlikely people are constantly found mated together? How is it that the short man marries the tall woman and that the idealist becomes the husband of the practical housewife? Scott answers the question in his wise, old-fashioned way: "A moral and primary cause might be easily assigned for these anomalies, in the wise dispensations of Providence, that the general balance of wit, wisdom, and amiable qualities of all kinds, should be kept up through society at large. For, what a world were it, if the wise were to intermarry only with the wise, the learned with the learned, the amiable with the amiable, the gay, even the handsome with the handsome?" It would be the world dreamt of by the Eugenic Utopians, who would further, by Socialistic State enactment, endeavour to prevent all the other people becoming parents. Scott as a shrewd man of the world does not entertain the possibility of such prevention for a moment. Indeed, he knows nothing about it, though he writes in 1831, an age familiar with revolutionary schemes and visions even wilder than our own. "And, is it not evident," he continues in his hearty reasonable way, "that the degraded castes of the foolish, the ignorant, the brutal, and the deformed (comprehending, by the way, far the greater portion of mankind) must, when condemned to exclusive intercourse with each other, become gradually as much brutalised in person and disposition as so many orang-outangs? When, therefore, we see the 'gentle joined to the rude,' we may lament the fate of the suffering individual, but we must not the less admire the mysterious disposition which thus balances the moral good and evil of life:—which secures for a family, unhappy in the disposition of one parent, a share of better and sweeter blood, transmitted from the other, and preserves to the offspring the affectionate care and protection of at least one of those from whom it is naturally due." The whole passage suggests a very real reconciliation between the argument from Design and the argument from Darwin.

I am, Sirs, yours faithfully,

Q. A.

FREE FEEDING OF SCHOOL CHILDREN AT MARSEILLES.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

The Menu, the Cooking, and the Cost.

THERE are not many children fed at the *cantines scolaires* of Marseilles but those who are fed are well fed; also whatever is done is fully recorded. Thus at the town hall I was supplied with these figures: "School population on July 21st, 1905—boys, 19,265; girls, 19,723; maternal schools (that is to say, schools for children from three to six years old of both sexes), 9,773; in the crèches, 275

babies; total, 48,753." In regard to the feeding the last complete statistics are for the year 1905, and these show that 1693 boys frequented the *cantines scolaires*, 1473 girls and 1950 children under six years old attending the maternal schools. This makes a total of 4632 and as the school population was much the same in numbers as it is now this is equal almost precisely to 10 per cent. of the whole. Thus, at Marseilles 90 per cent. of the school children return home for their meals and of the 10 per cent. who avail themselves of the school repast a large proportion—namely, a small half—pay for their food. The following are the exact figures and they are instructive as indicating what the organisers of midday meals in the primary schools of a large seaport town may expect. The number of helpings of soup served to boys during the year amounted to 224,271; of these 117,473 were given gratuitously and 106,798 were paid for. The girls received a little less—namely, 217,363 helpings of soup. They, however, paid for a much larger proportion—namely, 118,522—and only received 98,841 gratuitously. In regard to the schools for little children, or maternal schools as they are called in France, the figures are very different, not only at Marseilles but wherever I have been able to make the comparison. The practice of feeding in the maternal schools is much more general and the extent to which this is done gratuitously is widespread. Thus, instead of only 10 per cent. availing themselves of the *cantines scolaires* we find 1750 out of 9473, or more than 18 per cent. They also received a greater number of helpings, though this can be explained by the fact that at the maternal schools nothing but soup is given and that the children are too young to go home alone in the middle of the day, while at the other schools there are regular dinners with meat, vegetables, &c. The number of helpings of soup served at the maternal schools is set down at 371,563, but what is more important than this large figure, for which an explanation has just been given, is the fact that of all these helpings only 59,227 were paid for and the remaining 312,241 were given gratuitously. Whereas at the boys' and girls' schools the parents managed to pay for more than half the helpings of soups given not one-sixth of those served in the maternal schools were paid for by the parents of the children. This is very natural. The principal use of a maternal school is to offer a shelter to little children while their mothers are at work. Of course, it is only among the poorest sections of the community that the mothers have to work as well as the fathers.

In most, if not all, of the *cantines scolaires* established in connexion with the schools for boys and girls not only soup but a regular meal is provided. As a rule, most of the children have the entire meal but some take the soup only and others do not have soup but only take the courses that follow. These latter in the statistics come under the general heading of "portions." The difference is but slight; thus it has been stated that the boys consumed a total of 224,271 helpings of soup and to this figure I can now add that they also had a total of 225,878 "portions" and they paid for 117,349 of these portions, receiving 106,529 gratuitously, thus again paying for the larger half. The girls consumed 216,276 portions, or 337 portions less than in the case of the soup, while the boys took 1637 more portions than soup, showing a slight preference on the part of the boys for solid as opposed to liquid food. But again the girls were ahead of the boys in regard to payments for they only received 93,925 portions gratuitously and paid for 118,051 portions. Taking the grand total there were in the maternal schools and in the boys' and girls' primary schools 4832 children who during 1905 received soup from the *cantines scolaires*; they paid for 284,648 helpings of soup and did not pay for 528,554 helpings of soup, making a total of 813,202 helpings of soup provided by the *cantines scolaires* in the year. Deducting the 1750 children fed at the maternal schools where only soup is given there were 235,400 portions served to the boys and girls in the primary schools which were paid for and 207,454 which were not paid for, making a total of 442,854 portions. Adding the 613,203 helpings of soup, we get the grand total of soup and portions amounting to 1,256,056. Of these 520,648 were paid for by the parents of the children and 735,408 by the municipality.

The by-law or *règlement* under which the *cantines scolaires* are organised by the municipality bears the date of June 22nd, 1833, and was drawn up and adopted when Dr. Flai-sières was mayor of Marseilles. As a doctor of medicine and a sanitary reformer Dr. Flai-sières naturally appreciated the importance of securing sufficient food for the children.

Size of rooms.—We think this is important and must be taken into account in considering the results of the tests. It does not, however, in any way invalidate these results.

Carbon dioxide.—The amount of CO_2 found in the rooms was small and very slightly increased above that in the air admitted. Why should the CO_2 be increased if all the products of combustion are carried up the flue? Our observations showed that the ventilating effect of the stoves was considerable. Mr. Jones does not state what was the ventilating effect of his stove.

Carbon monoxide.—There were three cases when this was detected in the room; one was a flueless stove, another was proved to have some defect in the joints, and the third case was probably also due to a leaky joint. These were exceptions, to be condemned individually, but not to base an adverse general conclusion upon.

Potassium permanganate test.—The dust somewhat vitiated this test. Its results were chiefly negative and not satisfactory as a basis of comparison; no conclusion was therefore drawn from it.

Smell.—Although many stoves caused a smell the fact that in 12 cases it was absent showed that smell is not an invariable accompaniment of gas stoves and is avoidable by proper construction.

Humidity.—The actual humidity of the room air is no guide as to the effect of a stove or fire unless it is compared with that of the air before admission to the room. It was upon the alteration of humidity, therefore, that conclusions were based. In Mr. Jones's tests the temperature produced in the room with the gas fire was higher than that due to the coal fire, he does not state how much; but it is important to note that a difference of 4°F . would more than account for the difference of humidity which he found between the gas and coal fires.

Musk plant test.—No conclusions as to the merits of the stoves were drawn from this test.

In conclusion, Mr. Jones's experiments were carried out in a very small room, of 935 cubic feet capacity, the air of which was obviously vitiated from some source other than the stoves, since the CO_2 often exceeded 10 parts in 10,000 in the morning, and averaged 3.039 in excess of that in the outer air, without any stove or fire in the room. The amount of air passed through the room per hour is not recorded by Mr. Jones, a serious omission; but it would seem from his results that the ventilation was deficient. Further, it is essential (a) to determine where the air drawn into your room comes from, and (b) to apply all the tests to the air before admission which you apply in the room. Otherwise the results are of little value. Mr. Jones did not do this.

It is to be noted that the conclusion drawn from the Coal Smoke Abatement Society's inquiry was not that all gas stoves are good, but rather that there is no inherent necessity why a gas stove or fire should not be as good as, or even better hygienically than, a coal fire, provided it is intelligently constructed and properly fitted to a good flue.

We are, Sirs, yours faithfully,

H. A. DES VOGES, M.D. BRUX,
Honorary Treasurer, Coal Smoke Abatement Society.
JOHN S. OWENS M.D., A.M. Inst. C.E.,
F.R.G.S.

Jan. 15th, 1907.

MEAT DIET AND THE TEETH.

To the Editors of THE LANCET.

SIRS,—I shall be obliged if you will allow me briefly to supplement the remarks made by Dr. Chalmers Watson in THE LANCET of Jan. 12th in reply to a letter by Dr. J. Sim Wallace which appeared in the issue for Jan. 5th. This most interesting investigation is still incomplete but is sufficiently advanced to justify one in publishing some general conclusions which may assist others working along similar lines.

In the first place, one is struck by the essential similarity in the pathological changes occurring in the teeth of rats and of man. In the three rats referred to by Dr. Chalmers Watson the teeth presented all the characteristics of "honey-combed teeth" seen in children who have been improperly fed; and microscopically, too, allowing for natural differences in the histology of the teeth, the defects were similar to those found in honeycombed teeth in the human subject. One would almost feel inclined to apologise to those acquainted with comparative pathology for pressing this matter of the essential similarity of pathological processes in animals and in man, did one not often meet with critics who deny it, although they unhesitatingly accept the principle of the similarity of physiological function.

The second noteworthy fact is that in spite of the striking alterations present in other organs of rats fed on a meat diet the teeth show no evidence of having suffered. This is what any dental physiologist would have expected and should afford food for reflection for those who are lamenting the "degeneracy of the teeth" of the present day. I have for several years had unique opportunities in studying this question in the class of patient who would be most likely to show signs of degeneracy and the results of these experimental investigations have strengthened my conviction that there is no evidence whatever of any "degeneration of the teeth" at the present time. We must, therefore, in my opinion, look in other directions for the cause or cause of the increased prevalence of caries.

I am, Sirs, yours faithfully,

Edinburgh, Jan. 13th, 1907.

J. H. GIBBS.

To the Editors of THE LANCET.

SIRS,—Dr. Chalmers Watson contends that a dietary deficient in lime salts does not make the teeth susceptible to caries and that the facts ascertained from his investigation support the teachings of Dr. J. Sim Wallace on this subject. If this be so, it would be well to know further whether the artificial feeding of infants prejudicially affects the teeth, and whether it is true that artificially fed children are specially susceptible to dental caries as has been contended.

I am, Sirs, yours faithfully,

Kingston-on-Thames, Jan. 13th, 1907.

W. GEO. CRESTWELL.

TUBEROSE SCLEROSIS OF THE BRAIN.

To the Editors of THE LANCET.

SIRS,—I have read with some interest the letter from the editor of *Brain*, published in THE LANCET of Jan. 12th, 1907. He is incorrect in supposing that Dr. A. W. Campbell's work is "apparently unknown" to me. I am well acquainted with Dr. Campbell's paper on Cerebral Sclerosis, published in *Brain*, 1905, and the fact that the case of tuberoze sclerosis occurring at the West Riding Asylum, Wakefield, differed in some important respects from the similar cases described by him was the chief reason that made me send my account of the case to THE LANCET for publication.—I am, Sirs, yours faithfully,

MARGARET B. DOBSON, M.D. Lond.,

Pathologist to the West Riding Asylum, Wakefield.

Jan. 14th, 1907.

DUTY-FREE ALCOHOL FOR MEDICAL PURPOSES.

To the Editors of THE LANCET.

SIRS,—May I be permitted to correct one or two errors in your annotation under the above heading in your issue of Jan. 5th, 1907, p. 40. Your correspondent is in error in stating that the new grade of methylated spirit, "industrial methylated spirit," is "undenatured"—namely, unmixed with naphtha. The Revenue Act, 1906, provided, it is true, for the omission of the three-eighths of 1 per cent. by volume of mineral naphtha in industrial methylated spirit, but at the same time the wood naphtha was retained in smaller proportion, the new spirit containing the one-nineteenth part of wood naphtha instead of the one-ninth part as contained in ordinary methylated spirit. The suggestion made by your correspondent that medical men should be allowed to employ industrial methylated spirit for external use has been in part anticipated by the Inland Revenue authorities, as the new Act provides for its use in the composition of soap, compound camphor, aconite, and belladonna liniments of the British Pharmacopoeia. It remains to be seen whether the presence of 5 per cent. of wood naphtha in industrial methylated spirit will confer on the spirit the irritating properties that are associated with ordinary methylated spirit. If the new spirit should prove to be irritating the matter might be brought to the notice of the Inland Revenue authorities, who might allow a further reduction in the proportion of wood naphtha present or permit the employment of some other denaturing agent. An inquiry has recently been addressed to the Inland Revenue authorities as to whether it is permissible to use methylated spirit in preparations for outward application if methylated spirit is prescribed by a medical practitioner. The secretary to the Board of Inland Revenue replied "that it is illegal to use methylated spirit."

cantine scolaire and which was given to what in England would be described as pauper children. My visit to the Marseilles *cantines scolaires* helps to explain how this has come about, for here the poorest section of the population are taught how to render the refinements of the table accessible to all. Artistic cooking is not a question of money but of good taste, of skill, and of painstaking. It can therefore be applied just as well to a dinner of three courses costing only 1½d. as to an extravagant banquet. But, then, everyone in France is more or less a cook and takes a genuine and technical interest in the matter. The head-master at the rue Puget school had spent hours in discussing menus with the *cantinière*. Such discussions were not necessary so far as the service was concerned but were pleasant and interesting to both parties. Personally, I raised the question of finance, for 1½d. seems a very small sum for a full meal. Thereupon the head-master began to dictate what an *ordinaire* for 50 boys would cost. Beef he put down at 24 sous the pound. It is curious that at Marseilles more than at Paris the people still talk of sous. Three kilogrammes would therefore cost 3 francs 60 centimes. Then there might be one kilogramme of Italian pastes, 50 centimes; six kilogrammes of potatoes, 60 centimes; half a litre of oil to bake the potatoes, 50 centimes; salad, 40 centimes; and flavouring ingredients, 25 centimes. This makes a total of 5 francs 85 centimes and would be enough for 50 pupils who at 15 centimes each would pay 7 francs 50 centimes, so there would be a surplus of 1 franc 65 centimes remaining in hand. Yet the 3000 grammes of meat divided by the 50 pupils would give 60 grammes to each pupil or ten grammes more than the amount stipulated in the by-law. As the meal costs less than 1½d. there is a large margin for the purchase of a better quality of meat, 6d. a pound being a small sum to pay for beef. But then, as explained above, this inferior quality of beef is rendered tender and tasty by the method of cooking.

At the Rue Puget school the 60 boys who remained for their midday meal were, I was informed, for the most part children of shop assistants and small tradesmen. On that day 13 of them were not able to pay for their food and had free tickets from the municipality. The master regretted that a greater number did not dine at school where the meals are better, cheaper, and cleaner than those which the children generally had at home; moreover, he insisted that appetite was contagious and the weakly, delicate children who did not care for their dinner ended by following the example of the more robust and, if only for the sake of getting back to the playground, managed after all to eat their food. This was less likely to be the case if they went home. It was not only a question of feeding the hungry but of enticing those who were not hungry to eat what was necessary for their sustenance.

At the girls' communal school of the Rue St. Savaornin there was a meal on the day of my visit that reminded me a little of English extravagance. There were 40 girls and they each had a small, plain, fried beefsteak; there was no sauce, nothing whatsoever to disguise the lack of flavour or the toughness of the meat. Consequently, it being necessary to buy more expensive meat, two and a half kilogrammes of steak at 2 francs per kilogramme had been purchased. This made 5 francs for the 2500 grammes of raw meat which being divided amounted to 62 grammes, or barely more than two ounces of uncooked steak for each of the 40 pupils. But 40 times 15 centimes only make 6 francs, so there did not remain more than one franc for the rest of the dinner. Evidently too much had been spent on the meat. Two francs a kilogramme is equal to 16d. a pound of 500 grammes, whereas the English pound is only equal to 450 grammes; the cost may therefore be translated as equal to 9½d. the pound, and steak obtained in England for that price is not likely to be particularly succulent or tender. The really good part of this dinner was the fried potatoes and the salad that accompanied the steaks. But the oil for frying the potatoes doubtless cost 50 centimes and it was the oil that imparted to the potatoes their beautiful golden colour and their crisp, delicate crust. Then the salad must have amounted to another half franc, while the seasoning, the traditional three parts of olive oil to one of white wine vinegar, together with suitable herbs, must have cost as much again. The potatoes and the salad for the 40 pupils must have necessitated an outlay of at least another 2 francs, so that with the steak at 5 francs this made 7 francs or more. Thus I conclude that the attempt to give a steak, however small

and inferior in quality, meant a deficit of at the very least one franc, or an expenditure of 20 per cent. more than the receipts. Above, however, I have shown how a satisfactory and much more artistically cooked meal can be given for less than 15 centimes a head. Doubtless an occasional change is beneficial and what is economised on the one meal can be spent on the other. Thus it sometimes comes to pass that the children are given a plain piece of steak but such extravagance is the exception, not the rule.

MILK IN SMALL GENERAL SHOPS.

(FROM A CORRESPONDENT.)

I.

THE question of the milk-supply of England in general, and of London in particular, has been widely discussed in recent years. It has been shown that the methods usually employed on dairy farms as regards the conveyance of milk by train and its distribution after arrival in London or other great towns are all susceptible of much improvement. The fact, however, undoubtedly remains that, although progress towards insuring a satisfactory milk-supply has been made, there is still need for far wider and more radical reforms in this direction. The problem of obtaining a milk-supply comparatively free from pollution is one that must be met in all the stages through which milk passes from the cow to the consumer. At the present time I shall merely consider somewhat briefly the milk question from the standpoint of its sale in small provision shops. Of course, it is obvious that milk is frequently badly polluted before it reaches the small retailer, but that is no valid reason why precautions should not be taken to guard it from contamination whilst it is in the shop. That such precautions are not generally taken has been freely stated in medical and lay journals during the past few years. The ordinary individual and, to some extent, the medical man, have little idea of how largely milk is sold in small general shops in all parts of London. The statement has been made on excellent authority that about 70 per cent. of the total milk-supply of London is to be found in the small shops. That being so, it is a matter of infinite importance that all due care should be taken to safeguard the food on which the greater part of the bottle-fed infant population in the poorer quarters of large cities should chiefly depend for nourishment, though it is probable that a considerable amount of the milk given to the poorer class of children is a condensed milk of one sort or another.

In order to convince myself as to the conditions prevailing in small general shops in poor localities in which milk is sold I determined to make a short tour of inspection through a few of the poorest parts of London. I must, however, disavow any intention of treating the matter from a scientific point of view; my object was simply to use my senses of sight and smell to the best of my ability and to gather general impressions, perhaps, rather than to gain any very definite details. It struck me at once that the East End was obviously the district where the greatest number of poor was gathered together and that there I should be able to observe in most favourable circumstances the manner in which the retail milk trade was conducted. I accordingly betook myself to that maze of mean streets and monotonous drabness known as the East End and selected for my first series of observations a well-known street not far from the goods station of the Great Eastern Railway in Shoreditch. The portion of this street through which I passed may be described, I suppose, as typical of that part of London—that is to say, it is dirty, dull, and equalised. The monotony of the houses is only relieved here and there by conspicuously glaring public-house fronts, while numerous small general shops are characteristic features of the neighbourhood.

The first shop into which I entered was about 18 feet long by 14 feet wide and fairly lofty. It was furnished with a counter on one side stretching from the door almost to the end of the room. The shop was packed with a heterogeneous mass of goods, mainly eatables, but intermingled with these were other articles of domestic use, as firewood, paraffin oil, and matches. The contents were scattered in all directions, on the floor, on shelves, while the counter was crowded with a variety of miscellaneous articles, not omitting samples of fish. The door of this establishment stood wide open, so that dirt and dust had free ingress, and judging

At that time, some 13 years ago, there were only three or four schools where meals were provided and these were only given in exchange for payment. Further, such endeavours were absolutely voluntary, untrustworthy, and uncontrolled. So it was decreed that municipal *cantines scolaires* should be established wherever there was reason to believe such "an institution would respond to the needs of the working population." The municipality undertook to provide all the material necessary, an inventory would be drawn up, and the directors of the schools would be placed in charge of this property. Each *cantine* would have a *cantinière* nominated by the mayor and placed under the authority and direct control of the head of the school. A committee of 22 members would be appointed by the mayor, presided over by the mayor or his representative, and would examine the demands made by the families who stated that they were unable to pay for the feeding of their children while at school. The *cantinière* or cateress is paid £1 12s. per month as wages. One of her duties consists of warming whatever food the children may bring with them and she must on no account accept any sort of payment from the children for any such service.

This latter is an important consideration. Parents may be able and willing to supply their children with food but if the children bring such food with them it must of necessity be cold. At Marseilles such food may be warmed free of any charge whatsoever. As the community supplies the entire school gratuitously to the children, including the services of the teachers, it was not considered a very great effort to add the services of the *cantinière* and a small space in the kitchen stove to warm the meals. Apart from the midday meal the *cantinière* may sell to the children chocolate and dried preserved fruits but not the ordinary sweets which children hanker after though they are often far from wholesome. The by-law has articles enforcing absolute cleanliness in the kitchen and in regard to all the utensils used; moreover it enters into the detail of the weekly menu. Thus it is stated that on Monday there shall be "lean" soup—that is to say, soup in which there is no meat—but with rice, beans, peas, lentils, oil, or butter it may be nutritive and substantial, while it is rendered tasty by the variety of vegetables used together with aromatic and flavouring herbs. Then follows a *ragoût*. This is a generic term for meat braised or stewed in conjunction with other, generally vegetable, ingredients. On Monday this stew, it is proposed, should be made of the neck or breast of mutton, with potatoes, haricot beans, or Italian paste of the macaroni kind. On Tuesday, instead of a lean (*maigre*) there is to be a fat (*grasse*) soup—that is to say, a soup made with meat, probably the national *pot-au-feu*, or beef slowly simmering in a great variety of vegetables, with burnt onions to colour and thyme and garlic to flavour. Thus a beef soup is obtained which is not insipid like English beef-tea. Then follows the beef itself, not the stringy, tasteless fragments of beef which remain after beef-tea or soup has been made in an English kitchen and which are only fit to be thrown to the dogs but good meat from which firm slices can be cut. As this meat is impregnated with the flavour of numerous vegetables it is savoury though it is only boiled beef. Of course for this purpose prime pieces such as the sirloin are not employed. On the other hand, if the inferior pieces of beef were roasted, as is very generally the custom in England, they would be tough and tasteless. By the above process the meat is rendered at once tender and tasty though only the cheaper pieces or joints are used. Very generally some of the vegetables from the soup are served with the beef when hot. This, indeed, is the French national dish. *Bouillon et bœuf* are to the Frenchman what roast beef and Yorkshire pudding are to the Englishman. The British fare is good when the quality of the beef is good; but the French fare is good even when the quality of the beef is inferior. This is an all-important consideration as everyone cannot be fed on prime joints; the cheaper portions must also be consumed especially where economy is necessary. Thus, though meat is very dear in Paris, at all the ordinary workmen's restaurants an *ordinaire* can be obtained for 4d. This is the usual name given to a plateful of *bouillon* followed by a large thick slice of the beef with which the *bouillon* has been made. The meat is accompanied with some of the vegetables if it is hot, or pickled gherkins or the like if cold. By spending 4d. or 5d. more, wine, bread, and cheese can be obtained, and thus for from 8d. to 9d. the workman has a substantial if a very

plain meal. On a smaller scale this is the sort of suggested in the Marseilles municipal by-law for the *cantines scolaires* on Tuesdays. Evidently it is calculated that amount of beef employed will not make soup for two days on the Wednesday there are vegetable soup, macaroni, and probably braised or fried. Thursday is the weekly hot day. On Friday there are another vegetable soup and a *ragoût* whatever meat may be preferred, and on Saturday we again the *ordinaire*—namely, the *bouillon* and the beef, the vegetables with which it has been made. Now comes an important question of the quantity. This also is specified by the by-law. The helpings of soup, whether vegetable meat soups, are set down at 30 centilitres, or half a pint. The meat, whether in the form of boiled beef or a steak given in portions of 50 grammes, or one and two-thirds ounce; with half a pint of potatoes, haricot beans, lentils, or other vegetables. Latitude is allowed to modify this according to the season of the year and the charge is 5 centimes for the soup and 10 centimes for the portion of meat, that is 1½d. for the entire meal; but in the 10 schools frequented by older children it is allowable to add a little more for larger helpings.

All the police stations at Marseilles keep paper tickets, or cheques which the parents of the neighbourhood and give to their children. These are collected by the *cantinière* the first thing in the morning and given to the *cantinière* then knows how many meals she must prepare. If, however, a child arrives at school without a cheque for a meal the teacher thinks he needs food the teacher may give provisionally. The teacher must then at once communicate with the parents and the town authorities. The parent may apply personally or by writing to the educational committee at the town hall. Their case is investigated and it is thought that they are entitled to free meals for their children they receive the cheques directly from the municipality instead of having to buy them at the nearest station. When, however, the child arrives at school he knows whether the cheque which he holds in his hand has been bought and paid for or has been received gratuitously by the parents. Thus at Marseilles, as at Paris and elsewhere, the greatest precautions are taken not to harm the children. The cateress has to enter in a book, and keep a careful account of, all her purchases and all the helpings of soup or meat which she has served. Every fortnight she must present her books at the town hall and then the cheques which she has received for meals are converted into cash. The money which she thus receives must be applied on food and not on any kitchen utensil, or fuel, or washing dishes, or any other item. Thus it will be seen that a considerable portion of the cost of the meals is paid by the municipality even when the parents purchase the cheques for their children. Moreover, the 22 members of the committee are supposed to pay surprise visits at meal times and to weigh at least five portions and thus to verify the proper amount is given.

When I was at Marseilles I visited the communal school for boys in the rue Poget. This is an old house not expressly for a school. The room where the meals are served gives on to the play yard and is rather dark. The tables were covered with tin which was easy to keep clean. There were no *serviettes* as I had seen at the Paris *cantines*. Some 60 boys were at table; a few drank water but the majority had brought a little of the ordinary red wine of the country with them. They probably drank two ounces of wine containing 10 to 12 per cent. of alcohol, to which about 100 per cent. of water was added. A large proportion of these who were not able to pay for their meals were at least able to pay the fractional part of a farthing which so small a quantity of wine cost. On the day of my visit consisted of potatoes, followed by beef and macaroni. The latter was rather tasteless, insipid macaroni boiled in milk as served in England. It was *macaroni au gratin*. The water had been well drained away, then the macaroni was mixed with cheese, sprinkled with bread crumbs, and placed in the oven till it had a golden, crisp, and tasty crust. The beef was lean, cut into portions before it was cooked and then served with a sauce that was a real work of art. I had just arrived from Gibraltar having travelled on board a well-known P. & O. steamer. Here as a saloon passenger I was supposed to enjoy every refinement and luxury. But I am bored and I would have been very glad to obtain a

Apart from Christian or even merely humane motives the lives of these hapless waifs should be jealously guarded. In these days of a steadily decreasing birth-rate and of high infantile mortality they are of value to the State; they are assets which the country cannot afford to throw away, especially in the face of such statements as that which appeared the other day of a Lincolnshire district where the infantile mortality was 267·7 per 1000 births.

Jan. 15th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Milk-supply of Cardiff.

At the last two meetings of the Cardiff health committee it has been alleged that there is a considerable amount of milk sold in Cardiff which has been diluted. The milk churns are said to be tampered with at the railway station, and as there is only one inspector who is authorised to take samples it is apparently not difficult for the milkmen to watch his movements and thus to escape detection when systematically impoverishing the milk either by actually diluting it with water or by mixing a supply with skimmed or separated milk. In order to enable the committee to decide as to whether the Sale of Food and Drugs Act was being properly carried out in Cardiff Dr. E. Walford has submitted a report which shows that when compared with other large towns in England and Wales the number of samples per 1000 of the population taken for analytical examination is rather higher in Cardiff than elsewhere, while the proportion of adulterated articles is very much below the average. For example, in 1905 out of 388 samples of milk taken in Cardiff only 14, or 3·6 per cent., were adulterated, while in the administrative county of Glamorgan 7 per cent. of the samples examined were adulterated and in the neighbouring borough of Newport about 10 per cent. of the samples examined are found to be adulterated. Dr. Walford suggests that the assistant inspectors of nuisances should be appointed to act as inspectors under the Act and be thus enabled to take samples. In order to carry out this suggestion it will probably be necessary formally to appoint them in the first instance market inspectors, a procedure which has been adopted in Newport. If a sufficient number of inspectors are appointed, and if they are provided with bicycles to enable them to travel speedily from one part of the town to another, there ought to be no difficulty in carrying on a vigorous campaign against the defaulting milk vendors and insuring a pure supply of milk to the inhabitants.

River Pollution in Monmouthshire.

Among the duties imposed upon sanitary authorities is that of administering those Acts of Parliament which have for their object the prevention of the pollution of rivers. As a rule, they are not particularly active in carrying out this duty and their apathy is, no doubt to a great extent, accounted for by the fact that they are themselves only too often the greatest offenders against the provisions of the Acts. It is not surprising to find, therefore, angry protests from local sportsmen when a river celebrated for its fishing is being polluted. In the annual report of the board of conservators of the rivers Uck and Ebbw in Monmouthshire attention is drawn to the serious pollution of the Uck by the corporation of Newport. Samples of water taken from streams and tributaries of the river have upon examination revealed the existence of serious pollution both by sanitary authorities and from works situated on the banks of the streams, in one instance the stream being practically an open sewer. The Board of Agriculture and Fisheries has been communicated with by the conservators and it is anticipated that some steps will now be taken to lessen the pollution.

Housing of the Working Classes in Newport.

A recently issued report of Dr. J. Howard Jones, the medical officer of health of Newport (Mon.), contains statistical information of much interest relating to the housing of the working classes. He has collected details respecting 1760 cottage houses, including the rental paid and the number (1) of rooms in each house, (2) of inhabitants distinguishing between adults and children, (3) of families occupying the house, and (4) of the lodgers taken in. The

average weekly rental was found to be equal to 1s. 5d. per room. The average number of persons per house was in one district 7·5 and in another 6·64. The average number of persons per room was 1·14, a satisfactory feature when it is remembered that the Registrar-General suggests that a standard of overcrowding should be where there are more than two inhabitants per room. A little more than one-half of the total number of houses were found to be occupied by more than one family and in about 7 per cent. lodgers were taken in.

Bristol University College, Colston Society.

The eighth annual dinner of the Bristol University College, Colston Society, was held on Jan. 11th in the lecture hall of the college under the presidency of Sir William S. Church, Bart, K.C.B. The Colston Society has been instrumental in rendering useful financial help to the Bristol University College and has also done much to draw public attention to the scheme for a West of England university, with Bristol as the centre. The Lord Mayor of London, Sir W. Anson, M.P., the Vice Chancellor of the University of Oxford (Mr. H. Warren), and Mr. Henry Hobhouse were among the speakers, and they all advanced strong arguments in favour of a university for Bristol. The collection amounted to £489, the second highest which the society has had.

Sanitary Matters in the Tavistock Rural District.

At a meeting of the Tavistock rural district council held on Jan. 10th certain statements made by Dr. R. Deane Sweeting, a Local Government Board Inspector, with respect to the sanitary condition of the district were considered and the chairman presented a report which took the form of a detailed reply to Dr. Sweeting's criticisms. The circumstances have been already mentioned in THE LANCET. The chairman's report stated that the council was willing to carry out Dr. Sweeting's recommendations in reference to disinfection, and in conclusion requested the Local Government Board to sanction the appointment of Mr. O. O. Brodrick as medical officer of health for the ensuing year, as the council was quite satisfied with the manner in which his duties were performed. The council adopted the report and decided to send a copy to the Local Government Board.

Sir Squire Bancroft at Yeovil.

Sir Squire Bancroft recently gave a recital of "A Christmas Carol" at the Yeovil Assembly Rooms in aid of the funds of the Yeovil Hospital. Sir Spencer Ponsonby Fane, who presided, said that Sir Squire Bancroft's charitable endeavours had now realised £15,600.

Jan. 14th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

University of Edinburgh Annual Report.

The annual report of the University of Edinburgh for 1906 has just been issued. The total number of matriculated students was 3199 (including 463 women), the highest number reached for 13 years. Of the total 1500 (including 16 women) were in the Faculty of Medicine; and of this number 681 belonged to Scotland, 301 were from England and Wales, 136 from Ireland, 82 from India, 272 from British colonies, and 23 from foreign countries. The number of women attending the special school for women with a view to graduation in medicine was 71. The number who graduated was 167 (including 17 women). The number of graduates who took the M.D. degree was 90 (including two women). The diploma in tropical medical and hygiene was conferred on five candidates, while the special certificate in diseases of tropical climates was conferred on 60 candidates (including eight women). The total annual value of fellowships, scholarships, bursaries, and prizes in the Faculty of Medicine amounts to £3630. A sum of £600 per annum is available for the encouragement of original research. Under the paragraph devoted to the Carnegie foundation it is noted that it has so far not effected a marvellous increase in the number of students but that it continues to be noticeable that many who avail themselves of the section of the scheme which provides for the payment of class fees take out a larger number of classes than they would probably otherwise have done. Personal charges in the professoriate and in the names of lecturers are given in detail, but these have been noted in THE LANCET at the time when the charges were

from the littered state of the street outside the prediction may be made confidently that in dry weather a plentiful supply of dust and of even more objectionable varieties of dirt would be carried in past the door in no inconsiderable quantities. The milk, contained in an ordinary tin pail, had its place amid this promiscuous heap of provisions and household supplies of various kinds, in close proximity to the open door and consequently in the most convenient situation to collect any atoms which might float in. In this instance the milk was partially covered, but inasmuch as the cover did not fit closely but left sufficient space on all sides for any quantity of foreign matter to gain an entrance, it might as well have been dispensed with. It cannot be said that the shop in itself was especially dirty nor was it clean enough to clash with its environment. The persons, a man and a woman, who served in the shop were by no means personally clean. I was not near enough to observe whether the milk pail was clean, but I did notice that the dipper was placed on the cover when not in use, thus affording ample opportunities for it to collect extraneous matter, some of which would be afterwards conveyed to the milk.

The next shop to which I paid a visit was situated a few doors from the first one and was in most respects in a worse sanitary state. It was much smaller, more dingy, and more overflowing with eatables and otherwise. This shop cannot have been longer than 12 feet and in width was about 8 or 9 feet. It was low in the ceiling and in most of its external aspects presented a decidedly grimy appearance. The shelves and the counter were heaped with many varieties of articles necessary to the small housekeeper. The milk was contained in an open receptacle and quite close to it, and almost on a level with it, was a dish of cured herrings. As in the former shop so in this shop—paraffin, firewood, and provisions were mixed together. In this case, too, the factor of personal cleanliness did not enter very intimately into the scheme of things. Of course, at this time of the year there were no flies in evidence, but one can imagine easily that in the sweltering days of midsummer such articles of food as fish and jam would attract flies in great numbers and that these would convey dirt to the milk, sometimes even dangerous germs. I visited two or three other shops of a like nature in the same vicinity, but the conditions of these differed only in degree from the two former shops which I had visited.

(To be continued.)

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Meals for School Children.

At the last meeting of the Manchester city council it was proposed and carried that the Act of 1906 be adopted and that the details of providing meals for school children should be referred to the education committee. In speaking to the motion, Sir James Hoy thought it would probably be proposed to establish canteens in the worst districts and that payment should be charged at the rate of 1d. a meal. But as he said there would be many unable to pay these would not be left unfed. Members of the council of various political views seemed to agree on this question of feeding the children. In Manchester the cost is expected to be about £8000 a year, but as a rule these prophetic estimates are exceeded. One gentleman referred to some investigations by the Chorlton guardians, when out of 1295 applications relief was refused in 1000 cases. Sir James Hoy said the committee would try to ascertain the real cases deserving of their relief. Everyone sympathises with the children sent ill-fed and hungry to school and knows that the costly and elaborate compulsory education machine can only be run at a loss when those for whom it has been devised are in the apathetic and exhausted condition of semi-starvation. No doubt from the physical standpoint it will be good for the country that the next generation of men and women instead of being stunted and starved in childhood should have been well fed. But it is possible that the sense of parental responsibility and the ties of family may become so far relaxed that the physical benefit will prove to be purchased at a high rate.

Seamen's Sickness and the Port of Manchester.

On Jan. 7th the Manchester port sanitary authority discussed the subject of the notification of sickness on ship by the captains of vessels arriving at the docks. Recently a sailor who left a vessel at Salford had to be a few days afterwards to the Ladywell Sanatorium suffering from typhoid fever. No notification of the illness had meantime been given. Mr. W. F. Dearden said he was to devise a scheme for the notification of all cases of sickness and complained of the slowness of ships' officers as to matters. As was stated some time since, powers have been obtained for the inspection of food imports to Manchester and in view of the increased work this will entail it decided at the meeting to appoint two new inspectors.

Long Service.

The Macclesfield board of guardians has recognised great value of the services rendered by Mr. James Br Hughes by passing a resolution congratulating him on completion of 40 years as medical officer and public vaccinator. This is not his only claim to honourable mention; he is also Surgeon-Lieutenant Colonel 4th Battalion Cheshire Regiment.

Dangers to Infant Life: Compulsory Notification of Birth.

Blackburn is very properly concerned with schemes for the reduction of the high death-rate among infants, of which is the encouraging of the mothers to suckle their children. This has the especial approval of the local committee of the corporation which is going to appoint women sanitary inspectors. It is also seeking powers for the compulsory early notification of births. The mortality among infants in the districts where the women work till their confinement and get back to the mill as afterwards as they can creep about is not to be wondered at. No doubt, too, the mill or other work of the women with young infants leads to the great use of comforters, soothers, syrups, or whatever the opiate is called in the districts where they live. The briskest sale is where the women work at home. It is said that in Coventry about 12,000 doses of "soothing syrup" had been given to babies in one week and that in one Welsh colliery district three quart bottles of laudanum were sold every week for the same purpose. The strange thing is that so many survive. In an address to the women the other week at Preston Miss F. Zanetti, inspector to the Chorlton board of guardians under the Infant Life Preserving Act, who sees more than most people how heavily the babies are handicapped in their struggle to live through their first 12 months, after enumerating some of the dangers to be overcome or avoided, went on to say that the personal care and nursing of the child by its mother was the chief essential to its well-being and contrasted the high death-rate of 50 per cent. in the bottle-fed child with the 7 per cent. of those fed naturally by their mothers. During last year there had been on the register 18 cases comprising 49 children who had been nursed in 19 individual houses under the Act, and in all but three cases the nursing was satisfactory. There is one provision in which it might be some improvement. No matter how many children a woman nurses in succession, unless she has the care of one or more at the same time she does not come under the Act. This allowed of what had happened in Miss Zanetti's district—namely, that a woman who had been refused a licence had taken in two children, though not at the same time. These nurse children are seldom, if ever, taken from love or the pleasure of tending an infant but are a purely business matter to increase the family income. Miss Zanetti has sometimes been told that it paid the rent and rent collectors have been asked to wait a day or two "the child's money had not been sent yet." There is a certain amount, probably a good deal more than one might imagine, of profitable business done by the more astute of these women. One of them in Manchester had a child brought to her on the day of its birth, 7th week being paid for it. And though the child might seem slight it lived through its early days and was five months old was sent to a woman in Yorkshire who advertised for a baby. This person took it with a premium of £25 but like a clever financier she passed it on to another who took it for £20, so the Yorkshirewoman made money by the transaction. No doubt some of these women are humane and even tender, but recent revelations of children's calcined bones and so on show that the traffic in babies should be most carefully watched.

of Belfast Lough, due, it is said, to contagion by milk, while at Holywood, on the opposite side of the same lough, there is also an outbreak, which has been shown to depend on permeation of the surface soil in the affected areas with sewage matter due to defective joints in the sewers.

Citizens' Sunday in Belfast.

In Belfast on Jan. 13th special services were held in the various churches urging the importance of the citizens taking a more active part in the management of civic affairs. The rector of St. George's Church (Rev. Dr. H. D. Murphy) delivered a very able and outspoken sermon, in which he said that they could not avoid putting down to the corporation as a whole the charge of incapacity in managing civic affairs. He urged his hearers at the approaching municipal elections to give their votes to the man whom they considered upright, conscientious, and honourable, the man who had no private ends to serve, the man whom they would be prepared to appoint director of a concern in which they were shareholders.

Jan. 15th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Action of the X Rays on Gestation.

M. Sébilleau of Bordeaux has submitted doe rabbits after impregnation to the action of the x rays at various stages of gestation. Some of the animals had only one exposure of considerable duration, such as is used in radiography, while others had repeated exposures for various periods. The result of these observations was to show that whether there was only one exposure or a number of them the effect of the x rays was, if not to induce abortion, at least to retard the date of parturition and to inflict serious injury on the progeny, which exhibited a falling away from the normal vigour and weight in direct proportion to the number and length of the exposures. M. Sébilleau described his observations at a meeting of the Biological Society held on Dec. 22nd, 1906.

The Timorousness of Oriental Nations.

At a meeting of the Society of Hypnology and Psychology held in November, 1906, M. Damoglion said that in Turkey and Egypt timorousness constituted an endemic and hereditary mental condition. His investigations tended to show that this was due to a mental bias which has been developed as the result of a system of absolute and irresponsible despotism having reigned for centuries throughout all classes of society without distinction of race, nationality, or religion. Children had to keep absolute silence in the presence of their parents, young men in presence of their elders, apprentices in presence of their masters, and so on. Ever at the mercy of despotism and arbitrary treatment the Orientals lived under the domination of fear. Passive creatures, having no will of their own, no opinions, and no individuality, their timorousness too often rendered them addicted to lying, trickery, and hypocrisy.

Cancer of the Pharynx.

At a meeting of the Surgical Society held on Dec. 26th 1906, M. Hartmann read for Dr. Vallas a communication describing 19 cases of pharyngectomy for cancer of the pharynx. The results which he has obtained marked an improvement in methods of treatment. Among the 19 patients operated on there were 12 recoveries and seven deaths. In all the cases the lesions were extensive. A thesis by one of his pupils, who reported ten operations performed for cancers of limited area, mentioned that after the ten operations there were nine recoveries and one death. As sequelæ to the operations performed by Dr. Vallas there were three early relapses among the 12 successful cases, but with the remainder there was no recurrence until a period varying between three months and 10 or 12 months had elapsed. The mode of the operation must be in accordance with the extent of the lesions. In general a lateral slightly curved incision passing above the hyoid bone gave access to the seat of the disease; the subsequent steps of the operation must be determined by the circumstances of the case.

Complete Outward Dislocation of the Knee.

At a meeting of the French Society of Military Medicine held on Dec. 20th, 1906, M. Epaulard described a case of complete outward dislocation of the right knee. The patient was a soldier who had a violent fall from his horse during manoeuvres while it was at a gallop. The tibia was withdrawn from the femur for a distance of six centimetres. The part was not very painful except at the level of the internal condyle of the femur at a point corresponding to the insertion of the internal lateral ligament. Reduction was easily effected under chloroform and the patient was able to resume duty for almost the whole of his period of service. The accident was rare. M. Epaulard has found in medical literature eight similar cases all terminating in recovery.

Physiological and Therapeutical Action of the Resin of Euphorbium.

The resin of euphorbium finely emulsified and injected into the tissues in very minute doses possesses the remarkable property of producing local æmæmia (*ischémie de la circulation rouge*). M. Périeres has suggested that this action might be used for the checking of hæmorrhage due to uterine fibroids, a condition which often requires surgical treatment. In all the cases of fibroma of the uterus which he has observed he has made use of this resin injected into the cervix, with the result that not only was the hæmorrhage stopped but the fibrous body itself underwent an arrest of development and tended to disappear by continuous regression. M. Périeres read a paper on this subject at a meeting of the Academy of Sciences held on Dec. 24th, 1906.

French Colonial Sickness Statistics.

At the meeting of the Academy of Medicine held on Jan. 15th M. Kermorgan gave an account of the various endemic, epidemic, and contagious diseases prevalent throughout the French colonies in 1905. They can be divided into two distinct categories—namely, those diseases common to both the tropics and to our own temperate regions and those which are distinctly tropical. In the first category come whooping-cough, typhoid fever, influenza, cerebro-spinal meningitis, mumps, measles, tuberculosis, small-pox, and chicken-pox. Of all these tuberculosis merits special attention, for it is mentioned in all the colonial reports as spreading more and more amongst the native populations. Among the maladies special to the tropics must first be mentioned beri-beri, which occupies an important place among the diseases of the natives; cholera, which has prevailed in India and in Indo-China; diarrhoea and dysentery, with or without suppurative hepatitis; leprosy; sleeping sickness, which is much more prevalent than is generally supposed in French West Africa; plague, which is prevalent in India, Cochín China, New Caledonia, and the territory of Quang-Tcheou-Wan; and malaria. This last disease is become much less common in Senegal since the promotion of hygienic measures and the undertaking of regular measures of destruction of mosquitoes and their larvae.

Iodine in the Treatment of Malignant Pustule.

M. André F.-Llobet has for many years insisted upon the excellent results which are obtained by the internal use of iodine in the treatment of malignant pustule. M. Roux read a note on the matter on his behalf before the Academy of Sciences at the meeting held on Jan. 7th. Of 70 cases treated in this way by M. André F.-Llobet, whether in his private clinic or in hospital, since 1891 not one died. Experiments on rabbits, animals very susceptible to anthrax poisoning, have confirmed the curative action of iodine administered by the mouth in this disease. Its value given by injections around the pustular focus is well known but its action as administered by the mouth is less widely recognised.

Jan. 14th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Responsibility of an Epileptic Murderer.

PUBLIC opinion in Germany is at present somewhat excited over what is known as the Tessenow case, in which a man has been twice tried at Greifswald, in Pomerania, on a charge of murder, and each time the verdict of the jury was at variance with the unanimous opinion of medical experts.

made. The changes on the Board of Curators of Patronage made during the year were the substitution of Sir William Turner as representing the University Court in place of Sir Patrick Heron Watson, and of Lord Provost Gibson and Bailie Dobie as the representatives from the town council.

University Preliminary Examinations in Scotland.

In the medical preliminary examinations for the Scottish universities the number of candidates and the number of failures are as follows: In the University of St. Andrews, 21, of whom 9 passed in all subjects, 2 in two, and 3 in one, and 7 failed in all; in the University of Glasgow, 107, of whom 30 passed in all subjects, 4 in three, 11 in two, 29 in one, and 33 failed in all; in the University of Aberdeen, 31, of whom 10 passed in all subjects, 4 in two, 3 in one, and 9 failed in all; and in the University of Edinburgh, 147, of whom 51 passed in all subjects, 2 in three, 19 in two, 43 in one, and 32 failed in all.

The Lord Rector's Address at the University of Edinburgh.

The Right Hon. R. B. Haldane, the Lord Rector of the University of Edinburgh, delivered the rectorial address in the M'Ewan Hall on Jan. 10th. The address, it is hardly necessary to state, was of a very high order and all interested in university life and work will find it well worthy of perusal. It is gratifying to be able to state that the students conducted themselves with the utmost decorum. There was a torch light procession at night.

A Well earned Compliment to Dr. W. Bruce.

The members of the Scottish Branch Council who had been associated with Dr. Bruce in the General Medical Council entertained their old colleague at dinner on Jan. 12th, at the North British Hotel, Edinburgh. Sir William Turner, K.O.B., who occupied the chair, proposed Dr. Bruce's health, congratulating him on the good work which he had done in the Council and expressing the high estimation in which he was held. Dr. Bruce replied in feeling terms.

Royal Medical Society.

This society met on Jan. 11th, Dr. N. S. Carmichael being in the president's chair. A dissertation on the Modern Treatment of Fractures by Dr. Wells was read, in the absence of the author, by Dr. J. Gilmour. Dr. W. O. Schlater, B.Sc., read notes of a case of Hemiplegia, and a discussion followed.

Waste of Infant Life in Glasgow.

In its attempt to deal with the problem of reducing its large infantile mortality Glasgow is in at least one respect following the example set by Huddersfield. In one of the most densely populated parts of the city there have just been posted handbills stating that with a view to assist in the reduction of the infant mortality in that district the committee of the Anderston and District Health Association hereby makes offer of a gift of £1 sterling to the mother of each child born between Jan. 1st and June 30th, 1907, provided that the child survives the first year of birth.

Death of Principal Story.

To those who take an interest in the advancement of the cause of education in our Scottish universities the announcement this week of the death of the Rev. Principal Story of Glasgow University must have caused considerable regret. Since 1898 he had held the high office of Principal with much honour to himself and signal advantage to the University. Although previously to his appointment to this position he occupied a chair in the theological faculty, yet it is probably the faculties of medicine and science which have benefited most under his rule. It is true that many factors were at work in bringing this about, yet there is no doubt that the development in these faculties would have been much hampered had it not been for Principal Story's clear comprehension of the ever-increasing demands of the age for fresh equipment and new methods in teaching scientific subjects. He entered upon his duties as Principal at a time of transition and immediately with characteristic energy he set to work and in a short time collected by public subscription a sum of about £100,000 for the purpose of adding to the resources of the University. The handsome buildings, class-rooms, and laboratories for the students of natural philosophy, physiology, materia medica, and medical jurisprudence which have just been erected are the result. It was also, of course, during Principal Story's tenure of office that Mr. Carnegie came

forward with his generous gift to the Scottish University and of this Glasgow received a share. At the moment there is no doubt that in his administrative Principal Story did much for the University, but much by his foresight and business ability he acted in this respect only time will show.

Matriculated Students at the Universities of Glasgow and Edinburgh.

A statement has just been issued giving the number of the matriculated students in the different faculties of the Universities of Glasgow and Edinburgh for the year 1906 and along with it is published for reference the corresponding figures for the last 18 years. In almost every faculty with the exception of that of science, which was started till the year 1893, there is a marked falling of numbers. As regards medicine, in the University of Glasgow for the year 1906 there were 626 matriculated students, as compared with 645 in 1905 and 818 in 1889. This means a decrease of 192 in 18 years. In the University of Edinburgh the matriculated students in 1906 numbered 1465, as compared with 1476 in 1905 and 2025 in the year 1889. This shows a fall of 560 to the extent of 560 in the past 18 years. What the reason of this decrease is it is a little difficult to understand. One would naturally have expected that the institution of the Carnegie scheme for the students would have increased considerably in the years, but apart from economic conditions on the part of the University this has probably been counterbalanced by the raising of the class fees and the higher standard of entrance demanded for the entrance and other examinations.

Grants by Glasgow Corporation for Medical Objects.

The special subcommittee of the finance committee of Glasgow corporation, which was appointed to deal with various applications for grants from the "Common Fund," has decided to make, amongst others, the following recommendations: (1) that a contribution of £3000 in three equal yearly instalments, be granted to the Glasgow Hospital for Sick Children towards the cost of proposed new hospital on the understanding that the committee will choose a site satisfactory to the finance committee of the corporation; (2) that a contribution of £1500 in three equal annual instalments, be granted to the Glasgow Cancer Hospital towards the cost of the proposed extension of the hospital and research department; (3) that a contribution of £900, payable in three equal annual instalments, be made to the funds of Anderson's College Medical School; and (4) that a donation of £50 be made to the fund of the National Society for the Prevention of Cruelty to Children.

Jan. 15th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Health of Dublin.

THE deaths registered in the week ending Jan. 12th equal to an annual death-rate of 31.5 per 1000, as reported in THE LANCET. The average for the year amounted to 26.4 per 1000. This is a melancholy thing in the absence of any special epidemic. The superintendent of Cork-street Fever Hospital reported on Jan. 10th that the admissions there were comprised of cases of measles and scarlet fever with diphtheria, while the number of enteric fever patients had fallen. The main drainage system has now been in operation some months but, as was anticipated, it does not seem to have the least influence in lowering the fatality of the Dublin registration area. It was reported that a severe epidemic of scarlet fever had broken out in the Kingstown township, but the statement has been authoritatively disproved. The members of the corporation are doing whatever they can to maintain the health of the district. On Jan. 14th a new refuse destructor, which cost £5000, was formally handed over to the Corporation by the Horsfall Destructor Co., of London and is now in use.

Epidemics of Typhoid Fever.

For some time there has been a serious outbreak of typhoid fever in the neighbourhood of Jordantown, on the western side of Dublin.

of Belfast Lough, due, it is said, to contagion by milk, while at Holywood, on the opposite side of the same lough, there is also an outbreak, which has been shown to depend on permeation of the surface soil in the affected areas with sewage matter due to defective joints in the sewers.

Citizens' Sunday in Belfast.

In Belfast on Jan. 13th special services were held in the various churches urging the importance of the citizens taking a more active part in the management of civic affairs. The rector of St. George's Church (Rev. Dr. H. D. Murphy) delivered a very able and outspoken sermon, in which he said that they could not avoid putting down to the corporation as a whole the charge of incapacity in managing civic affairs. He urged his hearers at the approaching municipal elections to give their votes to the man whom they considered upright, conscientious, and honourable, the man who had no private ends to serve, the man whom they would be prepared to appoint director of a concern in which they were shareholders.

Jan. 15th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Action of the X Rays on Gestation.

M. Sébileau of Bordeaux has submitted two rabbits after impregnation to the action of the x rays at various stages of gestation. Some of the animals had only one exposure of considerable duration, such as is used in radiography, while others had repeated exposures for various periods. The result of these observations was to show that whether there was only one exposure or a number of them the effect of the x rays was, if not to induce abortion, at least to retard the date of parturition and to inflict serious injury on the progeny, which exhibited a falling away from the normal vigour and weight in direct proportion to the number and length of the exposures. M. Sébileau described his observations at a meeting of the Biological Society held on Dec. 22nd, 1906.

The Timorousness of Oriental Nations.

At a meeting of the Society of Hypnology and Psychology held in November, 1906, M. Damoglion said that in Turkey and Egypt timorousness constituted an endemic and hereditary mental condition. His investigations tended to show that this was due to a mental bias which has been developed as the result of a system of absolute and irresponsible despotism having reigned for centuries throughout all classes of society without distinction of race, nationality, or religion. Children had to keep absolute silence in the presence of their parents, young men in presence of their elders, apprentices in presence of their masters, and so on. Ever at the mercy of despotism and arbitrary treatment the Orientals lived under the dominion of fear. Passive creatures, having no will of their own, no opinions, and no individuality, their timorousness too often rendered them addicted to lying, trickery, and hypocrisy.

Cancer of the Pharynx.

At a meeting of the Surgical Society held on Dec. 28th 1906, M. Hartmann read for Dr. Vallas a communication describing 19 cases of pharyngeotomy for cancer of the pharynx. The results which he has obtained marked an improvement in methods of treatment. Among the 19 patients operated on there were 12 recoveries and seven deaths. In all the cases the lesions were extensive. A thesis by one of his pupils, who reported ten operations performed for cancers of limited area, mentioned that after the ten operations there were nine recoveries and one death. As sequelae to the operations performed by Dr. Vallas there were three early relapses among the 12 successful cases, but with the remainder there was no recurrence until a period varying between three months and 10 or 12 months had elapsed. The scale of the operation must be in accordance with the extent of the lesions. In general a lateral slightly curved incision passing above the hyoid bone gave access to the seat of the disease; the subsequent steps of the operation must be determined by the circumstances of the case.

Complete Outward Dislocation of the Knee.

At a meeting of the French Society of Military Medicine held on Dec. 20th, 1906, M. Epaulard described a case of complete outward dislocation of the right knee. The patient was a soldier who had a violent fall from his horse during manoeuvres while it was at a gallop. The tibia was withdrawn from the femur to a distance of six centimetres. The part was not very painful except at the level of the internal condyle of the femur at a point corresponding to the insertion of the internal lateral ligament. Reduction was easily effected under chloroform and the patient was able to resume duty for almost the whole of his period of service. The accident was rare. M. Epaulard has found in medical literature eight similar cases all terminating in recovery.

Physiological and Therapeutical Action of the Resin of *Euphorbia*.

The resin of euphorbia finely emulsified and injected into the tissues in very minute doses possesses the remarkable property of producing local anaemia (*ischémie de la circulation rouge*). M. Périères has suggested that this action might be used for the checking of haemorrhage due to uterine fibroids, a condition which often requires surgical treatment. In all the cases of fibroma of the uterus which he has observed he has made use of this resin injected into the cervix, with the result that not only was the haemorrhage stopped but the fibrous body itself underwent an arrest of development and tended to disappear by continuous regression. M. Périères read a paper on this subject at a meeting of the Academy of Sciences held on Dec. 24th, 1906.

French Colonial Sickness Statistics.

At the meeting of the Academy of Medicine held on Jan. 15th M. Kermorgan gave an account of the various endemic, epidemic, and contagious diseases prevalent throughout the French colonies in 1905. They can be divided into two distinct categories—namely, those diseases common to both the tropics and to our own temperate regions and those which are distinctly tropical. In the first category come whooping-cough, typhoid fever, influenza, cerebro-spinal meningitis, mumps, measles, tuberculosis, small-pox, and chicken-pox. Of all these tuberculosis merits special attention, for it is mentioned in all the colonial reports as spreading more and more amongst the native populations. Among the maladies special to the tropics must first be mentioned beri-beri, which occupies an important place among the diseases of the natives; cholera, which has prevailed in India and in Indo-China; diarrhoea and dysentery, with or without suppurative hepatitis; leprosy; sleeping sickness, which is much more prevalent than is generally supposed in French West Africa; plague, which is prevalent in India, Cochin China, New Caledonia, and the territory of Quang-Tcheou-Wan; and malaria. This last disease is become much less common in Senegal since the promotion of hygienic measures and the undertaking of regular measures of destruction of mosquitoes and their larvae.

Iodine in the Treatment of Malignant Pustule.

M. André F. Llobet has for many years insisted upon the excellent results which are obtained by the internal use of iodine in the treatment of malignant pustule. M. Roux read a note on the matter on his behalf before the Academy of Sciences at the meeting held on Jan. 7th. Of 70 cases treated in this way by M. André F. Llobet, whether in his private clinic or in hospital, since 1891 not one died. Experiments on rabbits, animals very susceptible to anthrax poisoning, have confirmed the curative action of iodine administered by the mouth in this disease. Its value given by injections around the pustular focus is well known but its action as administered by the mouth is less widely recognised. Jan. 15th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Responsibility of an Epileptic Murderer.

PUBLIC opinion in Germany is at present somewhat excited over what is known as the Tessnow case, in which a man has been twice tried at Greifswald, in Pomerania, on a charge of murder, and each time the verdict of the jury was at variance with the unanimous opinion of medical experts.

The prisoner was a young man, a carpenter, and he had murdered four children on the high road and mutilated the bodies. When the alarm was raised he was found quietly walking along, his clothes and hands bespattered with blood, and he was accordingly arrested. In the prison his behaviour was that of a good-natured person, rather dreamy and quiet, but from time to time he became violent, showed signs of mental confusion and apparently took no notice of his surroundings. He did not seem to realise that he had committed several murders and his memory was a blank as far as the period corresponding to the perpetration of the crime was concerned. At the first trial, which took place about two years ago, the evidence of the medical experts was to the effect that the man's father was an inebriate, that he himself was obviously an epileptic, and that he had committed the crime in a state of epileptic trance. This latter opinion was remarkably confirmed by the prisoner's behaviour after the crime, as he made no attempt to conceal the traces of the murder by washing his hands and clothes. His counsel put in a plea of not guilty because of mental aberration, but the Public Prosecutor insisted that he was responsible for his actions and that the murder was a manifestation of sadism. The jury accepted this view and the man was sentenced to death. On the morning when the execution was to take place he had a typical severe epileptic fit which was followed by complete unconsciousness of long duration. The execution was accordingly postponed and by order of the court the man was placed in a lunatic asylum in order that he might be under observation. A fortnight ago he was brought before another jury; all the medical experts, those who had seen him both in the asylum and in the prison and also the so-called "scientific deputation," which is the highest medical authority in judicial matters, declared once more that the man was an epileptic and that the murder was an unconscious act for which he could not be held criminally responsible. Nevertheless he was again sentenced to death and if the Crown does not exercise its prerogative of mercy he will forfeit his life on the scaffold. The newspapers and medical journals especially blame the second jury for not accepting the well-founded opinions of the medical experts. They call the verdict a legal murder and ask for such an amendment of the law that obviously insane criminals may not be made responsible for their acts. The Tessnow case is not the only one of that kind. When a prisoner is charged with a heinous offence juries are seldom inclined to acquit him, even when mental derangement is proved by the medical evidence. They fear that he may escape from the asylum and that when at liberty he may again commit similar crimes. Moreover, they believe themselves to be as well able to form an estimate of a prisoner's mental state as a medical man is. The excitement caused by the Tessnow case will probably act as a warning to other juries against an obstinate disregard of medical opinions.

A Proposed University at Frankfurt.

It is reported that in Frankfurt there is a well-supported movement which aims at establishing a university in that great and wealthy city. Rich citizens are said to have collected funds for the purpose, but since the creation of universities belongs exclusively to the State and not, as in America, to private initiative the funds will be given to the Government if it approves of the objects of the contributors. It is to be hoped that the project will be carried out, especially in the interests of medical study. Frankfurt has for a long time possessed the nucleus of a medical faculty; the old Senckenberg Institute, founded by a wealthy citizen, contains a number of well-furnished chemical, physical, anatomical, and other laboratories; the Royal Institution for Experimental Therapy under the direction of the celebrated *savant* Professor Ehrlich attracts every year a great many graduates from other parts of Germany and from abroad; the hospitals of Frankfurt are of the first rank and contain an immense amount of clinical material which has not hitherto been used for teaching purposes. The establishment of a university will therefore be easy, so far as the medical faculty is concerned. It is remarkable that the great commercial cities are inclined to extend their educational institutions by the creation of universities, for a similar tendency exists in Hamburg. These tendencies should be supported by the medical profession, as it is in their interest when the scientific institutions and the hospitals of the great cities are made accessible to students. This is all the more the case,

as the clinics of the universities in the small towns often suffer from the want of patients who now find their way in increasing numbers to the great cities for the purpose of obtaining the advice of the celebrated specialists there. No new universities have been founded in Germany for about a century except at Strasburg where the old university existing previously to the French occupation was re-established in 1872.

Death of Dr. Möbius.

Dr. Möbius, who died recently in Leipzig at the age of 53 years, was a well known specialist for nervous disease and one of the most energetic opponents of the so-called emancipation of women. In his sensational work entitled "The Physiological Dementia of Women" he endeavoured to prove that the mental capacity of normal women was decidedly inferior to that of men. A great sensation was also caused by his critical analyses—from the psychiatric point of view—of the characters of celebrated poets and philosophers, such as Rousseau, Nietzsche, Schopenhauer, and others. He had further published a great number of memoirs on hysteria, electro-therapy, and other subjects, and had promoted a movement for the establishment of sanatoriums for nervous patients of the poorer classes.

Jan. 14th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Alleged Leprosy at Bendigo.

A OHINAMAN at Bendigo was alleged by his countrymen to be suffering from leprosy. A careful investigation was made by the local health officer and by Dr. Robertson, medical inspector of the Board of Public Health. The latter reported that the condition, although suspicious, was not leprosy and bacteriological examination had failed to discover any bacilli.

Medical and Dental Practitioners' Bills.

The Bill to amend the Medical Practitioners Act of Victoria passed the Legislative Assembly on Dec. 5th, 1906, with some minor amendments—that the power of the Board to refuse registration to any person convicted of an offence which under the law of Victoria would be a misdemeanour should be subject to approval by the Governor in Council and that medical officers in the army and navy and those who had filled such positions should be registrable. The main provisions of the Bill have been previously outlined; the chief one is the requirement of a five years' course of medical study.—The Bill introduced into the Legislative Assembly of New South Wales by Dr. R. Arthur to provide for reciprocity has made no progress, owing to the opposition of Labour Members. Dr. Arthur said that he was prepared to make some concessions and take the question out of the hands of the Medical Board and place it in those of the Governor in Council. He was willing also to exempt men of high scientific attainments. Dr. Arthur was equally unfortunate with another Bill for amending the Dentists' Act, of which he moved the second reading on Nov. 20th, 1906. In doing so he said that the main objects of the Bill were to fix a standard of examination, especially in preliminary education to give the Dental Board certain powers which the Act was supposed to confer, but did not, in the direction of removing from the Register persons who had made false statements to their qualifications; and to prevent registered men employing unregistered individuals in branch establishments. The Bill was opposed and no progress had been made when time for private Members' business expired.

Hospital Affairs.

The annual meeting of the friends and supporters of St. Vincent's Hospital, Melbourne, was held on Dec. 31, 1906. His Excellency the Governor of Victoria presided and the town-hall was packed with a most enthusiastic audience. The report of the Government Inspector of Charities stated that the building was the most up-to-date hospital in the State and an object-lesson in hospital construction. The cost per bed was £54 8s. 9d., compared with the mean cost of general hospitals of £57 17s. 3d. The proportion of cost of administration to expenditure on maintenance was 2 per cent. During the year 365 male and 463 female in-patients had been treated. The number

of operations performed was 1279, with a death percentage of 2.11. The Premier, in seconding the report, said that he proposed to set aside £20,000 for the next five years towards extending or improving the accommodation of hospitals, on condition that the public contributed £s. for every £s. given by the Government.—On Nov. 23rd, 1906, a conference was held at the town-hall, Melbourne, between representatives of various hospitals in Victoria and of the Royal Victorian Trained Nurses' Association. The first question discussed was the training of nurses in infectious diseases. It was decided that the council of the Royal Victorian Trained Nurses' Association should determine the practical requirements and hold an examination, but that no extension of the present curriculum should be made, in the case of any hospital which was recognised as able to provide the necessary experience. The next matter considered was how to secure efficiency of training in small hospitals. The Royal Victorian Trained Nurses' Association has undertaken with the Australian Trained Nurses' Association not to recognise training in hospitals with less than 10 daily occupied beds, beginning from January, 1907. The Royal Victorian Trained Nurses' Association also proposed that in the case of hospitals with between 10 and 40 beds the larger hospitals should take a proportion of their probationers for the last year of their curriculum. The representatives of the small country hospitals objected to these proposals. They could not afford to pay fully trained qualified nurses. It was suggested that probationers in such hospitals should be allowed if after three years' course there they spent six months at the Women's Hospital, Melbourne, and three months at the Infectious Diseases Hospital before getting a certificate. The conference decided to leave the matter to the hospitals concerned, the council of the Royal Victorian Trained Nurses' Association agreeing to accept such a solution of the difficulty if arrangements could be made. The question of modifying the training in hospitals of from 10 to 40 beds was also left to the hospitals concerned to evolve a scheme by which the larger could assist the smaller ones.—A Bill to provide for the regulation and inspection of private hospitals was introduced into the Legislative Council of New South Wales on Nov. 22nd, 1906, by Dr. Mackellar. He stated that there were in the metropolitan district 107 and in the country 343 establishments which would come within the scope of the Bill. While some were excellent, many were entirely unfit for the purpose. The Bill provided that private hospitals must be licensed by the Minister, on the recommendation of the Board of Health. A special clause dealt with lying-in homes. Sir Arthur Kenrick, M.D., said that a Bill of this description ought to have been introduced by the Government years ago. The Bill was referred to a Select Committee for report.

Friendly Societies.

The annual report of the Registrar of Friendly Societies for New South Wales for 1905, shows that there were 101,463 members of all the societies, and there were 18,248 persons sick for an aggregate term of 104,269 weeks, with a total cost in sick pay of £23,375. An amount of £87,465 was paid for medical attendance and medicine or an average cost of 17s. 6d. per head of mean membership.—A meeting of representatives of the friendly societies in the eastern suburbs of Sydney was held on Nov. 23rd, 1906, to discuss a draft agreement for lodge surgeons drawn up by the New South Wales branch of the British Medical Association. The following motion was carried unanimously:—

That the representatives of the various friendly societies in the eastern suburbs, agree to advise our respective societies that no agreement be entered into with medical officers which contain the following provisions:—(1) To charge a candidate or the lodge for such candidate's examination; (2) making a member receiving £200 per annum ineligible for medical benefits; (3) medicines, &c., to be supplied by medical officers (in lieu of by the chemists as at present).

In the course of the discussion it was seriously proposed that medical institutes should be formed and medical men appointed to them from outside the State.

Inspection of School Children.

The Tasmanian Government has approved of the scheme submitted by the Director of Education for a complete medical examination of all State schools. Local medical men will be appointed at Hobart and Launceston to inspect the scholars and advise teachers, and a woman medical practitioner will be engaged as a permanent member of the education staff to visit all schools where local professional services are not available.—At a recent meeting of the New

South Wales Dental Association a paper was read on the result of inspections by dentists of the teeth of school children. 3156 children and 73,708 teeth were examined. Over 16 per cent. of the permanent and 24.47 per cent. of the temporary teeth were carious. 94 per cent. of the children had decayed teeth. The half-bred Chinese children showed by far the best dentures.

Pure Milk Supply.

The members of the Melbourne Medical Association recently visited the country establishments of a company supplying pure milk and were very pleased with the methods adopted. The cows are all inspected by veterinary surgeons and pronounced free from disease. The milking sheds were properly constructed and the milkers were clean, with washed hands. The milk is cooled to 62°F. at the milking sheds and then cooled to 34° at the railway depot and put into special cooled trucks which keep it at 40° all the way to the town depot where it is pasteurised and put into sterilised bottles in which it is delivered. The company claims to have overcome most of the difficulties, especially great in the heat of summer, incidental to a pure milk supply.

Patent Medicines.

It has been stated in the press here that a meeting in London of the leading makers of proprietary and patent medicines passed a resolution declaring that the publication of trade secrets as provided in the Commonwealth Commerce Act would render trade with Australia impossible. Section 16 of the Commerce Act provides that trade secrets need not be disclosed unless in the opinion of the Governor in Council the disclosure is necessary for the protection of health. In an official handbook on the working of the Act issued last May the following explanatory footnote is attached to the section:—

The object of this section is to prevent the proprietors of trade secrets from losing the benefit of such by their being divulged in the trade description. Where, however, the article, such as a patent medicine, contains anything of a kind which may be injurious if taken without due precaution, such as opium, for example, the regulation may require the fact to be stated on the trade description.

Mineral Springs.

A number of medical men recently visited some mineral springs at Frankton, Victoria, which have been acquired by a company which proposes to erect a sanatorium and medicinal baths. One spring contains iron, brine, and potash and another is a sulphur spring.

Obituary.

Mr. J. A. Sutherland, of Moonee Ponds, a suburb of Melbourne, died on Nov. 18th, 1906, after a brief illness from influenza pneumonia. He had practised in the district for 18 years and was an exceedingly popular as well as a very capable and up-to-date practitioner. He was born in Wick, Scotland, and qualified at the Royal Colleges of Physicians and Surgeons, Edinburgh. He practised in Australia for 36 years. He has one son in the profession who was on his way back to Australia after a visit to England.

Dec. 10th, 1906.

Obituary.

ROBERT TRAVERS LEWIS, B.A., M.B., B.CH. DUB.

THE death of Dr. Robert Travers Lewis from acute pneumonia following upon a chill caught while watching a football match between the University of Cambridge and the West of Scotland occurred on Dec. 2nd, 1906. The fourth son of the late Mr. J. M. Aylward Lewis, J.P., of Ballinacary, county Galway, Dr. Lewis was born in 1859. He was educated at the Runda and at Trinity College, Dublin, where he graduated M.B. in 1885 receiving the degree of B.Ch. in the following year. After practising for a few years in Ireland he went to Willingham, Cambridge-shire, where he soon actively interested himself in the life of that place and rapidly won the esteem of its inhabitants. He held the office of medical officer and public vaccinator of the Willingham district of the Chesterton union and was the only medical man in the immediate vicinity of the village. Till within the last three years he was a member of the parish council and served on the technical education committee. For several years he was president of the public hall, a director of the building society, and was medical officer to the Star Benefit Friendly

Society, the Junior Working Men's Club, and the Hearts of Oak Benefit Society. He also took an active interest in the temperance question, being president of the Undenominational Temperance Society. He was not only an enthusiast in local sports himself but succeeded in engendering his enthusiasm among the people of the village, where hockey, cricket, and lawn tennis received a large share of attention. The deceased has left a widow and family.

Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the first professional examination of the Conjoint Examining Board just completed the following gentlemen were approved in the subjects indicated:—

Chemistry and Physics.—Percy Lytton Tempest Bennett, London Hospital; Harold James Dorsetford-Hoelias, Technical School, Plymouth; Henry George Barham Blackman, Guy's Hospital; William Houston Boyd, Queen's College, Belfast; Stacey Archer Burn, St. Bartholomew's Hospital; Carol Adolph Kaufman, Birkbeck College; Reginald Charles Clifford, Polytechnic Institute; Eric Clarence Oline, Guy's Hospital; Herbert Edward Cockcroft, Manchester; Charles Frederick Constant, Guy's Hospital; Leonard Marshall Crockett, Charing Cross Hospital; André Constant Labauve, d'Arlet, Guy's Hospital; Henry Harvard Davis, Guy's Hospital; William Everard Sherard Digby, Guy's Hospital; Paul Dvorkowitz, St. Bartholomew's Hospital; George James Frank Elphick, St. Mary's Hospital; Montague Albert Farr, Charing Cross Hospital; Claude Emory Freeman, Sheffield University; Andrew Alexander Fyffe, Sheffield University; David Harvard, University College, Cardiff; Arthur Stanley Heale, New Zealand University and London Hospital; Cecil Norman Hutt, St. Bartholomew's Hospital; William Sadler Hyde, Guy's Hospital; Griffith Lewis Jones, University College, Cardiff; Donald Aldridge Macpherson, Charing Cross Hospital; Dalton Mallam, London Hospital; Avenol Frederick Cleave Martyn, St. Mary's Hospital; Owen David Baker Maxson, London Hospital; Henry Locke Paddon, B.A. Oxon.; St. Thomas's Hospital; John Lansdowne Percival, Guy's Hospital; Alfred Spearman Fern, St. Thomas's Hospital; Richard Goodenough Rice, London Hospital; George FitzPatrick Riden, King's College; Harold Robinson, Victoria University, Manchester; Lawrence Lancaster Satow, St. Bartholomew's Hospital; Thomas Stoney Sharpley, Guy's Hospital; Henry Lionel Hughes Steele, St. Thomas's Hospital; Frederick Tooth, Sydney University; Harry Alfred Turner, Science and Art Institute, Walsall; Frank Wells, St. Mary's Hospital; Arthur Tudor Williams, London Hospital.

Biology.—Charles Vernon Anderson, St. Thomas's Hospital; John Claude Beckett, St. Mary's Hospital; Norman Stuart Carruthers, Guy's Hospital; Cyril James Weston Clayton, St. Mary's Hospital; Charles Frederick Constant, Guy's Hospital; Hugh Grogan Crawford, Guy's Hospital; Henry Harvard Davis, Guy's Hospital; Hubert Daw, Guy's Hospital; John Dotto, St. Bartholomew's Hospital; Christopher Robson Dudgeon, Westminster Hospital; Daniel Charles Evans, University College, Cardiff; John Kenneth Garner, Liverpool University; William George Healey, South-Western Polytechnic; Hugh Granville Hockridge, St. Bartholomew's Hospital; Gordon Alexander Hodgson, Leeds University; Darrell Robert Norman O'Neale Humphrey-Dav, St. Mary's Hospital; Allan Wellesley Lewis, St. Mary's Hospital; Mark Lindsey, St. Bartholomew's Hospital; Eadbert Ralph Longstaff, St. Bartholomew's Hospital; Edward Mills Marshall, King's College; John Lansdowne Percival, Guy's Hospital; John Arnoux Prendergast, Leeds University; Christopher Hugh Leete Rixon, St. Thomas's Hospital; Thomas Stoney Sharpley, Guy's Hospital; George Holmes Smith, L.D.S., Birkbeck College; Frederick Tooth, Sydney University; Charles Rustace Williams, Birkbeck College; and Owen Elias Williams, Guy's Hospital.

The following gentlemen passed the second professional examination held on Jan. 3rd, 4th, 7th, and 8th:—

Anatomy and Physiology.—Guy Oldham Chambers, St. Bartholomew's Hospital; John Joseph Clarke, London Hospital; William Thomas Clarke, Guy's Hospital; Henry Gray Woodhouse Dawson, Sheffield University; Hensell How and Dunmore, London Hospital; Frederick Dunphy, Westminster Hospital; Edwin Charles East, Birmingham University; Alfred James Graves, Columbia University, New York; and Charing Cross Hospital; Geoffrey Richard Heard, London Hospital; Gilbert Percy Humphry, King's College and St. George's Hospital; Roger Percival Jones, University College, Cardiff; and University College Hospital; Fritz Kalkenberg, Glasgow University and Guy's Hospital; James Arthur Richard Lee, Sheffield University; Charles Eric Lowe, Westminster Hospital; Alexander Ernest McKenzie, Victoria University, Manchester; John Charles Mackwood, London Hospital; John Mitchell McHaffey, New Zealand and London Hospital; Douglas Ashley Mitchell, Guy's Hospital; Leonard William Mortimer, London Hospital; Humphrey Nemo, London Hospital; Richard Alfred Parsons, St. Mary's Hospital; Richard Blidolph Phillips, University College Hospital; Edward Holmes Ratnor, London Hospital; Harold Thaxter, Birmingham University; Francis Christopher Tibbs, London Hospital; George Ernest Villandro, London Hospital; John Glegg Watson, London Hospital; Charles Fitzgerald de Wiles, St. Bartholomew's Hospital; Sydney Williams, University College, Cardiff; Charles Stewart Wink, St. Thomas's Hospital; Duncan Wood, London Hospital; and Charles Reynolds Woodruff, St. Bartholomew's Hospital.

At the quarterly examination in Practical Pharmacy of the Conjoint Examining Board the following gentlemen were approved:—

Edward Morrison Adam, Charing Cross Hospital; Isaac Barnett Bernstein, Leeds University; Harry Barrett Corry, B.A. Cantab., London Hospital; Gustavus William Musgrave Cusance, St. Thomas's Hospital; Benjamin Dale, St. George's Hospital; Thomas Ronald Davey, St. Mary's Hospital and private; Archibald Davidson, Guy's Hospital; Evan Richard Evans, St. Bartholomew's Hospital; Alexander Savill Graham, Charing Cross Hospital; Thomas Arthur Jones, B.A. Cantab., Cambridge University and London Hospital; James Leonard Joyce, Cambridge University and St. Bartholomew's Hospital; Ernest Albert Saunders King's College Hospital; John Richard Cook Stephens, London Hospital and private; Gilbert Francis Syms, Guy's Hospital; and Gerald Douglas Hamilton Wallace, Charing Cross Hospital.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—In the Preliminary Science Examination for the Licence in Dental Surgery the following gentlemen were approved in the subjects of Chemistry and Physics:—

Herbert Ferris Barge, Charles Ernest Blows, Ernest Benjamin Brown, and Henry James Burch, Birkbeck College; Norman Sambell Card, Liverpool University; Neville Dutton Clarke, Queen's College, Belfast; and Guy's Hospital; Arthur Josiah Dabbs, Birmingham University; Norman Malcolm McArthur Douglas, Liverpool University; George Vivian Dymott, Birkbeck College; Ernest William Frank Falkner, Municipal School, Grimsby, and Liverpool University; Frank Leonard Furze, Birkbeck College; Henry Hall, Charing Cross Hospital; Harold Holburn, Sheffield University; Arthur Percy Livett Johnson, Birkbeck College; Charles Ernest McNabb, Technical Institute, Salford, and Municipal School, Manchester; Frederick Edward Marston, Wiggleson School, Leicester; Charles Harry Greville Penny, Polytechnic Institute, George Orchard Roper, Royal Albert Memorial College, Exeter, Alfred Edmund Victor Spill, University College, Cardiff, Carl Stacey, Polytechnic Institute; Joseph Magnus Watson, Rutherford College; and George Kerry Wild, Birmingham University.

SOCIETY OF APOTHECARIES OF LONDON.—At the primary examinations held recently the following candidates passed in the subjects indicated:—

PART I.

Biology.—I. M. Bernard, Royal Free Hospital; and H. Cox, Birmingham.

Chemistry.—R. G. Cassell, London Hospital.

Matéria Medica.—R. U. Carey, London Hospital; B. M. Malden, Royal Free Hospital; and V. P. Norman, London Hospital.

PART II.

Anatomy.—N. B. Benjafield, University College Hospital; M. Bennett, Royal Free Hospital; J. Bramley-Moore, University College Hospital; H. S. Brown, Birmingham; G. G. Rigby, Manchester; and W. H. Watson, Guy's Hospital.

Physiology.—N. B. Benjafield, University College Hospital; M. Bennett, Royal Free Hospital; J. Bramley-Moore, University College Hospital; H. S. Brown, Birmingham; C. S. Foster, Westminster Hospital; M. Graves and V. P. Norman, London Hospital; G. G. Rigby, Manchester; S. H. Scott, London Hospital; and W. H. Watson, Guy's Hospital.

UNIVERSITY OF CAMBRIDGE.—The following having passed the required examinations are entitled to the University Diploma in Tropical Medicine and Hygiene:—

S. L. Cummins, A. Fenton, S. A. Harris, A. E. Horn, H. B. G. Newham, W. G. B. Orme, J. D. Smith, and F. M. Suckling.

A University Lectureship in Hygiene, with an annual stipend of £100, was established by grace of the Senate on Jan. 17th. Dr. D. MacAlister has been appointed a member of the syndicate for the institution of a Diploma in Architecture.

BIRMINGHAM HOUSING COMMITTEE AND THE BORDLESLEY-GREEN SCHEME.—The housing committee does much good work and ably seconds the medical officer of the city. During the past five years it has rendered 1157 houses habitable, has closed 913 which were unfit for habitation, and has demolished 519. It has been sympathetic towards all schemes for land purchase and town planning, and in pursuance of the policy of municipal purchase it acquired some time ago a piece of land at Bordesley, the idea being that the land should be let on leases to be utilised for the erection of workmen's dwellings. There has been difficulty in disposing of the land on proper terms, and the committee now proposes to lease it to the Ideal Benefit Society which desires to erect upon it, and on an immediately adjacent piece of ground, dwellings suitable for its members who belong to the better class of artisans. According to the scheme of the housing committee the land is to be leased to the society for 109 years, the usual leasehold time being exceeded in order that the society may grant a full 99 years' lease to any of its members who may purchase at any time in the first ten years of the society's tenure, within which period the land must be fully developed. Under the scheme the city will begin to make a definite and not unreasonable profit at the end of 22 years.

Before the scheme can be carried out the approval of the Local Government Board will have to be obtained and serious opposition is threatened by the committee of the Birmingham Trades' Council, which holds that the land was not intended for the erection of the class of houses now proposed, but for houses adapted to the means of the lower classes of workmen who earn about £1 per week. The matter was argued somewhat hotly at a recent meeting of the trades' council and artisans who could afford houses of the character contemplated under the new scheme were stigmatised as aristocratic.

VITAL STATISTICS IN RUSSIA.—In a statement which has been just issued on public health in Russia in 1904 it is shown that in European Russia the mortality was 29.1 per 1000. Although in comparison with the death rates in other European countries this is very high, it is very low compared with the average for the preceding 15 years in Russia. The birth-rate for the year was 47.3 per 1000, so that the natural increase of the population was 18.2 per 1000, which is higher than for any of the preceding 15 years. The *Pharmaz Journal* points out that owing to the number of reserves called to the war the number of civilian medical men in practice at the end of the year under review was 16,144, as compared with 17,656 at the end of the preceding year. The total number of patients treated at the hospitals was 2,028,031, of whom 112,194 died (5.5 per cent.). 155,000 cases were treated at the maternity hospitals where the mortality was 0.5 per cent.

INFANTS' HOSPITAL, LONDON.—The Duchess of Albany has agreed to be the first patron of the new Hospital for Infants now in course of erection at Vincent-square, Westminster, S.W. This hospital was established in temporary premises in Hampstead early in 1903 and the great success achieved by the treatment of infants suffering from malnutrition has led a member of the committee to erect the new hospital entirely at his own expense, the work of maintenance being all that the public and friends of the hospital are asked to provide. The new building will contain 50 cots and accommodation for the nursing staff, and the committee earnestly pleads for help. The constitution, by laws, and regulations of the hospital provide that donors of 50 guineas shall be entitled to all the privileges of life governors, and annual subscribers of 1 guinea shall be governors of the hospital during the continuance of such subscription and as such shall be the authority which annually appoints the committee of management. Detailed information concerning the hospital will be gladly given by the secretary at the temporary office of the Infants' Hospital, 120, Victoria-street, London, S.W., or by the matron at the present hospital at Hampstead.

UNIVERSITY COLLEGE, LONDON.—The annual report of the council of University College has just been issued. The number of students in the college for the session 1905-06 was 1396, of whom 242 belonged to the Faculty of Medicine and 134 were post graduate and research students. There were 468 internal students of the University of London—that is, students taking full courses for degrees at the University of London. There were besides about 800 persons attending "public" and "special" courses. The fees received in all the faculties of the college amounted to £22,823, being an increase of upwards of £2500 on the previous session. The financial statements show that the income exceeded the expenditure by £126, that the Treasury grant amounted to £10,000, and that the general finances of the college are in a healthy condition. The report contains a summary of the research work done during the past session, the researches in the department of chemistry, including those of Sir William Ramsay in respect of neon and helium, being among the most interesting. The report also summarises the steps that have been taken for the union of the college and the University of London. On Jan. 1st of the present year the college ceased to be a school of the University and became incorporated with it, thus realising the aims of those who in 1826 founded it. It is the first college thus to be incorporated with the university, and it is understood that its example will be followed by King's College. Important additions have been made during the past year to the departments of physics and chemistry and a plan has been worked out for the re-arrangement of many of the college departments. This will be possible when the new buildings for the School of Advanced Medical Studies, now in course of erection by the generosity of Sir Donald

Carrie, and when the new buildings of University College School at Hampstead are completed. The new medical school buildings will be completed during the next few months.

WEST AFRICAN MEDICAL STAFF.—The following appointments have been made to the West African Medical Staff:—H. Catling, M.R.C.S. Eng., L.R.C.P. Lond., Southern Nigeria; F. H. Storey, M.B., Ch.B., Univ. Liverp., H. W. Gu-h, M.B., Ch.B. Chin., F. I. M. Jupp, I.S.A., and T. H. Dagon, M.R.C.S. Eng., L.R.C.P. Lond., Gold Coast; and A. B. S. Powell, L.R.C.P. & S. India, L.P.S. Glasc., A. H. Wilson, M.B., Ch.B. Camb., C. C. Robinson, M.B. Lond., L.R.C.P. Lond., M.R.C.S. Eng., and H. M. Newport, M.R.C.S. Eng., L.R.C.P. Lond., Southern Nigeria. W. R. Henderson, O.M.G., M.D. R.U.I., principal medical officer of the Gold Coast, retires on pension. G. F. Darker, M.R.C.S. Eng., L.R.C.P. Lond., medical officer in Southern Nigeria, and D. Cowin, M.B., B.Ch. Viet Univ., medical officer in the Gold Coast, resign. H. Kramer, M.B., B.Ch. Chin., medical officer in the Gold Coast, is invalided from the service. W. H. G. H. Best, L.R.O.S. & P. Ire., medical officer in Southern Nigeria, is promoted to be senior medical officer, vice G. J. Rutherford, M.R.C.S. Eng., L.R.C.P. Lond., transferred. I. H. Read, M.R.C.S. Eng., L.R.C.P. Lond., medical officer in Southern Nigeria, is promoted to be senior medical officer, vice F. G. Hopkins, M.D. Dub., promoted.

SOCIETY FOR THE RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of this society was held on Jan. 9th, Dr. G. F. Mansford, the President, being in the chair. Fifteen directors were present. The deaths of two members were reported and the resignation of one was accepted. Three new members were elected. The deaths of two widows were also reported; one, whose husband had paid a life subscription fee of £26 5s., had received in grants £1217, and the other £857, her husband having paid £21 in subscriptions. £536 had been distributed as a Christmas present amongst the annuitants of the charity. The sum of £1275 10s. was voted for the half-yearly grants to the 43 widows and 21 orphans at present in receipt of grants. During the past quarter six letters had been received from widows of medical men asking for relief, but this had to be refused as their husbands had not been members of the society. An application for relief was received from the widow of a member and a grant at the rate of £40 per annum was made. Membership of the society is open to any registered practitioner residing within a radius of 20 miles from Charing Cross. Full particulars may be obtained from the secretary at 11, Chandos-street, Cavendish-square, London, W.

OPENING OF THE NEW LIVERPOOL INFIRMARY FOR CHILDREN.—Her Royal Highness the Duchess of Albany formally opened the new Infirmary for Children on Jan. 10th. The Lord Mayor of Liverpool presided at the ceremony, which was largely attended and included the Earl of Derby, the Lord Bishop of Liverpool, Lady Isabel Gathorne Hardy, and the Lady Mayoress. The rebuilt infirmary was founded in 1851 by the late Dr. Alfred Stephens of 4, Upper Parliament-street, Liverpool, who was the senior physician to the infirmary for upwards of a quarter of a century. He conceived the idea as the result of a visit to the old children's dispensary in Dublin. The infirmary had its beginning in a small house in Upper Hill-street, the work being then confined to out-patients. In 1856 larger premises were obtained and provision was made for a few in-patients. In 1866 the late Duke of Edinburgh laid the foundation-stone of the building which unfortunately (on the advice of sanitary experts) had to be demolished owing to the frequent outbreaks of diphtheria and scarlet fever. The demolished infirmary provided accommodation for 80 in-patients; the new building will accommodate 100 in-patients, exclusive of six cots in the observation block. The old building also proved inadequate for the treatment of the out-patients and necessitated the building of an out-patient department separate from the main building, which was opened by the Countess of Derby in 1902, a description of which was given in THE LANCET. In 1903 the infirmary was pulled down owing to the frequent outbreaks of infectious diseases mentioned above. The total cost of the buildings, including the purchase of land, was £68,000. The infirmary has been built and equipped with all the most recent improvements and is a very imposing building.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta street, Covent Garden, London, W.C.

Aids to Medical Diagnosis. By Arthur Whitting, M.D., M.R.O.P., Physician to the Tottenham Hospital and Assistant Physician to the Mount Vernon Hospital for Consumption and Diseases of the Chest. Price, paper, 2s.; cloth, 2s. 6d.

CASSELL AND COMPANY, LIMITED, London, Paris, New York, and Melbourne.

Tumours, Innocent and Malignant: their Clinical Characters and Appropriate Treatment. By J. Bland-Sutton, F.R.C.S., Surgeon to, and Member of, the Cancer Investigation Committee of the Middlesex Hospital, &c. Fourth edition. Price 21s.

CHURCHILL, J. AND A., 7, Great Marlborough-street, London, W.

A Handbook of Physics and Chemistry. Adapted to the Requirements of the First Examination of the Conjoint Examining Board of the Royal Colleges of Physicians and Surgeons and also for General Use. By Herbert E. Corbin, B.Sc. Lond., M.R.C.S., L.R.C.P., D.P.H., Medical Superintendent, London Fever Hospital, and Archibald M. Stewart, B.Sc. Lond., B.A., T.O.D., Headmaster of Alresford Grammar School. Third edition. Price 6s. 6d. net.

F. A. DAVIS COMPANY, 1914-16, Cherry-street, Philadelphia, Pa., U.S.A.

A Practical Treatise on Materia Medica and Therapeutics. With Especial Reference to the Clinical Application of Drugs. By John V. Shoemaker, M.D., LL.D., Professor of Materia Medica, Pharmacology, Therapeutics, and Clinical Medicine, and Clinical Professor of Diseases of the Skin in the Medico-Chirurgical College of Philadelphia. Sixth edition, thoroughly revised. Price 85 net.

GRiffin, CHARLES, AND COMPANY, LIMITED, Exeter-street, Strand, London, W.C.

Poisons: their Effects and Detection. By Alexander Wynter Blyth, M.R.C.S., F.I.C., F.O.S., &c., Barrister-at-Law; Public Analyst for the County of Devon; Medical Officer of Health and Public Analyst for the Borough of St. Marylebone; and Meredith Wynter Blyth, B.A. Cantab., B.Sc. Lond., F.I.C., F.O.S., &c., Public Analyst for the Borough of Brighton, and also for the Borough of Eastbourne. Fourth edition, thoroughly revised, on argued, and rewritten. Price 21s. net.

Practical Sanitation: A Handbook for Sanitary Inspectors and others interested in Sanitation. By George Reid, M.D., D.P.H., Fellow and Examiner of the Sanitary Institute. Medical Officer of Health Staffordshire County Council. With an Appendix on Sanitary Law by Herbert Manley, M.A. Cantab., M.B., D.P.H., Fellow of Sanitary Institute, Barrister-at-Law, Medical Officer of Health, County Borough of West Bromwich. Thirteenth edition, thoroughly revised. Price 6s.

J. D. LIPPINCOTT COMPANY, Philadelphia and London.

International Clinica. Edited by A. O. J. Kelly, A.M., M.D., Philadelphia, U.S.A. Volume II. and Volume III. Sixteenth Series, 1906. Price not stated.

Post-mortem Pathology. A Manual of the Technique of Post-mortem Examinations and the Interpretations to be drawn therefrom. By Henry W. Cattell, A.M., M.D., President of the Philadelphia Medical Jurisprudence Society, 1905-06. Third edition. Price 18s. net.

MACMILLAN AND CO., LIMITED, London.

A Health Reader. By C. E. Shelly, M.A., M.D., M.R.O.P., Consulting Medical Officer, Hatleybury College, and E. Stenhouse, B.Sc., Associate of the Royal College of Science. Book I. Price 1s.

Anesthetics and their Administration. A Text-book for Medical and Dental Practitioners and Students. By Frederick W. Hewitt, M.V.O., M.A., M.D. Cantab., Anaesthetist to His Majesty the King, Physician-Anaesthetist to St. George's Hospital, Consulting Anaesthetist and Emeritus Lecturer on Anaesthetics at the London Hospital. Third edition. Price 15s. net.

MILLER, T. MASKWY, Cape Town, Pretoria, and Bulawayo.

The Treatment of Uterine Retro-deviations. By G. A. Casalis, M.B., Ch.M. Ed., Gynaecological Surgeon to the Victoria Cottage Hospital, Wynberg. Price not stated.

OFFICE OF THE SUPERINTENDENT OF GOVERNMENT PRINTING, INDIA, Calcutta.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. No. 25. On the Importance of Larval Characters in the Classification of Mosquitoes. By Captain S. R. Christophers, M.B., I.M.S. Price 8 annas, or 3d. No. 26. Leucocytosis in Cattle. By Captain S. R. Christophers, M.B., I.M.S. Price 12 annas, or 1s. 2d.

PENTLAND, YOUNG J., Edinburgh and London.

The Edinburgh Medical Journal. Edited by Alexis Thomson, M.D., F.R.C.S. Ed., and Harvey Littlejohn, M.B., F.R.C.S. Ed. New series. Vol. XX. Price not stated.

THE YFAR BOOK PUBLISHERS, 40, Dearborn-street, Chicago. (G. GILLIES AND CO., 23, Gibson-street, Hillhead, Glasgow.)

The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the general editorial charge of Gustavus P. Head, M.D., Chicago. Volume VIII. **Materia Medica and Therapeutics, Preventive Medicine, Ulmatology, and Forensic Medicine.** Edited by George F. Butler, Ph.G., M.D., Henry B. Favill, A.B., M.D., Norman Bridge, A.M., M.D., Daniel H. Brower, A.M., M.D., LL.D., and Harold M. Moyer, M.D. Series 1906. Price 6s. Volume IX. **Anatomy, Physiology, Pathology, and Dictionary.** Edited by W. A. Evans, M.S., M.D., Adolph G. Harnand, M.D., William Healy, A.B., M.D. Series 1906. Price 6s.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Editor, not later than 9 o'clock on the Thursday morning of each week, such information for protention publication.

ARGYLE, S. S., M.B., Ch.M. Melb., M.R.C.S., has been appointed Honorary X Ray Specialist to the Sanatorium, Mount Major (Macedon), Victoria, Australia.

DROSBLEY, LEONARD, M.D. Edin., has been appointed Medical Superintendent of the Sanatorium at the Benenden Branch of the National Association for the Establishment and Maintenance of Sanatoria for Workers suffering from Tuberculosis.

DAVIS, WILLIAM HERBERT, L.R.C.P. Lond., M.R.O.S., has been appointed Honorary Assistant Ophthalmic Surgeon to the Royal Albert Hospital, Devonport.

DEANE, JOHN EDWARD JAMES, L.K.Q.C.P. Irel., has been appointed Public Vaccinator for the Northern District of Victoria, Australia.

DRAPE, THOMAS LAMBERT, M.B., B.C. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer and Workhouse Medical Officer by the Chesham (Horn) Board of Guardians.

FLETCHER, R. B., M.D., Ch.B. Vict., has been appointed District Obstetric Officer to the St. Mary's Hospitals, Manchester.

FOX, ROBERT ALGERNON, M.B., B.S. Edin., has been appointed Medical Superintendent of the Hookwood Asylum, Sydney, New South Wales.

HAY, JOHN, M.D. Vict., M.R.C.P. Lond., has been appointed Assistant Physician to the Royal Infirmary, Liverpool.

HYATT, ANNIE WAINWRIGHT, M.B., B.S. Lond., has been appointed Deputy Medical Officer of Health to the Shepton Mallet Urban District Council.

MARWICK, R. ELICK, M.B., Ch.B. Edin., has been appointed Senior House Surgeon to the Dumfries and Galloway Royal Infirmary.

MCGAUGHY, J. G., M.D., M.R.C.P. Edin., has been appointed Honorary Physician to Ancoats Hospital, Manchester.

NUNNELLY, F. P., M.B., B.S. Oxon., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ebbw District of the county of Hertford.

PHILLIPS, MILES H., M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Honorary Assistant Medical Officer to the Jessop Hospital for Women, Sheffield.

SPRUIS, HENRY, M.B., Ch.B. Edin., has been appointed Honorary Surgeon at the Chelsea Hospital for Women.

VIOLETTE, W. B., M.B., Ch.M. Glasg., has been appointed Visiting Medical Officer to the Newington Asylum, New South Wales.

WESTERMAN, ARTHUR M.D., Ch.B. Aberd., has been appointed Clinical Assistant to the Throat and Ear Department at the Brompton Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANGOR, CARMARTHENSHIRE AND ANGLESEY INFIRMARY.—House Surgeon. Salary £30 per annum, with board, washing, and lodging.

BATH ROYAL UNITED HOSPITAL.—Resident Medical Officer. Salary £100 per annum with board, lodging, and washing.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Assistant Physician.

BIRMINGHAM, QUEEN'S HOSPITAL.—House Physician. Salary at rate of £50 per annum, with board, lodging, and washing.

BRIGHTON AND HOVE LIVING INSTITUTION AND HOSPITAL FOR WOMEN.—House Surgeon, unmarried. Salary £30 per annum, with apartments, board, and attendance.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—House Surgeon. Salary £160, with rooms and attendance.

BRISTOL DISPENSARY.—Medical Officer.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Assistant House Surgeon. Salary £50 per annum, with board, rooms, and attendance.

BRISTOL ROYAL INFIRMARY.—Resident Junior House Surgeon. Also Resident Casualty Officer. Both for six months. Salaries at rate of £50 per annum, with board, lodging, and washing. Also Resident Obstetric Officer. Salary £75 per annum, with board, lodging, and washing.

CARMARTHEN, CARDIGAN, AND PEMBROKE JOINT COUNTIES LUNATIC ASYLUM, Carmarthen.—Junior Assistant Medical Officer. Salary £150, with rooms, board, washing, and attendance.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road.—Registrar for In patients. Honorarium 20 guineas per annum.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Registrar. Honorarium £40 per annum.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Resident Medical Officer. Salary £100 per annum, with board residence, and laundry.

FARRINGTON GENERAL DISPENSARY, Bartlett's Buildings, Holborn, E.C.—Honorary Physician.

GLOUCESTER GENERAL INFIRMARY AND GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £30 per annum, with board, residence, and washing.

GREAT INDIAN PENINSULA RAILWAY COMPANY.—District Surgeon. Salary Rs. 450 per mensem, rising Rs. 500 per mensem.

GUY'S HOSPITAL.—Assistant to the Lecturer in Bacteriology. Honorarium £50 per annum.

HAMPSTEAD GENERAL HOSPITAL.—Resident Medical Officer for eight months. Salary at rate of £20 per annum, with board and residence.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon for six months. Honorarium £20, with residence, board, and washing.

- HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium of £25.
- HOSPITAL FOR SICK CHILDREN, Great Ormond Street, London, W.C.—House Physician, also Assistant Casualty Medical Officer, both unmarried. Salary in each case 25 guineas for eight months, with board and residence.
- HIDDERSFIELD, COUNTY BOROUGH OF.—Two Livery Assistant Medical Officers of Health. Salary 100 guineas per annum.
- HULL HOTAL INFIRMARY.—Casualty House Surgeon. Salary £50, with board and lodging.
- LEIPSIG HOSPITAL FOR WOMEN AND CHILDREN.—Resident Clinical Assistant.
- LONDON LOCK HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging and washing.
- MEDICAL, YEAR LIVER WEST RIDING ASYLUM.—Second Assistant Medical Officer. Salary £200, rising to £220, with board and apartments. Also Fourth Assistant Medical Officer. Salary £150, rising to £163 with board and apartments.
- METROPOLITAN LAB. NOX, AND TENDON HOSPITAL, Grafton Street, Fitzroy Square, W.—Two Clinical Assistants.
- NEW HOSPITAL FOR WOMEN, Euston Road.—Physician to the Out-patient Department; also Senior Assistants and Two Clinical Assistants (all females) for one year.
- NEWPORT BOROUGH ASYLUM, Caerleon (Mon.).—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and attendance.
- NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Honorarium £20 with board, lodging, and washing.
- NORTH-WEST LONDON HOSPITAL, Kentish Town Road.—Physician for Diseases of Women. Also Dental Surgeon.
- OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £40 per annum, with board, &c.
- POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board and residence.
- PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Assistant House Surgeon for six months, renewable. Salary £50, with board, residence, and washing.
- REITH UNION, Yorkshire.—Medical Officer.
- ROXBIDGE INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and laundry.
- ROYAL PHILIPIC DISPENSARY, 104, Buckingham Palace Road, S.W.—Visiting Medical Officer.
- ROYAL SOUTH LONDON DISPENSARY.—Surgeon-in-Ordinary.
- ST. MART'S HOSPITAL, Paddington, W.—Casualty Physician. Salary £75 per annum.
- ST. MART'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Honorary Gynaecologist.
- ST. PANCRA'S AND NORTHERN DISPENSARY, 126, Euston Road.—Honorary Physician.
- SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.—Clinical Assistants.
- SHEFFIELD EAST-END BRANCH OF THE CHILDREN'S HOSPITAL.—House Surgeon. Salary £70 per annum, with board, lodging, and washing.
- SHEFFIELD, JESSOP HOSPITAL FOR WOMEN.—House Surgeon, unmarried. Salary £60 per annum, with board and residence.
- SHEFFIELD, UNIVERSITY OF SHEFFIELD.—Chair of Pathology.
- STAFFORD STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon for six months. Honorarium £31, with board, residence, and laundry.
- STOKES-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL.—Junior House Surgeon. Salary £50 per annum, with board, apartments, and washing.
- TEMBIDGE WILLS GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, together with board, apartments, and attendance.
- VENTNOR, HOTAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Two Assistant Resident Medical Officers, unmarried. Salary £50, with board and lodging.
- WAXFIELD, WEST RIDING ASYLUM.—Clinical Assistant or Junior Assistant Medical Officer.
- WEST BATHFORD, CAMBER HOSPITAL.—House Surgeon. Salary £100 per annum, with board, rooms, and washing.
- WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £70 per annum, with rooms, board, and washing.
- THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Sturminster Newton, in the county of Dorset.

Births, Marriages, and Deaths.

BIRTHS.

- DEANEY.—On Jan. 6th, at Waterloo Road, Wolverhampton, the wife of Edward Deane, M.D., F.R.C.S., of a daughter.
- GILFORD.—On Jan. 2nd, at Oxford Road, Reading, the wife of Sidney Gilford, M.B., Ch.B., of a daughter.
- HEPBURN.—On Jan. 11th, at Pevensey, Enfield, the wife of Malcolm L. Hepburn, M.D., F.R.C.S., of a daughter.

MARRIAGE.

- ANDREWS—FRANCIS.—On Jan. 5th, at St. Mary Abbots, Kensington, Cecil Edward Andrews, M.R.C.S., L.R.C.P., to Zenobia, youngest daughter of the late Major T. J. Francis, 9th and 16th Lancers.

DEATH.

- TAYLER.—On Jan. 6th, at Harford, Kingsdown, Dover, William Henry Tayler, M.D., aged 75 years.

F.B.—A fee of 1s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A FRIEND'S ADVICE.

At a recent inquest held at Scarborough evidence was given that the deceased suffered from quinsy and consulted a friend who was ill-advised enough to recommend him a course which, strange to say, he adopted. The prescription consisted in taking half an ounce of collyer's elixir of potassium borogluconate dissolved in water in the morning and a similar dose at night. Whether these measures were to be continued indefinitely was not stated, for on the day following the consumption of the quantity mentioned, equal to 450 grains of chloride of potassium the patient died. It might be interesting to know by what process the friend who gave the advice arrived at his singular "remedy" and who first suggested that borogluconate which are of more or less popular consumption should be infused in such a manner. It is to be hoped that anyone who has heard of this new domestic "cure for quinsy" and is waiting for an opportunity to try it will read of the inquest mentioned and be warned in time.

NOVOCAINE.

To the Editors of THE LANCET.

SIR,—I should be much obliged if any of your readers would inform me as to the following points in cases of dental extractions: 1. Is novocaine at all superior to eucaine? 2. What amounts of each respectively is it safe to inject in cases requiring many teeth removed? 3. The technique of injecting these fluids so as to insure the greatest amount of anaesthesia possible. I mean as regards insertion of needle, &c. I enclose my card, and remain, Sir, yours faithfully,
Jan. 14th, 1907.
DISTAL.

THE MISLEADING ADVERTISEMENT.

In the issue of Jan. 12th of our contemporary John Bull we find on p. 45 in the "Answers to Correspondents" the following excellent advice: "Avoid the Magic Foot Draught Company and all other quacks." On p. 41, however, we see a flaming advertisement of the British Electric Institute which sells the Ajax Dry Cell batteries. This advertisement, as is usual with electrical quacks, quotes opinions by medical men upon the uses of electricity and, moreover, gives a quotation from the writing of the late Dr. W. E. Stevenson (he has been dead some 15 years) in our columns. From the advertisement it might be inferred that Dr. Stevenson advocates the Ajax Dry Cell in our columns and that we ourselves approve of it too. What we really think about the Ajax Dry Cell may be seen in our issue of June 9th, 1906, p. 1653. But anyway, we think that the editor of John Bull should make his counsel as to avoidance of quacks fit his practice by excluding their advertisements.

THE TREATMENT OF "NEURALGIA."

To the Editors of THE LANCET.

SIR,—Replying to "G."s Inquiry in your issue of Jan. 6th, I would suggest a careful search for "pressure" on the posterior spinal roots of the brachial plexus. The "not very marked tenderness" there is suggestive, and I have seen a case with similar symptoms at once cured by the removal of a small sebaceous cyst. If nothing can be found I would suggest the application of that most excellent weapon, Corrigan's button. I am, Sir, yours faithfully,
Southport, Jan. 14th, 1907.
COLIN CAMPBELL.

DIET IN TYPHOID FEVER.

To the Editors of THE LANCET.

SIR,—Can any of your readers kindly inform me where I can find statistics showing the relative value of the old liquid and the new (more) solid dietaries in typhoid fever?

Jan. 11th, 1907.

I am, Sir, yours faithfully,

GARGANTUA.

MANCHESTER CREMATORIUM.

The annual meeting of the shareholders of the Manchester Crematorium held on Dec. 23rd, 1906, was the seventeenth of the series. The report of the directors seems to show an undercurrent of disappointment with the comparatively slow progress made by cremation in this district. Indeed, it is said to be "unpopular in the North." The report does not rest the claims of cremation for support solely on the hygienic or sanitary aspects of the matter but appeals also to the love of cheapness which is believed to be a very general characteristic of our times. It is stated that the dead can be cremated for much less than they can be buried, if there is taken into consideration "the subsequent expense after interment in the erection of a memorial to the deceased, as against the moderate cost of a niche for the reception of the urn containing the ashes of the deceased." There are, of course, many arguments in favour of cremation but it may rather jar on some minds when the grimly commercial view of the question is put prominently forward.

WELLCOME'S PHOTOGRAPHIC EXPOSURE RECORD AND DIARY.

We have received from Messrs. Burroughs, Wellcome and Co. their photographic diary for 1907. It contains some useful information concerning the practical details of photographic manipulation. The directions given, combined with the simplicity and convenience of the mechanical calculator and tables of light values, should render the estimation of correct exposure a simple matter. The articles on machine development, and on tank or stand development fully describe the manipulations connected with these methods. Each book is accompanied with a folding card showing the timing of development by the factorial method for various degrees of contrast. The book will be found a distinct aid to all interested in practical photography.

PHARMACOLOGY.

We have received from Messrs. Southall Brothers and Barclay of Birmingham a copy of their fifteenth annual laboratory report which contains many interesting observations on pharmacological progress. This report shows amongst other things that a considerable amount of work has been done in regard to the chemical and physiological standardisation of atropine, from which it appears that the different varieties of atropine contain glucosides essentially different not only in their toxic effect but different also in chemical constitution.

Honestas.—The story is not an edifying one. A seems to us to have lost his practice to B in fair competition, but anyone purchasing B's practice would have to remember that B paid nothing for it, so that the title was insecure. With regard to "C" using confidential information obtained from B's wife we do not see that this is proved, nor even that it was necessary for C to obtain confidential information at all to enable him to understand the situation. C's old relations with A make it probable that they acted in unison from the beginning. While we sympathise with D we do not see that anything has been done of which the General Medical Council, the only tribunal which the medical profession possesses, could take notice. The Council, however, might have a different opinion if the facts were submitted to it.

Interested.—We deplore such paragraphs but in our experience the beleaguered medical man is not as a rule the offender. The invidious friend, sometimes acting as a correspondent to, and sometimes actually connected with, a newspaper is almost always the author of such paragraphs. Can our correspondent prove that the medical man in question wrote or inspired the paragraph himself?

Mr. R. K. Contractor.—If our correspondent is correct in his facts his best course is to bring the subject to the notice of the Indian Government authorities in Bombay. It would probably be necessary to prove that the person in question had really made use, or was at the time making use, of the title of Doctor of Medicine by virtue of an authority of the degree mentioned by our correspondent.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopaedic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

TUESDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M.), Ophthalmic, 2.15 P.M., Tottenham (2.30 P.M.).

WEDNESDAY (23rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopaedic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Free (2 P.M.), Royal Orthopaedic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

THURSDAY (24th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynecological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopaedic (3 P.M.), Royal Free (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynecological, 2.30 P.M.).

FRIDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopaedic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Auril, 2 P.M.), Tottenham (2.30 P.M.).

SATURDAY (26th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (22nd).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (21, Hanover-square, W.).—8.30 P.M.: Papers.—Dr. H. C. Bastian: On the De-novo Origin of Bacteria. Bacilli, Vibrios, Micrococci, Toruli and Moulds in certain previously Superheated Saline Solutions contained within Hermetically Sealed Tubes.—Dr. S. West and Dr. T. W. Clarke: Idiopathic Cyanosis due to Sulph hæmoglobinæmia, (Epilidæic demonstration).

THERAPEUTICAL SOCIETY (Apothecaries' Hall, Blackfriars, E.C.).—4.30 P.M.: Papers.—Dr. R. B. Wild: The Proper Scope of the Teaching of Materia Medica, Pharmacology, and Therapeutics in the Medical Curriculum.—Dr. Bonney: On a New Method of rendering Croscoto and Cannable Indica Soluble, and Short Notes on certain Useful but Little Known Drugs.

WEDNESDAY (23rd).—HUNTERIAN SOCIETY (London Institution, Finsbury-circus, E.C.).—8.30 P.M.: Hunterian Lectures.—Mr. M. Robson: Points in the Diagnosis and Treatment of Duodenal Ulcer.

FRIDAY (25th).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M.: Clinical Evening for the Exhibition of Cases followed by Discussion. Patients in attendance from 8 to 9 P.M.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (21st).—MEDICAL GRADUATES' COLLEGE AND POLYTECHNIC (22, Chancery-street, W.C.).—4 P.M.: Dr. W. Fox: Clinique (Skin). 5.15 P.M.: Lecture.—Dr. G. E. Herman: Some Points in Connection with Dysmenorrhœa.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—12 noon: Pathological Demonstration.—Dr. G. C. Low: 2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: X Rays. Operations. Mr. Dunn: Diseases of the Eye. 5 P.M.: Lecture.—Mr. Bellwin: Practical Surgery.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—9.30 A.M.: Clinique—Surgical Out-patient (Mr. B. Evans). 2.20 P.M.: Cliniques: Medical Out-patient (Dr. Whipple), Throat, Nose, and Ear (Mr. Carson); X Ray Demonstration (Dr. Fife).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Sir D. Duckworth: Medicine. 3.15 P.M.: Mr. W. Turner: Surgery. 4 P.M.: Dr. St. Clair Thomson: Diseases of the Throat, Nose, and Ear. Out-patient Demonstrations.—10 A.M.: Surgical, and Medical. 12 noon: Eye and Throat. Special Lecture.—Sir D. Duckworth: Cirrhosis of the Liver.

TUESDAY (22nd).—MEDICAL GRADUATES' COLLEGE AND POLYTECHNIC (22, Chancery-street, W.C.).—4 P.M.: Dr. J. Taylor: Clinique (Medical). 5.15 P.M.: Lecture.—Dr. R. Jones: The Insane Temperament.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moulton: Gynecology. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: X Rays. Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Clinical Lecture.—Mr. Armour.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—10.30 A.M.: Clinique.—Medical Out-patient (Dr. Auld). 2.30 P.M.: Surgical Operations (Mr. Carson); Cliniques: Gynecological Out-patient (Dr. Giles), Surgical Out-patient (Mr. Edmunds). 4.30 P.M.: Lecture.—Dr. Whipple: Erythema in Children.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. R. T. Bewlett: Medicine. 3.15 P.M.: Mr. Carless: Surgery. 4 P.M.: Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queens-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture.—Mr. Sargent: Surgery of the Brachial Plexus.

CHARING CROSS HOSPITAL.—4 P.M.: Demonstration.—Dr. MacLeod: (Dermatological). (Post-Graduate Course.)

WEDNESDAY (23rd).—MEDICAL GRADUATES' COLLEGE AND POLYTECHNIC (22, Chancery-street, W.C.).—4 P.M.: Mr. A. H. Tubby: Clinique (Surgical). 5.15 P.M.: Lecture.—Dr. A. E. Giles: Developments and Disorders of Extra Uterine Gestation.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: X Rays. Operations. Dr. Robinson: Diseases of Women. 5 P.M.: Lecture.—Dr. Beddard: Practical Medicine.

THE EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—2.30 P.M.: Clinique.—Dermatological (Dr. Meachen), ophthalmological (Mr. Brooks), Medical Out-patient (Dr. Whipple).
SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. F. Taylor: Clinique. 3.30 P.M.: Mr. Cargill: Ophthalmology. Out-patient demonstrations.—10 A.M.: Surgical and Medical. 11 A.M.: Eye.
GENERAL THROAT AND EAR HOSPITAL (Gray's Inn-road, W.O.).—5 P.M.: Demonstration.—Dr. Abercrombie: Nose and accessory Sinuses.

ESDAY (24th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.O.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M.: Lecture.—Mr. L. Mummery: The Special features of Appendicitis in Children.

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: X Rays, Operations. Mr. Dunn: Diseases of the Eye. 5 P.M.: Clinical Lecture.—Dr. Davis.

THE EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—2.30 P.M.: Gynecological Operations (Dr. Giles). Cliniques.—Medical (Dr. Whiting), Surgical Out-patient (Mr. Jackson). 3 P.M.: Clinique.—Medical In-patient (Dr. Chapple). 3.30 P.M.: Lecture.—Dr. Meachen: Demonstration of Selected Skin Cases.

SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. G. Rankin: Medicine. 3.15 P.M.: Sir W. Bennett: Surgery. 4 P.M.: Dr. H. Cooper: Radiography. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat. Special Lecture.—Sir W. Bennett: Concerning Pain in the Groin.

JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.O.).—6 P.M.: Chesterfield Lecture.—Dr. M. Dockrell: Syphilis: Popular (I., Miliary; II., Lenticular; III., Squamous; IV., Molar, Pustular and Tuberculous).

LARING CROSS HOSPITAL.—4 P.M.: Dr. Routh: Demonstration (Gynecological). (Post-Graduate Course.)

HOSPITAL FOR SICK CHILDREN (St. Ormond-street, W.O.).—4 P.M.: Lecture.—Dr. Hutchison: Infant Feeding.

DAY (25th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.O.).—4 P.M.: Mr. S. Stephenson: Clinique. (Eye.)

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—10 A.M.: Dr. Moullin: Gynecology. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: X Rays. Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Lecture.—Mr. Lloyd: Anesthetics.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—3.30 A.M.: Clinique.—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Surgical Operations (Mr. Edmunds). Cliniques.—Medical Out-patient (Dr. Auld), Ophthalmological (Mr. Brooks). 3 P.M.: Clinique.—Medical In-patient (Dr. Leslie).

SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. R. Bradford: Medicine. 3.15 P.M.: Mr. McGavin: Surgery. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Skin.

NATIONAL HOSPITAL FOR THE PARALYZED AND EPILEPTIC (Queens-square, Bloomsbury, W.O.).—3.30 P.M.: Clinical Lecture.—Sir V. Horsley: Surgery of the Nervous System.

THURSDAY (26th).—POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: X Rays. Operations. Dr. Robinson: Diseases of Women.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1906, which was completed with the issue of Dec. 29th, were given in THE LANCET of Jan. 5th, 1907.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1906 are now ready. Bound in cloth, gilt lettered, price 18s., carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2s., by post 2s. 3d.

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.O., are dealt with by them? Subscriptions paid to London or to local newagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and not to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularly in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

EDITORIAL NOTICES.

It is most important that communications relating to the editorial business of THE LANCET should be addressed exclusively "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners. Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

METEOROLOGICAL READINGS.

(Taken daily at 8.50 a.m. by Edward's Instruments.)

THE LANCET Office, Jan 17th, 1907.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radiation in Foot-candles.	Maximum in Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 11	30.636	N.W.	0.19	65	46	41	40	41	Fine
" 12	30.628	W.	...	59	43	38	39	41	Overcast
" 13	30.530	W.	...	65	50	41	46	48	Cloudy
" 14	30.490	W.	...	50	49	47	44	47	Overcast
" 15	30.510	W.	...	63	48	46	43	46	Overcast
" 16	30.670	W.	...	51	49	46	44	47	Overcast
" 17	30.686	S.	...	47	46	45	43	46	Overcast

During the week marked copies of the following newspapers have been received: *Notts Express*, *Boot and Shoe Trades Journal*, *Birmingham Daily Post*, *Yorkshire Daily Observer*, *Liverpool Courier*, *Surrey Advertiser*, *Leeds Post*, *Sheffield Independent*, *Westminster Gazette*, *Daily News*, *Chemical News*, *Standard*, *Daily Telegraph*, *Liverpool Courier*, *Birmingham Post*, *Freeman's Journal*, *Dublin Times*, &c.

Communications, Letters, &c., have been received from—

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A Clinical Lecture

ERYTHEMA NODOSUM AND RHEUMATISM.

Delivered at Bristol General Hospital.

By J. ODERY SYNES, M.D. LOND., D.P.H.,
M.R.C.S. ENG., L.R.C.P. LOND.,ASSISTANT PHYSICIAN AND BACTERIOLOGIST, BRISTOL GENERAL
HOSPITAL.

GENTLEMEN.—The disease (erythema nodosum) which I am bringing to your notice to-day is more commonly seen amongst hospital out-patients than in private practice. Many cases are so slight that the condition is passed over without medical aid being called for, and in severe cases the rash may be so ill-defined, and the constitutional symptoms so severe that the case is wrongly diagnosed as rheumatic fever, enteric fever, or broncho-pneumonia. Two entirely different views are held as to the nature of erythema nodosum. The more widely accepted view is that the condition is rheumatic in origin, like chorea, tonsillitis, endocarditis, and pericarditis, a manifestation or symptom of the rheumatic state. The second view, which is gradually gaining ground at the present time, is that erythema nodosum is an acute infective fever of a definitely specific nature.

I purpose to bring to your notice some of the facts for and against the theory of the rheumatic origin of the disease, and although these facts may not enable you to arrive at any definite conclusion, they cannot fail to stimulate your interest and lead you to pay a closer attention to such cases as you may meet in the future. First let me read an abstract of the notes on a case of erythema nodosum recently in the hospital.

A married woman, aged 50 years, was admitted to the Bristol General Hospital on Dec. 8th, 1905, suffering from erythema nodosum. She had always enjoyed good health and had no family or personal history of rheumatism. On admission the temperature was 101°F ., the pulse was 100, and the respirations were 30. The rash, which had been out for 14 days, was thickest on the extensor surfaces of the limbs in their outer aspect just above the knees; it was also present on the extensor aspect of the legs and the ulnar side of the forearms. There were patches of desquamation on both arms and legs. There were oedema of the legs and pain in the knees and stiffness and pain in the elbows and carpo-metacarpal joints of the hands. There was no sweating. There was a systolic apical bruit over the heart conducted outwards. The pulse tension was high and there was a trace of albumin in the urine. The blood showed: hæmoglobin, 83 per cent.; red cells, 4,200,000; and white cells, 20,000 per cubic millimetre. A differential count showed: finely granular oxyphile leucocytes, 74 per cent.; coarsely granular oxyphile leucocytes, 1 per cent.; large hyaline cells, 7 per cent.; and lymphocytes, 18 per cent. There was slight bronchitis. The teeth were defective and the gums were very foul. The patient was given 20 grains of sodium salicylate every four hours, and the temperature, which had risen on one occasion to 102°F ., was normal on the fourth day. On the night of the fifth day she was noisy and delirious and the salicylate was stopped. The temperature then rose to 100°F ., and remained above normal for eight days, during which time the patient was given 15 grains of aspirin three times a day. The rash disappeared on Dec. 21st (27 days from its first appearance), leaving profuse desquamation, and on the 29th there was still complaint of pain and stiffness in the joints. The apical bruit, which had on occasions quite disappeared, was still faintly audible when the patient left the hospital on Jan. 20th, 1906. The illness had lasted eight weeks.

Such a case as this serves to show the close resemblance there is clinically between erythema nodosum and acute rheumatism, and we may now compare seriatim the predisposing causes of the two diseases.

Age.—Erythema nodosum is essentially a disease of youth and adolescence, the majority of cases occurring during the second and third decades of life. Thus of 125 cases:—

25 cases, or 20.0 per cent. of the total occurred in the 1st decade.	
51 " 40.8 " " "	2nd "
8 " 22.4 " " "	3rd "
13 " 10.4 " " "	4th "
3 " 2.4 " " "	5th "
3 " 2.4 " " "	6th "
2 " 1.6 " " "	7th "
No. 4352	

The age distribution of this disease, therefore, closely approximates to that of acute rheumatism, as may be evidenced from a table which I have published elsewhere¹: First decade, 8.3 per cent.; second decade, 31.6 per cent.; third decade, 24.3 per cent.; fourth decade, 23.3 per cent.; fifth decade, 9.3 per cent.; and sixth decade, 3.1 per cent. It is unusual for erythema nodosum to occur in infancy or old age. The youngest case in my series was three years old and the oldest 63.

Sex.—Whilst acute rheumatism attacks males more than females, erythema nodosum is nearly three times as common amongst women. In the present series of cases 36 were males and 89 were females. As age advances the proportion of women to men attacked becomes higher, the converse to what is seen in acute rheumatism.

Season.—The incidence curve of acute rheumatism presents, it will be remembered, a sharp autumnal rise. It is a curve closely resembling that of scarlet fever and erysipelas. The incidence curve of erythema nodosum shows no such rise. Of 139 cases 32 occurred in the first quarter of the year, 37 in the second, 26 in the third, and 44 in the fourth.

Previous illness.—The prodromal symptoms of erythema nodosum may extend over a period of from one to three or four weeks. They are malaise, fever, headache, pains in the limbs, dyspepsia, and tonsillitis. They are often misinterpreted and a diagnosis of rheumatism, influenza, gastric fever, or broncho-pneumonia is made, and when later the typical rash appears it is regarded as secondary in character. There is, however, but little evidence to prove that erythema nodosum is secondary to any infective process unless it be acute rheumatism. In considering the relationship between erythema nodosum and rheumatism too much importance must not be attached to the existence of febrile arthritis, a symptom which is met with in many diseases other than rheumatism, and it must be remembered that the arthritis of erythema nodosum is in many ways very different in character from that of rheumatic fever. A correct personal and family history would throw much light upon this point, but observers have differed widely in their estimates. Thus Lenden says: "Out of 63 cases distributed amongst 49 families, a family history of rheumatic fever is not recorded once, and in the previous histories of the patients themselves there were only two mentions of rheumatic fever." Goodhart and Still found a rheumatic history in 19 of 29 cases. In a series of 48 cases of erythema nodosum occurring in Bristol three had suffered from rheumatic fever, one from chorea, and one from "growing pains." A mitral regurgitant bruit was present in one who had suffered from rheumatic fever, also in the patient who had suffered from "growing pains," whilst a second who had suffered from rheumatic fever had a presystolic bruit. Six other patients, none of whom gave a previous history of rheumatism, were found to have cardiac bruits (five systolic and one presystolic). Three patients had bruits which were regarded as probably benign in origin. Thus there was the possibility of a rheumatic origin in 11 out of 48 cases (22.9 per cent.). I have no means of judging of the prevalence of rheumatism amongst the class of patients frequenting our hospitals but amongst public school boys rheumatic stigmata are found in just under 3 per cent. It should be mentioned here, however, that erythema nodosum has been observed in gonorrhœal rheumatism. I have seen one such case myself and Hermann records eight undoubted cases.² I have made a bacteriological examination of the blood in a severe case of erythema nodosum but found it sterile, and Fussell, who examined serum from artificial blisters in cases of erythema nodosum, found no specific organism.³ Lenden, too, records a negative result.

From a review of the foregoing facts we find that the evidence of a relationship between erythema nodosum and rheumatism is of a conflicting nature. Whilst the age-incidence of the two diseases coincides there is a marked difference in their prevalence amongst the two sexes, and whilst valvular heart affections appear to be more common amongst sufferers from this disease than amongst the population generally, yet there is not that characteristic seasonal rise of autumnal incidence such as we see in acute rheumatism.

It now remains for us to examine whether the signs and symptoms of the two diseases are in any way similar.

Arthritis.—The arthritis of erythema nodosum may assume

¹ The Rheumatic Diseases (John Lane)
² Münchener Medizinische Wochenschrift, Sept. 5th, 1895.
³ Medical Record, May 12th, 1896.

various forms. The commonest form is pain in the joints without any objective redness or swelling and but slight tenderness on movement. This is strictly comparable to the arthritis of subacute rheumatism. In some cases, however, the joints present rather the appearance of gout. The swelling is hot, red, oedematous, and spreads beyond the immediate neighbourhood of the joint. It is, however, never extremely painful and in spite of the swelling patients can tolerate considerable movement. In yet other cases the joints are enlarged but there is not redness or oedema and the picture is that of gonorrhœal rheumatism or rheumatoid arthritis. The joint pains are not relieved by salicylates.

Temperature.—In the majority of cases of erythema nodosum seen in out-patient hospital practice the temperature is not raised. In acute cases, however, it may rise to 103° or 104°. The peculiar features of the pyrexia are that the rise may take place some days before arthritis or rash appears, and it may persist for three or four weeks in spite of the administration of salicylates. It often takes on an intermittent character.

The rash.—Erythema nodosum is not infrequently associated with other forms of erythema—papular and circinate—such as are observed sometimes in acute rheumatism.

Bronchitis frequently accompanies erythema nodosum. Less frequently it is seen in acute rheumatism.

General.—Lenden found phlyctenulæ in the eyes of 38 per cent. of his cases of erythema nodosum. Personally I have only recently looked for this symptom and up to the present have found it but very rarely. Phlyctenulæ have not been described as associated with any rheumatic conditions. Another point of difference between this disease and rheumatic fever is that whilst in the latter relapses and recurrences are of frequent occurrence, a relapse in erythema nodosum is rare and a second attack quite exceptional. I have recorded one case where a second attack occurred after an interval of more than 50 years.

Erythema nodosum is not characterised generally by any great constitutional disturbance but in severe cases the patient may be delirious, and one young woman sent into the Bristol General Hospital under my care as suffering from enteric fever was comatose for two days. In rheumatic fever it is quite exceptional to find delirium and coma apart from hyperpyrexia. I think that the delirium in erythema nodosum is often the result of the large doses of salicylate which are given, patients suffering from this disease, unlike rheumatic patients, being very intolerant of the drug. The long prodromal period is unlike the onset of rheumatic fever where the disease is seldom presaged by long-continued malaise. I have already referred to the fact that the salicylates do not relieve the joint pains or reduce the pyrexia of erythema nodosum.

Table showing Differences between Acute Rheumatism and Erythema Nodosum.

Rheumatism.	Erythema nodosum.
Age: Youth and adolescence.	Youth and adolescence.
Sex: Males.	Females.
Season: Autumn.	No seasonal variation.
History or signs of past rheumatism: Present.	Present, but less frequent.
Micrococci found.	Not found.
Joints: Tender and of characteristic appearance.	Seldom tender; appearance varied.
Prodromata: Uncommon and of brief duration.	Frequent; long continued.
Erythematous rashes.	Erythematous rashes.
Phlyctenulæ: Not found.	Occur in 38 per cent. of cases (Lenden).
Relapses and recurrences: Frequent.	Rare.
Endocarditis: In about 30 per cent. of cases.	In from 10 to 20 per cent. of cases.
Salicylates relieve.	No effect, but may excite delirium.

Recently a small boy came under my care suffering from erythema nodosum, and on inquiry I found that his sister had a similar attack three weeks previously. Lenden reports several such cases, but they do not point conclusively to the infective nature of the complaint, and indeed may indicate a common rheumatic taint. Cases of erythema

nodosum occur sometimes in groups but no epidemic of the disease has ever been recorded.

The evidence which I have brought forward is, of course too conflicting to enable us to say definitely whether we have in this condition merely a rheumatic symptom or a definite disease, but there is, in my opinion, much to support the view that erythema nodosum is a specific acute febrile disorder; that infection takes place through the tonsils and lungs; that after a prolonged incubation period and period of prodromal symptoms a specific rash appears; and that convalescence is accompanied by profound anæmia and malaise.

SPIRILLUM FEVER IN UGANDA.

By R. U. MOFFAT, O.M.G., M.B., O.M. EDIN.,
LATE PRINCIPAL MEDICAL OFFICER OF UGANDA AND THE EAST AFRICA
PROTECTORATES.

It has long been known that spirillum fever is a febrile disease caused by the presence of a species of spirochaeta in the blood. It was first described under the name of "famine" or "relapsing" fever, but it has no essential connexion with famine and in its clinical course and its tendency to relapse it differs but in a slight degree from some other fevers. In the absence of a microscopic examination of the blood it is at times most difficult to make a diagnosis and reliance has to be placed on clinical symptoms and physical signs rather than on the temperature chart. As showing how an unsuitable name may mislead I might mention that ten years ago, in Uganda, I strongly suspected the presence of so called relapsing fever on clinical grounds, but concluded that I was mistaken—first, because the disease I met with had no relation whatever to famine, and secondly, because in many cases the typical relapses did not take place and my temperature charts showed absolutely no resemblance to those portrayed as characteristic of the disease. The name "tick fever" is also objectionable, for though it has been shown by Dutton, Todd, and Koch that it is transmitted by ticks, it is quite possible that there may be other human diseases which are carried in like manner. To my mind it has been too hastily assumed that spirillum fever is identical with a disease called tick fever, which has long been known in the region of the Zambesi. If the accounts given of the latter are correct its clinical features are quite unlike those of spirillum fever as met with in Uganda, and if it should be proved that they are distinct diseases much confusion will result from this nomenclature. Already the term "tick fever" is often applied to a cattle disease which is transmitted by ticks, and it is not uncommon to hear spirillum fever referred to by the laity and by inexperienced members of the profession as though it were the same disease as that caused in cattle by a totally different organism. It seems preferable, therefore, to name the disease after the organism which causes it rather than after its transmitting agent or some feature which is by no means characteristic.

The disease is certainly not a new one in Uganda, though in times past it was probably often mistaken for malaria. There is no doubt, however, that it is becoming more prevalent and this is in great measure due to the increased traffic on the main roads, for it is in the tick-infected camps along these roads that infection is most commonly contracted. Owing to exigencies of food and water suitable camping-grounds are only to be found at certain places and these caravans in a constant stream make use of these nightly. Once the ticks become infected it is easy to see how the disease is disseminated, and, indeed, the risk of infection is so great that it constitutes one of the most serious dangers and drawbacks to travel in Uganda at the present time.

Incubation period.—In the tick fever of the Zambesi it is stated that acute symptoms follow a few hours after the bite of a tick, but in spirillum fever I have never satisfied myself of a case in which the incubation period was less than seven days and in this particular, therefore, the two diseases differ materially. It would seem that in a susceptible subject the incubation period varies from seven to ten days, but it may be much longer as a result of a partial immunity either natural or acquired. There is no doubt that one attack does confer some measure of immunity and after a second the immunity probably becomes complete, at any rate for a time.

I had a case in a native which must either have been an instance of an unusually late relapse after six months or a

and infection. In another case the patient had a second attack a year after the first and in both these cases only one attack occurred in the second infection. A case in a European is also suggestive. In this instance the patient had spirillum fever with five relapses. After an interval of a month and a half months he was exposed to the risk of fresh infection whilst travelling, but he had no definite remembrance of being bitten by ticks. A month later he had a fresh attack lasting three days; spirilla were found, but scarcely. After an interval of 19 days he had a relapse; this time also the parasites were very few in number. Further relapses took place and this irregular course and long period of incubation were no doubt due to a partial immunity acquired from the first infection. Among natives quite common for one single attack to occur without any relapses and the disease is so prevalent that it is not reasonable to assume that such patients have had it before.

Number of relapses.—Owing to the long-drawn-out course of the disease it is difficult to keep patients, especially natives, under observation throughout the whole time. During the apyretic periods the general health may be such that patients can pursue their ordinary avocations and they usually refuse to stay in hospital. Thus, although about 60 cases came under my observation during the last year I was in Uganda, I only obtained a fairly complete record in 30 of them, as follows: In 21 cases there was one initial attack without any relapse; in two cases there were two attacks (one initial and one relapse); in one case, three attacks (one initial and two relapses); in three cases, four attacks (one initial and three relapses); in two cases, five attacks (one initial and four relapses); and in one case, six attacks (one initial and five relapses). It is worth pointing out that in all the cases in which there were more than three attacks the patients belonged to a part of the country where the disease is much less common and consequently they were more likely to be susceptible. As a rule, in a susceptible subject the initial attack is followed by from three to five relapses. If only two relapses occur I am inclined to suspect a partial degree of immunity.

Period of intermission.—In the 30 cases to which reference has been made this varied as follows: Between the initial attack and the first relapse from five to nine days; between the first relapse and the second relapse, from five to eight days; between the second and third relapse, from five to nine days; between the third and fourth relapse, from eight to 26 days; and between the fourth and fifth relapse it was eight days in the one case.

In some cases, not included among the above, as they were only under observation for a short time, the first relapses occurred after apyretic periods of one, two, and three days. I am inclined to regard these as due to separate infections at different times. When a man is travelling he runs some risk of being bitten every night by infected ticks, and possibly re-infection after a short interval will result in the appearance of two batches of parasites of different ages and origins. This may account for the irregularity with which the earlier attacks sometimes follow one another. I am of opinion that if a period of ten days passes without a relapse none need be anticipated, but when once a single relapse has occurred the subsequent intervals are very irregular and tend to grow longer. The final relapse is usually a slight one, separated from the previous one by an interval of a fortnight or three weeks.

Duration of the attacks.—From three to four days represent the usual length of an attack, but the later ones tend to be shorter. Very often the last is characterised by a single rise of temperature, persisting for a few hours, and followed by a rapid fall to normal.

Presence of parasites.—In the earlier attacks parasites are generally more numerous than in the later ones, in which they may be excessively scarce. This does not always hold good, for at times they are found plentifully even in the later relapses. Towards the end of an attack they begin to disappear even before the temperature has fallen to normal. In one fatal case complicated with tuberculous meningitis spirilla were found even when there was no rise of temperature. In this instance the patient was admitted with a history of several days' acute illness, which from other evidence I judged to have been spirillum fever. His temperature was, however, normal, and the blood examination proved negative. He was kept in hospital for observation,

and though for three days he had no rise of temperature his condition grew steadily worse, serious cerebral symptoms supervening. His blood was examined carefully each day but nothing was found. Finally, being convinced that he had had spirillum fever, I punctured his liver, which was enlarged, and in a smear of blood thus obtained I found spirilla in very large numbers. His finger blood was then again examined and parasites were found, though not so numerous as in the liver-blood. The patient died on the next day and the post mortem examination revealed the fact that he had tuberculous meningitis. On the day that the parasites were found in the liver they had appeared, as was subsequently shown, in the peripheral circulation, but possibly they could have been demonstrated earlier in the liver and in an obscure case where the diagnosis was a matter of urgency, liver-puncture might be justifiable.

Symptoms.—A feeling of malaise, headache, and distaste for food generally precede an attack, coupled with pains in the back and limbs. A slight increase in temperature very soon shows itself and when the acute symptoms develop it rises rapidly. High temperatures are the rule, as will be seen from the following figures: In two of the 30 cases referred to above the maximum temperature was 106° F; in 10 cases it was from 105° to 105·8°; in six it was from 104° to 104·8°; in seven it was from 103° to 103·8°; and in five it was 102° and under. During the course of an attack slight variations of a degree or two occur, not always in relation to the time of day, and, speaking generally, it may be said that the temperature fluctuates but little, and that a decided and sudden fall heralds the approaching termination of an attack. In most cases the temperature then falls quickly to normal, but sometimes a degree or a degree and a half persists for two or three days after the crisis. The skin is hot and dry and the face flushed. In one case in a European a profuse erythematous papular eruption appeared during his first attack and persisted for 48 hours. It covered the face, limbs, and whole body. Whether or not it had any connexion with the disease it is difficult to say, but possibly it occurs frequently, for a rash of this nature might be easily overlooked on a black skin.

Digestive system.—The appearance of the tongue is quite characteristic; it is moist, flabby, and deeply coated all over with white fur. Excessive vomiting is a prominent symptom among European patients, less so among natives. The bowels are, as a rule, constipated, unlike what is said to be the case in Zambesi tick fever, in which purging is spoken of as a marked symptom. In only two cases have I seen purging, and in both of these the patients had ankylostomiasis, which in itself would account for the bloody diarrhoea that was present. Slight jaundice is quite common. The liver and the spleen are generally enlarged and very tender; sometimes only the former is affected.

Respiratory system.—Quick breathing, slight cough, and diffuse pains in the chest are nearly always present, but in a certain proportion of cases these symptoms are intensified and accompanied by all the signs of lobar pneumonia. There are dullness over one or both bases, harsh tubular breathing, great pain, and thick blood-stained sputum. Some years ago I drew attention to the frequency in Uganda of a form of pneumonia which ran a very short course, and judging from my later experience I believe that these were merely examples of the pneumonic form of spirillum fever. The signs and symptoms disappear at once with the termination of the attack, with a rapidity which is most bewildering, if a diagnosis of pneumonia has been made from physical signs without reference to the blood. As a rule, these pneumonic attacks only occur with any intensity in the initial attack of spirillum fever. In the subsequent relapses there may only be the usual quick breathing and slight cough. Spirilla can be found in large numbers in the bloody sputum, and no doubt in these cases the lung vessels are choked with parasites.

Circulatory system.—During the pyrexia the pulse is very rapid; it may be 150 or more. Præcordial pain and oppression are often complained of and the heart muscle appears to suffer, for a tendency to slight attacks of syncope following exertion or excitement is very common. This persists for some days after the febrile period.

Nervous system.—There may be slight incoherence and excitement when the temperature is high, but delirium is not common. Persistent and excruciating headache is a constant feature and in some cases causes acute torture. It is accompanied by actual tenderness of the scalp, which

may be so great that the act of brushing the hair is unbearable. This headache persists sometimes for several days after the temperature has fallen to normal. Unilateral facial paralysis occasionally follows and may last for a few weeks.

Eye symptoms.—A curious condition affecting the eyes frequently occurs. Both eyes may be affected, simultaneously or in succession, but most frequently it is unilateral. It does not come on, as a rule, until after the first relapse and it may be much later. The symptoms consist of an injection of the deeper vessels of the sclera around the cornea, not unlike that seen in an ordinary iritis, but the iris looks quite clear and on cursory examination seems mobile. There are pain, lacrymation, and photophobia. I had long been familiar with this condition, which is very commonly seen, and in default of a better name was in the habit of calling it a scleritis. Eventually I observed that it was associated with spirillum fever and on more careful examination it was apparent that in spite of its deceptive appearance the iris was in reality affected. If atropine be instilled it may be observed that there are some adhesions, but these are rarely tight; in fact, they may be overlooked entirely unless the eye is watched during the time when the atropine is beginning to act. In mild cases the adhesions are so slight that in a very short time the dilatation is complete and uniform. The severer forms of the condition at once suggest iritis, and differ but little from the ordinary inflammatory form of that disease, but the important point to which I want to draw attention is that the mild type associated with a clear and apparently mobile iris is in reality an affection of that organ. On examining with the ophthalmoscope it will be noted that there is on the lens an abundant deposit of pigment, which in my experience occurs far more frequently in this disease than in an ordinary iritis. Often it occurs in the form of a complete ring with a central clear space corresponding to the original pupillary aperture. There is turbidity of the vitreous, so that it may be impossible to obtain a clear view of the fundus. The patient complains of a cloud before his eyes. This symptom persists for some weeks after all injection and other signs have passed off, and may be a source of great anxiety. A reassuring prognosis may, however, be given, for eventually the vision is completely restored by the disappearance of the pigmentary deposit. My own impression with regard to this affection is that it is not primarily a real inflammatory iritis, but that it is a condition resulting from thrombosis in the vessels of the ciliary body and iris, leading possibly to hæmorrhages into the vitreous. At times it does develop into an acute iritis and the adhesions which then form are of the usual kind. I have seen in a neglected case both pupils so firmly bound down that I had eventually to perform an iridectomy. As a rule, however, there seems to be no tendency towards the formation of tight adhesions, even if the condition is untreated, but in cases where no steps have been taken to insure dilatation of the pupil a large amount of pigment deposit may be expected, and to avoid this atropine should be instilled immediately any eye symptoms develop.

Diagnosis.—The spirochætae can easily be found in fresh blood if present in large numbers, but a thin, evenly-spread film is quite unsuitable and in such they may be overlooked even when numerous. A film of moderate thickness is preferable, and in such the agglomerated masses of corpuscles will sometimes be seen vibrating from the movements of the contained parasites if the latter are sufficiently plentiful, and by careful focussing they may be seen semidetached wriggling in the surrounding serum. Being very refractile they are best seen with little light and appear as rapidly moving threads; sometimes they may be made out quite distinctly moving over and against the dark background of a thick layer of corpuscles. There is no doubt, however, that they are much more easily found in stained preparations. I have tried the two methods side by side in the same case and after a vain search through the fresh film I found them at once in the stained one. The quickest way is to take a fresh film and a dry one at the same time. A few minutes are devoted to the former and if the parasites are numerous they will at once be seen and the trouble of staining is avoided. If the search proves negative staining can be proceeded with. I have for the most part used Leishman's stain, which is simple and effective, and the parasites can easily be seen under a sixth. At times they are very sparse, necessitating a prolonged search through several slides. In the absence of means for making a blood

examination it is not possible to make an absolutely definite diagnosis. A history of previous tick bites or of a possible exposure to such will afford strong suspicion as to the nature of the fever but in places where the disease is endemic there are many other biting things and people are so accustomed to their attacks that very often there will be no distinct remembrance of such. The disease with which it is most likely to be confused is malaria. In its onset it differs from it in the absence of any rigor, though it must be remembered that in the malignant tertian the rigor is represented often by a slight and evanescent feeling of chilliness, but otherwise the initial symptoms are very much alike, though, as a rule, they are more aggravated in spirillum fever, especially the headache and vomiting. In the greater number of cases of malaria there is no particular enlargement or tenderness about the liver, whereas in spirillum fever they are almost constant features. The splenic enlargement is common to both. The appearance of the tongue, with its thick, creamy-white deposit of fur, is quite unlike the dirty, dry tongue of malaria. As regards the temperature, there is usually in malaria a distinct tendency to intermission or, at any rate, a marked remission, such being generally preceded by profuse sweating. Spirillum fever attacks are sometimes so short that a sudden termination cannot be attributed to the influence of any remedy administered, and therefore the action of quinine on the temperature cannot be relied upon as a means of diagnosis, except to exclude malaria when the drug fails. The quick breathing and pain in the chest seen in spirillum fever do not occur in malaria. In the pneumonic form a diagnosis can only be made by watching the course of the disease, but it may be noted that the physical signs in the chest not only disappear but develop much more rapidly than they do in an ordinary pneumonia.

The eye symptoms point very strongly towards spirillum fever. I formerly believed that malarial iritis was a common complication of that disease, but since I began to depend for a diagnosis on blood examination I have not seen a case of iritis following malaria. Probably in my earlier cases the antecedent fever was spirillum.

Prognosis.—I have myself only seen one fatal case, already referred to, in which the actual cause of death was tuberculous meningitis. There is this to be said, that most of the cases which came under my notice were amongst able-bodied men and women, and in such the prognosis is good as regards recovery, though the attacks cause much acute suffering. Patients who have a series of relapses become very debilitated but there is no obvious anaemia. Accurate investigations in regard to this point are required. Children take the disease badly and some of the worst cases I have seen were among those under ten years of age. In very young children, old people, and other debilitated subjects the prognosis is probably less hopeful, especially if there is any cardiac weakness present. Pregnant women nearly always abort, and I know of one case in which this complication proved fatal.

Treatment.—So far I cannot speak with confidence in regard to any specific line of treatment. I tried arsenic hypodermically in a large number of my cases, but there is always a fallacy attending experiments in treatment in that the course of the disease may be modified by the presence of a partial immunity. My own impression is, however, that arsenic does tend to decrease the number of relapses. Acting on the assumption that syphilis is caused by the spirochæta pallida, I thought that possibly the antidote for that disease might prove effective in spirillum fever. Not only did it have no effect, but in one case a syphilitic patient who had been under my care for two months, and had taken mercury during the whole time, became infected with and developed spirillum fever which ran its usual course. For the actual attacks symptomatic treatment must be adopted. A smart purge at the outset is beneficial. The headache is sometimes most intractable and may require the hypodermic administration of morphia which tends also to allay the vomiting. Ordinary antipyretics are practically useless; with young children, to whom a high temperature is dangerous, the cold bath or sponging may relieve the urgency of the situation. Great care should be taken to avoid exertion or excitement, not only during the attack but for some days subsequently, as a fatal syncope might result from such. On the first sign of any complaint about the eyes atropine should be instilled and the pupil kept dilated.

Harley-street, W.

X RAYS IN THE TREATMENT OF CARCINOMA AND SARCOMA.¹

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IN 1905 I published a paper in THE LANCET, entitled "X Rays in the Treatment of Cancer,"² illustrating my remarks with a brief account of ten cases of undoubted carcinoma and sarcoma which had been brought to a successful issue by means of the rays. The earliest case that I have had to treat was sent to me in February, 1900. There was a deep epitheliomatous ulceration of the tongue in a man, aged 61 years. All one can say of that case is that the pain seemed lessened; the treatment, such as it was, was kept up for four months, during the whole of which time the patient steadily lost weight, on the average about a pound a week. From past experience of other early cases and my present knowledge I am led to believe that he did not have one-twentieth of the dose he should have had; one was so fearful at that time of inflammation of the mouth that the slightest reaction was considered the forerunner of that bugbear "dermatitis." The first 16 cases all succumbed within eight months of commencing treatment; this was most discouraging, but still alleviation of pain was produced in some in such a marked degree that it encouraged me to persist. The seventeenth patient, however, gave me much encouragement; he was a man, aged 59 years. In August, 1900, I had what I consider another hopeful case, a person of a man, aged 33 years. In April, 1900, I removed a small tumour from the left parotid region, which had first been noticed in the preceding January. The incision healed by first intention and the Clinical Research Association reported on the growth that it was "a fibro-sarcoma with spindle cells." Four months after, in August, it had recurred in the shape of a lump of the size of a walnut, fairly hard and adherent to the skin and underlying tissues. The patient was treated to 13 applications of about five minutes each with a fairly soft tube and through a lead shield, the shield being of a thickness of one pound to the square foot. During the treatment a slight dermatitis was produced to the degree of dry exfoliation. This was quite unintentional, but the rapidity of the disappearance led me to think a great deal about the subject of the necessity or otherwise of a "reaction." There has been no recurrence during the past five and a half years. The next patient was a single woman, aged 42 years (sent by Dr. H. V. Griffiths). In June, 1899, the late Mr. Christopher Heath removed the left breast and glands in the axilla for scirrhus carcinoma. There was recurrence in the scar and amput about 11 months after. A second operation was performed in March, 1900, and eight months later an ulcerated lump formed in the axilla discharging thin serous fluid tinged with blood. The Clinical Research Association reported on a minute portion "consists of scirrhus carcinoma cells." X ray treatment was commenced in November, 1900, with daily exposures of ten minutes each sitting; a medium hard tube was used at a distance of four inches between glass and skin. After 16 applications a dermatitis was set up; it consisted of a deep erythematous blush over the whole of the left chest and upper arm. Around the scar for a few inches were a multitude of bullæ each of about the size of a millet seed. There was a cessation of treatment for about five weeks. During which time the patient went to the seaside. On her return the greater part of the area was deeply pigmented and about the middle some dry exfoliation was seen. She was treated for a further six weeks by two applications a week with a fairly hard tube at a distance of eight inches about five minutes each sitting. In all, 23 exposures were given. There has been no recurrence during the past four and a half years and the patient is still in excellent health.

Theories.—Several theories have been advanced to account for the action of the x rays on malignant growths. And in my opinion they all seem to point to a leucocytosis being ultimately produced in or around the growths. According to Legros x rays have a special selective action on new

growths—the cell nuclei swell, do not stain well, the outlines of the cells become indistinct and fuse, the protoplasm becomes irregular, is invaded by leucocytes and absorbed, leaving a network of dense connective tissues containing vessels with thickened walls from endo- and peri-arteritis due to the rays. No theory at the present time is entirely satisfactory, but it is encouraging to know that the action of the x rays on the blood is gradually taking shape. Several of our members are obtaining excellent results in leucocythæmia and allied conditions which may solve our difficulties regarding the theory of the action of x rays not only in cancer but in other divers diseases.

Reaction.—Reaction in the part to be treated is a vexed question among some electro-therapists. For my part, I am convinced from practical experience that some sort of reaction is absolutely necessary. It may not always be seen and requires much watchfulness on the part of the operator. My worst failures have been those in which no visible reaction could be seen either of the skin or, more important, of the lump itself. The reaction may take a visible form of redness in the mass if protruding through the skin or round the edges if an ulcer, swelling or hardness of the tumour, increased heat, perhaps in some cases increased pain or other vague undefined feelings to the patients. If a discharge be present it soon takes on a more healthy action both as regards appearance and odour. Frequently I have seen masses break down and slough away. Sometimes there is pent-up pus, with elevation of temperature and night sweats. In one case of sarcoma of the side of the neck the growth became after one application of new soft tube, 20 minutes at three inches, almost black, and the turgescence of the overlying blood-vessels was very great. After the sixth dose the mass was fluctuating; it burst and discharged pus with large pieces of greenish fætid slough which microscopically showed intense degeneration (wash-leather slough). In some growths the reaction may affect the patient in a general way. Symptoms such as slight increase of bodily heat at night, sweatings, headache, malaise, thirst, and loss of appetite may be observed. This generally yields to a cessation of treatment for some time. This is most seen in large growths which are not ulcerated and have no exits for the products of disintegration, the patient having to absorb them and get rid of them by the usual channels.

Pre-operative and post-operative treatment.—If the theories mentioned are proved to be correct then it would seem to point to the advisability of using the x rays in all cases prior to operation, more especially to the hard and usually slower growing varieties. The rays might be used with advantage during that period, sometimes weeks, during which the patient is being prepared for operation. The mildest dosage should be used and the effects on the growth or glands carefully noted. It has been objected to by some that x rays should not be used as a pre-operative measure on the following grounds: that (1) the agent has not yet been proved curative, and (2) the serious risk of extension of the disease to inaccessible glands or other regions by metastasis during the period of trial. In answer to the first objection I am of opinion that the rays have been proved curative to a certain degree, not as yet absolute it is true. To the second objection I would only advise their employment at present to a few weeks at the most prior to the operation. In inoperable and recurrent cases the rays should always be used. Post-operative treatment may be used directly the scar is healed or even before that time if it shows the slightest appearance of being sluggish in the healing. A nodule of the size of a pea should have immediate treatment whether in the scar or not; this requires for its proper fulfilment constant observation by the medical attendant. In recurrent cases after operation the less "recurrence" there is to treat the easier it will be for the application of the rays to effect a favourable result. The best cases are those where the disease is strictly local. Nevertheless, the rays have given much promise of well-doing that in the present state of our knowledge it would be unwise to refuse treatment to any case on the score of extensiveness of growth. Again, we must always remember that pain in any case may be relieved in a remarkable manner. Also, the mere fact that something is being attempted for the patients has often proved to have extraordinary effect on the minds and very materially assists them to bear their heavy burden.

Causes of failure to arrest the progress of the growth.—Failure may be attributed to several things. Amongst the most important will probably be inexperience on the part of the medical man; the vagaries of the apparatus; too mild or

¹ Abstract of a paper read before the British Electro-Therapeutic Society, March 23rd, 1905.

² THE LANCET, Nov. 4th, 1905, p. 1312.

³ THE LANCET, Nov. 4th, 1905, p. 1320.

too energetic treatment; the case being hopeless on account of either the growth being too diffuse, or having become disseminated throughout the internal organs of the body; or the patient's general vitality having been lowered by previous suffering. Pain from the treatment is never severe but when added to the pain of the growth the total may be considerable; as a rule after a few applications the pain is very materially relieved; I have had many cases where opiates have been entirely dispensed with shortly after commencing treatment. In a large mass if the central parts show a tendency to break down into pus without an efficient exit the pain may be considerable. Hot fomentations in suitable cases seem to effect much good. Violet leaves being still the fashion they may be made into poultices or the infusion used as fomentations. Non-perseverance on the part of the patient may arise either from getting a measure of relief which frequently passes our most sanguine expectations and which the patient believes to be permanent, or from the patient giving up all hope of a cure owing to the somewhat tedious course of the treatment. Care must be taken that the part be transparent to the x rays. I was once consulted as to the failure of x rays in a case of fungating sarcoma. It had had two applications a week of x rays for over nine months, and although the tumour had diminished slightly the first two months, it had then rapidly renewed its growth. I found the lump of about the size and shape of a coconut, of ivory whiteness, consisting of over half an inch of hard white china-like material which was found to be due to the large amount of dusting powder used; this had caked and was quite opaque to x rays. The powder contained a very large percentage of zinc oxide. The tube was the original one and gave off a veritable shower of sparks; the spark gap was 12 inches and the current sparked during the whole application. A lay relative had applied the rays and did not consider all was right unless this phenomenon was observed. That was an example of too mild treatment. As an instance of too energetic treatment, in one patient of a very low vitality who suffered from a large inoperable sarcoma involving the whole of the contents and walls of one orbital cavity the treatment which it received for the first six weeks quickly began to shrink it up, then, in spite of my efforts, commenced to enlarge; a new tube was used, and the dose doubled, but unfortunately the whole part sloughed out. Uncontrollable hæmorrhage ensued, which in a few days proved fatal.

Dermatitis; preventive measures.—Considering the prolonged treatment necessary in this class of conditions it is not surprising if we sometimes meet with a dermatitis. In my earlier cases I frequently unwittingly produced a mild dermatitis; we knew less about preventive measures in those days but I am bound to say that some of my best results have had a dermatitis to the extent of dry exfoliation or even slight bullæ. Except in cases where the growth is strictly local, such as epithelioma of the lip, I think it is best not to screen the surrounding parts, so that the rays may reach scattered deposits in the remote tissues. From the knowledge recently gained in the treatment of ringworm by Sabraud's method it is easy so to keep the tubes in a condition that few irritative rays are given off, and although this may unduly prolong the treatment it seems at the present moment to be the best course to pursue. At first I tried a number of substances—aluminium foil earthed, various thicknesses of soft stuffs, clothing, vaseline, and other substances too numerous to mention. My almost immunity from burns to the patient I put down chiefly to the use of medium to hard tubes. Nowadays with the apparatus employed a dermatitis to any extent should be extremely rare and the treatment thereby much curtailed.

Standard dosage.—Would that we could formulate a standard dose as we can in the case of some drugs. At present this appears impossible, but we can only hope that in the near future it will become possible to give an exposure that will produce a definite visible effect. At present we can only compare our work in a very general way, owing chiefly to the divers kind of apparatus in use. The idiosyncrasy of the patient is a factor that cannot be neglected when considering the dosage. My observations lead me to think that fair people burn more quickly than dark and that dark people pigment the more easily. Still it may prove that with increased experience and knowledge of the behaviour of the growth to the x rays and with more regulatable apparatus the idiosyncrasy of the patient will in proportion diminish. With my apparatus as at present arranged one usually finds that a dose of from 3000 to 5000 Röntgen units is

given at each sitting and renewed or increased according to the effect produced. When all is said on behalf of dosage and its measurement, actual experience of the operator is of the first and final importance.

That the pain of malignancy can be much alleviated by x ray treatment is common knowledge among those who have had much experience in this form of treatment. The pain that one sometimes notices in cases where it is obviously due to the dragging or contraction of the scar does not seem to yield so readily as "growth" pain. Pain produced by post-up discharge or the disintegration and liquefaction of the malignant cells can only be relieved by the patient's absorbing powers or by an exit naturally or artificially produced. In uterine cases it is important carefully to distinguish between the period pain and the pain of the growth whilst under treatment. One woman with a cauliflower excrescence of the cervix had had no period for over 14 months prior to the commencement of treatment. In seven weeks with daily applications the growth had disappeared but the whole of the contents of the pelvis were lumpy and matted together. To my great surprise the pain, which had decreased to almost nil, came back with renewed vigour, although the cervix looked perfectly healthy and the excretion was perfectly normal. After eight days I suspended treatment as I thought that the x rays were possibly the cause. The patient returned in a few days with the cheerful intelligence that she was suffering from a copious period, on the cessation of which all pain vanished. Her periods have been most regular since and the parts are gradually assuming their normal condition. There has been no return during the past two years.

Glands.—In the majority of cases that I have had to treat where there was much glandular enlargement it is a curious fact to note that the glands actually infected became of a hardness before they disappeared. One has so often seen the glands depart in such cases that I am led to the conclusion that frequently they are only affected with a simple inflammation from irritation of the secretions of the original growth and not from actual infection. In one patient who had the glands enlarged many months after the breast had been removed and the resulting scar was white and perfect, there were undoubtedly infected, but readily disappeared with a few months' treatment, though this patient succumbed to a recurrence 11 months after, during which time no x rays were applied. In another case, that of a woman, aged 48 years, who had a primary carcinoma of the left mamma, quite two-thirds of the gland was involved and there were many lumps in the axilla which practically filled that space. She had refused any operative measure. Under x rays, administered three times a week for over four months, the lumps cleared up and the breast contained a hard tumour much less than half the whole gland; this was then removed and was proved to be an ordinary cirrhus carcinoma of a very fibroid character. This patient has been since October, 1903, and is at the present time, in excellent health.

I well remember the day on which the evening paper announced Röntgen's brilliant discovery. How at first with a conservatism natural to our profession, we treated it as an exceptionally smart piece of yellow journalism, but within a week we, imperfectly it is true, observed the shadow of the bones in the fingers of our own hand, and our scepticism was turned to astonishment. Proceeding forward we thought it astonishing that some little superficial cancers disappeared, and had not our scepticism received so great a shock about the diagnostic power of the rays we should have been even more sceptical. But the fact remains that most of the little growths can be alleviated by x ray treatment. Who can say how soon in the future with increased knowledge of cancer and of the rays the alleviation of the larger growths may not be attained.

Bedford-square, W.O.

MEDICAL MAGISTRATE.—Mr. Charles Cecil Ballmore, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been added to the commission of the peace for the county of Cornwall.

DEATH OF A CENTENARIAN.—Mrs. Elizabeth Cattle, who celebrated the 103rd anniversary of her birthday on Nov. 24th, 1906, died on Dec. 29th in York, of which city she was a native. About three years ago, on reaching the age of 100 years, she received a sympathetic communication from Queen Alexandra.

TWO CASES OF TRAUMATIC RUPTURE OF THE KIDNEY, IN ONE OF WHICH A SINGLE KIDNEY EXISTED.

BY JAMES GRANT ANDREW, M.O., M.B. GLASG.,
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CASE 1.—The patient, a boy, aged 14 years, was admitted to the Victoria Infirmary, Glasgow, on June 5th, 1906, as an urgent case, on the recommendation of Dr. Andrew Buchanan. The following history is obtained from Dr. Graham's report. 11 days previously the patient fell from a cellar. No very distinct account of how he fell could be obtained, as the boy himself did not remember the accident at all clearly. His father was of opinion that he somehow came against the edge of a stair, his abdomen and its lumbar region apparently receiving the brunt of the impact. Two of the boy's companions assisted him home on his arrival there he looked white and felt faint and complained very much of severe abdominal pain. Shortly after getting home he vomited freely and this continued for several days. The vomit, according to his father, contained food quite distinctly up to two days previously, when retching and vomiting ceased and he seemed to be decidedly better. On the day before admission, however, vomiting recurred and generally the boy looked very ill. All along he had complained of pain in his abdomen and in the right loin more particularly. From the day of the accident there had been a considerable quantity of blood present in the urine, and on the previous day there were several large clots present in it. For the first two days after the accident the quantity of urine passed was very small but he was not catheterised. Since then the daily amount passed had been fairly normal. He had no frequency but the pain during micturition, especially on the day when the clots were passed, had been very severe. The micturitions had been quite normal in colour and there had not been at any time bright red blood present or any melæna.

On admission the patient was very blanched. His pulse was 82, soft and dicrotic, but regular. He complained much of pain on the right side but was not restless or sick, and there was nothing to indicate any active hæmorrhage. Examination of the abdomen showed a very distinct bulging in the right lumbar region, a bluish discolouration appearing through the skin. The swelling extended right forward to the middle line and backwards a short distance from the spine and filled up the whole interval between the lower true ribs and the crest of the ilium. It extended also down into the right iliac region, but did not completely fill up this region, a small interval above Poupart's ligament being clear to percussion; the swelling was extremely tender to touch and fluctuant. The left side of the abdomen was soft to palpation and not tender and there was no evidence of free fluid in the abdominal cavity. There was about one and a half inches of liver dulness in the nipple line and the tumour dulness was not continuous with it. The urine contained a considerable quantity of blood diffused through it and albumen but no pus. He was fairly quiet in the early part of the evening and drank freely on account of his thirst. About 9 P.M. he began to complain more of the pain in his side and his temperature dropped two degrees. He did not complain of faintness or dimness of vision, nor did his pulse rise beyond 97, but he looked as if there had been some fresh hæmorrhage. During the first four hours after admission no vomiting occurred, but between 10 and 11 P.M. he had vomited very freely. There was no blood in the vomit. His bowels moved without any aperient. The motion was hard and of natural colour, but there was a distinct amount of blood clotted round the fecal masses. Within the last hour he had developed a slight cough evidently due to upward pressure on the lung. On June 6th his condition was slightly better, the pulse having dropped slightly. There was, however, a distinct increase in the size of the swelling in the loin and as he was suffering very severe pain he was operated on at once.

Operation.—I made an incision in the lumbar region and divided the muscles down to the perirenal fat; this was separated off with the finger, some blood clot was removed, and a large dark encapsuled swelling presented itself. On separating this all round it was seen that the swelling was

within the kidney, the capsule being enormously distended owing to the effused blood in the kidney substance. A small rent in the capsule was enlarged and the contents of the swelling, blood clot and a slight amount of urine, were evacuated. Iodoform gauze was then packed down into the cavity alongside a thick tube. There was a great deal of bleeding, and stuffing was packed tightly into the wound down to the kidney. The tube was led into a bottle and the kidney was drained. The cavity was very large and it was feared that there was a great deal of disorganisation of kidney substance.

In the evening the patient's pulse remained quick and he complained greatly of thirst but during the night was less restless. The wound was redressed at 11 P.M. He had four saline injections per rectum during the night. On June 7th there was slight improvement in the pulse and temperature. Urine was passed both by the tube and in the natural way and it contained a large amount of blood. On the 14th urine was draining freely into the bottle from the lumbar wound. For the last day and a half he had not passed any urine in the ordinary way; a catheter was passed on the previous day but only a few drachms were drawn off and the bladder was not distended. The urine drawn off was quite clear and did not contain any blood. The temperature had been elevated for several nights but the wound looked fairly well and he was altogether much better. On the 22nd the tube was left out of the lumbar wound. There was considerable drainage on to the dressing. The amount of urine passed naturally was now quite normal. On the 30th the lateral wound was healing up.

On July 9th the urine looked clearer; it contained pus, however, in small quantity, but no blood. On the 30th only a slight discharge of urine could be expressed from the wound. The patient was now passing naturally a fair quantity of urine; pus was still present in small amount.

On August 9th the urine was still improving; there was a slight haze of albumen. The temperature showed a tendency to rise if the sinus was not opened up daily. On the 16th the temperature was slightly raised at night again; no pus was present in the discharge and very little in the urine. On the 30th, for the past few days the temperature had been raised and it was feared that there might be some collection or that some ulceration was in progress in the disorganised organ for some blood reappeared in the urine, but the boy did not otherwise complain. On the 31st he had complained very much all night of pain in the old site. It was evident from his appearance that a fresh hæmorrhage was taking place from the kidney. Examination of the right side showed that there was a swelling present passing forwards towards the middle line very much as on admission. The swelling was very tender and the abdominal wall was rigid on the right side. The rest of the abdomen was clear and there was no fluid within the peritoneum.

On Sept. 1st I performed another operation. Laparotomy by a median incision was done and the kidney region was examined. No kidney on the left side could be discovered; it was therefore out of the question to remove the supposed single kidney on the right side. The abdominal wound was then closed and the original incision on the right side opened afresh. There was a great deal of disorganisation, blood clot and blood removed and it was found that a part of the kidney was much injured. The cavity cleared out, flushed, and a large drainage-tube inserted, packing alongside. Later the patient was transfused, 11 P.M. there was no further evidence of hæmorrhage effects. The urine had been passed in fair quantity both naturally and by the tube. On the 2nd he was very restless and this infection, repeatedly. On redressing the wound no changes of condition in the abdominal condition. On the 3rd the anæsthesia do not passed had greatly diminished and vomiting ceased in their light degrees. The boy died on this day.

Permission was granted only to remove the kidneys suffice to John Anderson, pathologist to the infirmary, by appreciable organ thus: "The specimen is an example of a systemic disease of the kidneys on the right side. There was an anæmia; but at the kidney on the left side, and the solitary kidney having been situated in the right lumbar and right iliac region, conferred on the a trilobed appearance externally, with light degrees of infection middle parts and a smaller lobe at the lower pole. The organ weighed fully eight ounces and is not the case with its measurements are 12 cr. disease does not exist transversely at its mesial parts. Thus it follows that at the poles. There were two degrees of the disease depends on

the extent of immunity obtained prior to infection and upon the degree of infection when it occurs. I might point out incidentally that the definite characteristics of both the degree of resistance and that of the opsonic defect would be transmitted to succeeding generations according to the Mendelian law of transmission.

In the light of present clinical knowledge I shall now briefly sketch the more important defensive mechanisms which are brought into play on the occurrence of an unmixt tuberculous infection of moderate severity in the case of an otherwise healthy (?) adult European. The preliminary defensive mechanisms having been overcome, we have to consider, then, the extent and virulence of the infection on the one hand, and the vital resistance of the individual on the other, whether this be acquired or inherited. The site of infection may be on the mucous membrane of the floor of the buccal cavity or in the region of the tonsils, where the accidental presence of other bacilli among the normal flora of the buccal cavity influences the tubercle bacilli favourably or unfavourably, according as the accidental bacilli are certain pneumococci or streptococci which are congenial to the tubercle bacillus, or others which are not. It is well known in regard to this point that the tetanus bacillus, which is normally anaerobic, will nevertheless proliferate easily under aerobic conditions on a culture medium in company with several common saprophytic organisms, such as the ordinary bacteria of decomposition found in a foul lacerated wound. After adapting themselves to their altered environments in such localities and surviving a definite period of incubation the tubercle bacilli tend to undermine the adjacent structures and to move from their extra-corporeal position to other positions which are intra-corporeal. On the one hand, the opsonins present begin to be expended and a further response is evoked; on the other hand, the mechanisms of phagocytosis and segregation are now simultaneously brought into play by virtue of a leucocytosis in which the lymphatic system is mainly concerned. There are evidences of a hyperemia at the site of infection, elevation of the normal bodily temperature, and a fall and rise of the opsonic index, according to the fundamental laws laid down by Sir A. E. Wright. A migration of at least two types of leucocytes takes place in the vicinity of the infection—one of these being concerned with the formation of neoplastic encapsulating tissue for the purpose of segregation and the other type with the carrying on of phagocytosis. With reference to this action it is conceivable that the phagocytes deal with the more advanced and scattered bacilli, especially those that are opsonised, while the other type surround those that are massed together so as to form the tubercles or localised foci and keep them inclosed pending the development of further opsonins and incitor elements.

The expenditure and generation of opsonins depends (1) upon the regulation and degree of mobility of the invading forces; (2) upon the rate and efficiency of the segregations; and (3) upon their location, whether they are in or near to highly vascular tissues (where they are more accessible to the leucocytes) or in remote, less vascularised tissues. The tissues of the adult, being more organised and dense, offer a greater obstacle to the migration of leucocytes in unwonted directions, but the less organised tender tissues of the infant are more permeable. Phagocytosis having been completely effected after opsonisation, and encapsulation established, the acute stage of the malady is tided over and the more subtle, chronic stage of convalescence sets in. Where the encapsulating tissues contain opsonised bacilli only these bacilli probably undergo degeneration and die and if the encapsulating tissues be not too dense to permit of the slow liberation and diffusion of their toxins a stimulus to incitor elements is produced and the phagocytes are incited to penetrate those foci from which they do not emerge again, but the contents of which they neutralise, so forming pus. But there may also be some active foci, the bacilli in which have escaped opsonisation previously to encapsulation; these in due course proliferate and subsequently emerge on moderate bodily exertion, causing auto-inoculations, probably before the system has had time to recuperate from its losses and an exacerbation of the malady occurs. To meet this contingency, however (if the suggestions implied by Dr Paterson be sound), *pari passu* with the phenomena described above, an elaboration of a tuberculo-tropic and antimicrobial vaccine has taken place in the lymphatic glands corresponding to the sites of the original infection. At this stage of the malady these glands are densely, and

therefore more or less imperviously, encapsulated in the neoplastic tissues. These glands having performed this important function now cease to act and become degenerated and cased. The afferent and efferent vessels are blocked within and constricted without. The egress of this substance into the circulation is thus barred when it is most needed and recovery depends on its regulated or accidental admission into the circulation. After the surgical removal of certain tuberculous glands we may find in the unintentional vaccination thus effected an explanation for the occasional disappearance of tuberculous symptoms. This action is similar to the case of certain intra abdominal suspiciously cancerous tumours with glandular involvement, where, after opening the peritoneal cavity, the tumour mass for certain reasons has been left without further operative procedure and in a remarkable manner has been known to disappear subsequently. I merely offer these suggestions on the grounds of the high potency of an almost infinitesimal quantity of such vaccine, where present in the lymphatic system, and the possibility of its accidental admission into the circulation.

It is the purpose of this paper to attempt to demonstrate the theory that the mechanism of the therapeutics of x rays rests upon the induction of an auto-vaccination, subsequent to the resolvent action of the x rays on the rudimentary neoplastic encapsulating tissues about the tuberculous glands, thus rendering the vaccine accessible to the bloodstream. It will also be shown how its effects may be observed by minute temperature reactions, accompanied by similar advances in the opsonic index without negative phases, tested by the periodic estimation of the opsonic index to tubercle bacillus. As a preliminary it will be advisable to give some general account of the effects of x rays upon normal and abnormal tissues.

The x rays are known to have a special selective affinity for morbid tissues, independently of their position or of any inflammatory reaction. This selective action on morbid tissue may proceed without any signs of irritation or any apparent modification of the skin. The dose necessary for the production of an alopecia will naturally be less than that required for the destruction of the granulation tissue of an epithelioma. In the use of other therapeutic agents we are often obliged to vary the dose. A given drug may have a tonic action in a small dose, an emetic action in a moderate dose, and a poisonous action in a large dose. The same may be said of the x rays. Take, for example, their action on the scalp. In small fractional doses they have a stimulating effect on the hair, producing an action similar to that of a rubefacient lotion; whereas in large doses they cause epilation, and in still larger doses vesiculation, ulceration, and sloughing. Again, it is well known that certain drugs have a tendency to accumulate in the system and that in this way minute doses frequently repeated may produce serious results. To some extent this also is true of the x rays when frequently repeated doses are applied over the same spot, but not when these doses are distributed over the body, seeing that the locally absorbed ions are not influenced by the general circulation.¹

Many authorities both in this country and abroad have studied, post mortem, the microscopic appearances of morbid tissues that have during life been subjected therapeutically to the action of x rays, and they have sought to establish the mechanism of its curative effects.

In regard to the therapeutics of x rays Dr. H. Lewis Jones² says, "The gradual onset (of radio-dermatitis) after a latent period, suggests that the lesion (x-ray dermatitis) is a tropho-neurotic one due to the damage sustained by the superficial nerves of the part;" and again later he says, "It will be noticed that nothing is here given on the appearances presented by cutaneous nerves, and this is probably an omission of importance."

Schwartz, working in Holzknecht's laboratory, has further pointed out that the x rays decompose the lecithin in the neurolemma of the nerve filaments, producing meth-lamin. The inference would therefore be that primarily the nerve filaments are acted upon, producing a paresis of the capillaries, followed by a passive hyperemia, and that secondarily an analgesia, and finally a necrosis, follow, with the usual line of demarcation, according to the quantity and the quality of the x rays applied. The subsequent processes of repair, depending on the rate of regeneration of the trophic nerve filaments, are naturally very slow and tedious.

¹ Delor's Radiotherapy.

² Medical Electricity, fourth edition, p. 476.

Dr. J. Belot³ states in regard to lupus after irradiation: "The following is apparently the mechanism of cure by radiotherapy: the hyperemia set up by the x rays provokes an abundant migration of leucocytes from the vessels. As may be seen after a tuberculin (sic) injection, the leucocytic infiltration commences at the periphery of the tubercular focus and penetrates by narrow tracks into the substance of the lupus nodules, these leucocytes being ultimately transformed into fusiform cells and fibrous connective tissues. The presence of these fusiform cells bears witness to the active proliferation of connective tissue. The lupus cells degenerate by vacuolization; the nuclei lose their affinity for stains, necrose, and become absorbed, the diseased tissue being replaced by cicatricial growth. As Schwartz has shown, *all idea of bactericidal action falls to the ground*. The most important point in the case of lupus is the localization of the inflammatory reaction and its concentration exactly at the diseased point, in consequence of the degeneration of the lupus nodules themselves. Both Schwartz and Neisser pointed out that there is in this respect a resemblance between the action of x rays and that of tuberculin, which also sets up inflammatory phenomena that are concentrated on the tuberculous nodules."

It is well known that all neoplastic tissue is a rudimentary replica, almost in every detail, of the tissue affected, and that such tissues are highly susceptible to the influence of x rays and of the less penetrating cathode rays. These stop short of damage to the normal and more organized tissues,

It was at this time that my attention was drawn to Dr. Paterson's article. Shortly afterwards another of the cases of enlarged tuberculous glands came up for treatment and I was enabled by the kindness of Dr. W. E. Facey and Mr. A. B. Bailey of Christchurch to have the patient's opsonic index estimated previously to, and during, a series of irradiations by the x rays.

The patient was a single woman, aged 27 years, an only daughter, both of whose parents were living and well. Her childhood had been spent in London where she had acquired continuous throat trouble and inflammation of both tonsils, which had been partially removed at the age of 11 years. She had suffered much from anæmia as a girl and also from bronchitis and loss of appetite. The patient first came under my medical observation in April, 1906, suffering from moderate constipation. In the month of August following she drew my attention to certain glandular swellings in the neck, more noticeable on the right than on the left side. She had been steadily losing weight during the previous six months. Her record weight had been 9 stones 8 pounds, and she was now 8 stones 2 pounds; her height was 5 feet 4 inches. The body, not so well nourished, but not emaciated, gave the appearance of one in ordinary good health. The temperature had remained subnormal for some months, ranging from 96° to 98° F. The patient's habits were inactive and she was easily fatigued but there were no further symptoms of constitutional disease traceable. The opsonic index to tubercle

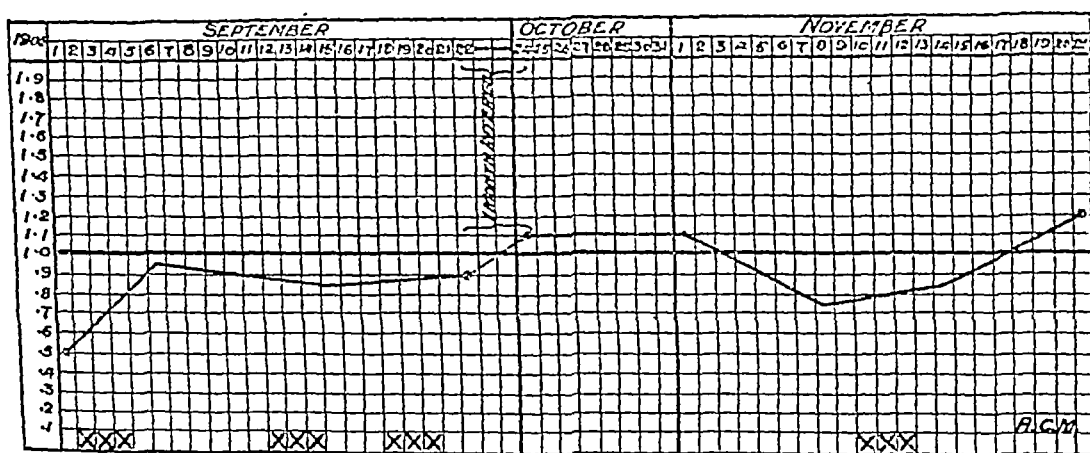


Chart showing the variations in the opsonic index.

when they are judiciously applied, and they restore metabolism where it has more or less come to a standstill.

So much, then, for the therapeutic action of the x rays on the normal and abnormal tissues. I now proceed to give cases occurring lately in my own practice upon which the theory of this paper is based. I wish to remark that during the past two years I have utilised these effects of the x rays solely with a view to restoring the natural contour and to removing the disfigurement in females and males in such situations as the cervical, peribronchial and mediastinal regions. In the last case a mass of glands to the left of the sternum had produced an "aneurysmal" bulging of the third, fourth, and fifth sterno costal cartilages and marked cardiac displacement, &c. The invariable results, I need hardly add, were a disappearance of the swellings after alternate soft swellings and shrinkings. Mild toxæmias in the intervals, as one would anticipate, without appreciable rises of temperature, more marked, however, in the mediastinal case, did occur. No symptoms of re-infection were encountered, and, from what has been above stated, this bogey need not be apprehended, except in early acute cases. On the other hand, these cases almost always without exception gained very appreciably in weight and improved in their general health in a remarkable manner. I became curious to explain this fact and as none of their opsonic indices had been estimated it occurred to me that Dr. Paterson's suggestion might account for it.

bacilli on Sept. 1st was 0.5, with brief irradiations on the 2nd, 4th, and 6th; on the 6th it was 0.95, with brief irradiations on the 12th, 13th, and 14th; on the 16th, 0.82, with slight skin reaction and with brief irradiations on the 18th, 19th, and 20th; on the 22nd, 0.90 (the patient had returned after a visit to London); on Oct. 26th, 1.11; on Nov. 1st, 1.09 (the patient throughout the previous day had taken an active part in a bazaar); on the 7th, 0.72, with irradiations on the 10th, 11th, 12th, and 13th; on the 14th, 0.82; and on the 22nd, 1.2. During this period a gain in weight of 9½ pounds took place and a general improvement in health with the disappearance to external observation of the glands in the neck. The temperature had ranged between 97° and 99°, each irradiation being followed by a rise of from 0.5° to 1° in temperature. In the intervals of the irradiations the glands softened, swelled, and shrank, with tenderness on pressure, until they disappeared.

This case is not considered cured nor as yet completed, but the technique necessary for continuing to obtain the opsonic index in this, or in a number of cases, necessarily has its limitations, owing to the expense incurred in obtaining the opsonic index, a matter of about £20 in each case. This method can therefore only be employed in occasional cases where further proof of this important effect of treatment by the x rays may be desired.

The limitation of the phases of the opsonic curve within narrow and normal limits—the entire absence of negative phases, and finally, the minute range of the temperature

³ Radiotherapy, p. 307.

reactions go far, in the opinion of the writer of this paper, to render his theory worthy of consideration.

The radio-therapeutic technique, with radiosometric chart, I propose submitting in due course to *Medical Electricity and Radiology*, in the October number of which journal a significant article from the pen of Dr. H. B. Wilkinson, physician in charge of the San Lazaro Hospital, Manila, appears in an abstract, under the title "The Treatment of Leprosy with the X Rays," to which I would direct the attention of those interested in advanced therapeutics. Of this I will quote one sentence: "Another case was well after 14 treatments. The writer is inclined to believe that when a local lesion of leprosy is treated with the x rays the organisms there localised are killed, and their bodies are absorbed into the system, thereby producing an immunity of the system against the living organisms."

Holzkecht says: "The cure of an infective process is not due to any bactericidal action of the x rays, since the bactericidal dose is many times as great as the curative dose." This theory in regard to the mechanism of x rays is quite compatible with the theory of the parasitic origin of cancer. "Skinner has given a detailed résumé of the hypotheses put forward to explain the cure of malignant tumours by the x rays. According to the third hypothesis cancer is a parasitic disease, and the x rays destroy or hinder the development of the parasites. It may be, however, that the x rays are not destructive to the parasite itself, but in some way modify the tissues so as to prevent its development."

In this reference, Dr. G. H. A. Clowes of the New York State Cancer Laboratory, in his article entitled "A Study of the Influence exerted by a Variety of Physical and Chemical Forces on the Virulence of Carcinoma in Mice" states: "That immune forces are produced in the serum in gradually increasing quantities as the tumour progresses is indicated by the tendency frequently exhibited by tumours to remain stationary, after fairly rapid development, and then subsequently either to grow rapidly or retrogress. In this connexion it must be noted that x rays produce a much more marked effect at this stage, at which apparently the tumour (?) has quite overcome the natural immunity of the mouse, and is developing rapidly."

Dr. Belot thus sums up: "In conclusion, we may say that the x rays exercise a special action on certain cancerous cells, causing their degeneration and absorption, but that the mechanism of the action is still unknown."

I am tempted by the obvious therapeutic parallelism in the recently reputed medicinal agents in cancer to enter into their probable therapeutic values as recorded in the experience of others. I refer to papain, trypsin, and amylopsin, but I will only add that these enzymes, when injected in emulsion into the encapsulating tissues where metabolism has come to a standstill, bring about active resolution (if veins are avoided) by virtue of their proteolytic and diastatic properties on those tissues, when the lesions are accessible and not too deeply situated. They may thus liberate the vaccine when present in the lymphatic glands with the desired result if they do not influence it unfavourably by admixture before neutralisation.

Clinical experience is greatly in advance of the theories hitherto put forward, and I am not in a position at present to make manifest the above theory "by columns of figures and percentages of calculations of cures." I merely venture to submit these observations in the hope that if confirmed by those who have the necessary facilities for working in this department of therapeutics they will afford a solid basis for the scientific employment of radiotherapy, as well as for the proper classification of those conditions in which its use is indicated, and a most important field of medication will thus be opened up among those chronic ailments which occur after middle life and in which ordinary therapeutic measures have so far failed.

Boarnemouth

* Belot's Radiotherapy.
 5 Brit. Med. Jour., Dec. 1st, 1906, p. 1553.

TRACHEOTOMY IN SLIGHT RESPIRATORY OBSTRUCTION ASSOCIATED WITH FEBRILE TOXÆMIA.

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In fever practice there is a type of case occasionally encountered in which toxæmia is accompanied by very slight—apparently inconsiderable—obstruction of respiration. Cases of this kind are perhaps commonest in septic scarlet fever with swelling in the faucial region and the naso-pharynx, possibly with some degree of septic laryngitis. A somewhat similar condition, however, is now and then seen in small-pox; one case of this type occurred at Dagenham Hospital during the last epidemic in London. The laryngitis caused a slight degree of obstruction which, owing to the enfeebled state of the patient, soon began to tell on his cardiac condition. Tracheotomy was performed; it was followed by a remarkable improvement and the patient recovered. There is also a septic type of diphtheria defined by Monti in which the larynx is but little affected; there is slight obstruction but it is not progressive and the patient apparently goes downhill as a result of the toxæmia alone. Some years ago, in a case at Plaistow Hospital, the question arose whether the patient's steady loss of ground might not be in part the result of very slight respiratory obstruction—strain on the respiratory muscles and deficiency of oxygen. The result of tracheotomy was a striking improvement in the condition of the patient with ultimate recovery where it seemed hardly possible. In consequence of this result it was laid down as a principle that no patient with slight respiratory obstruction should be allowed to die without tracheotomy having been resorted to. From time to time such cases have occurred at Plaistow Hospital; some of them have been under my care, and it may be of service in calling attention to a procedure so far not emphasised in medical literature. Its importance cannot be measured by the frequency of the cases in which it applies, because when such cases do occur they are of a grave nature, and the operation, as I hope to show, is sometimes life-saving.

INDICATIONS FOR OPERATION.

The indications for tracheotomy in the type of case under consideration are:—

1. *Difficult breathing.*—Owing to the intense congestion of the fauces and the profuse muco-purulent discharge from the naso-pharynx insufficient air reaches the lungs. The patient may breathe with the mouth open and the lower jaw often drops during each inspiration. The breathing is noisy owing to gurgling of the accumulated discharge in the pharynx, stridor being seldom present. The respirations are usually increased in frequency and the *alve nasi* are brought into action; this increase in frequency is not marked and as in definite laryngeal obstruction the respirations may be slower than one might expect from the height of the temperature and the rapidity of the pulse. Apart from the swelling in the pharyngeal region there is not uncommonly marked lymphadenitis on both sides of the neck; this is often accompanied by œdema and even in some cases by an acute inflammation of the subcutaneous tissues of the neck; the result may then be pressure on the trachea, an exceptional indication for operation. It is necessary to lay stress on the fact that the obstruction is usually extremely slight and that *a priori* there might seem little hope of material benefit from operation. It would appear, however, that it is its duration, possibly extending to several days, which tells on the general condition and, especially, puts a strain on the heart.

2. *Restlessness.*—This is partly due to the difficult breathing; the patient is often delirious or semi-conscious and does not seem to realise that his respiration is laboured, yet he may appear obviously distressed. He often tosses about uneasily, pushes away the bed-clothes, and sometimes tries to sit up. He may be unable to sleep, sedatives having very little effect. The condition is, of course, one that must tell on the already toxin-weakened—perhaps partly asphyxiated—heart. The distress often increases considerably when the patient attempts to drink or during applications to the throat and nose. At such times there may be coughing, return of fluid through the nose, cyanosis, exhaustion so great that treatment has to be stopped, feeding by the mouth discontinued, and rectal feeding resorted to.

BRITISH ELECTRO-THERAPEUTIC SOCIETY.—The annual general meeting of this society will be held at 11, Chandos-street, Cavendish-square, W., to-day (Friday, Jan. 25th) at 8.30 P.M., when the election of officers of the society for 1907 will take place. Mr. J. Hall-Edwards, the retiring president, will deliver an address.

3. *Recession.*—There is sometimes recession of the epigastrium during inspiration, especially in very young children. It is then accompanied by retraction of the lower intercostal spaces, but it is never extreme as in cases of laryngeal diphtheria. Usually the recession is very slight or even absent. When it is not marked it can often be more easily appreciated by placing the hand on the lower part of the chest.

4. *Condition of the heart.*—The strain placed on the heart by the continued, although slight obstruction is the most important factor in the unfavourable drift of such cases. The heart responds for a time by over-action—often apparent when the hand is placed over the precordial region. But enfeebled and probably receiving insufficient oxygen it sooner or later begins to fail; the first sign noticed may be a slight diminution in the force of beat during inspiration—an interesting fact in view of the small degrees of obstruction. Thereafter, if the obstruction remains unrelieved the heart becomes gradually weaker and the patient dies from heart failure.

5. *Condition of the pulse.*—The pulse is at first full and rapid; it soon increases in rate and becomes weaker. This difference in volume may at first only be marked during inspiration, and in some cases there may even be a typical *pulsus paradoxus*—a sign of extreme gravity in the absence of surgical interference.

6. *Colour of the face.*—In most cases the colour is not much altered; there may be slight lividity about the mouth and nose; occasionally the lips are rather blue but definite cyanosis is rare.

7. *Septic laryngitis.*—In most cases more or less septic laryngitis is present but it seldom in itself calls for operation; in one case of the present series (Case 3) laryngeal symptoms with signs of obstruction developed at the end of the second week and were due to extension of the septic process to the larynx.

Apart from these cases, tracheotomy has been done in one or two instances for hæmorrhage from the naso-pharynx in which plugging of the posterior nares did not arrest the bleeding. The operation was done as a last resource and the bleeding checked by plugging the pharynx.

One weighty consideration in favour of operation is that the drift of the case is towards death. The improvement within a few hours, especially in the cardiac condition, is remarkable, and this is true even of cases which ultimately die from the general severity of the attack. Considering the severity of the cases, it is to be expected that in spite of temporary improvement death will sometimes occur.

OPERATION.

In spite of the marked improvement these cases show after tracheotomy there are certain points which should be considered before it is undertaken, as owing to the exhausted state of the patient a special element of danger enters into it.

1. *Anæsthetic.*—The question of the anæsthetic is often a serious one. The patients are usually in such an exhausted condition that very little of any anæsthetic should be given. Often it will be better to operate under local anæsthesia; if a general anæsthetic is used, ethyl chloride is in my experience satisfactory.

2. *Condition of the neck.*—Owing to the swelling and œdema of the tissues of the neck the operation may be a little more difficult; the trachea will not be so easily felt, especially in young and fat children.

3. *Hæmorrhage.*—This is the principal danger of the operation. In septic conditions there is always a certain tendency to bleeding; there may be more or less epistaxis, the lips and mouth become ulcerated and bleed easily, and if a wound is made oozing tends to continue even when all vessels of any size are tied; forcible pressure therefore is, as a rule, inefficient. The only resource is to plug the wound tightly around the tube. Adrenalin may be used if necessary but should be avoided if possible; it has been thought lately that in a few cases in which it had been used it increased the dryness of the trachea below the tube and gave rise to considerable trouble during the after-treatment. Styptics which coagulate blood should also be avoided, as they may induce clotting of the blood inside the trachea; fatal obstruction has resulted.

4. *Method.*—The usual method of operation in this hospital for cases of laryngeal diphtheria is the high rapid tracheotomy done with a small incision. It is performed in two steps: one downward incision through the skin and subcutaneous

tissues and one upwards through the upper two or three rings of the trachea. No stitches or ligatures are necessary in ordinary cases, as there is, as a rule, very little bleeding. This is the method generally used in the cases under consideration, and in these when troublesome oozing occurs it may be advisable to enlarge the wound and seek for bleeding points, but experience shows that such bleeding is nearly always controlled by plugging. The only cases in which the slow method with a long incision has a definite claim is when swelling and œdema of the neck make it difficult to incise and enter the trachea.

5. *Tubes.*—Parker's tubes are usually employed; Durham's lobster tail tubes are, however, very serviceable when there is much swelling, as the stem is longer and the moveable plate can be adapted to the neck. It is preferable to use as large a tube as possible (i.e., a No. 3 Parker for a child of two years); the advantage is that a wide tube will not get blocked so easily with the profuse thick mucus which is coughed through it. The length of time that the tube will have to be worn varies, but it is better to leave it until the throat is quite clean and no discharge passes through it. The outer tube is taken out once or twice a day to be sterilised and if it cannot be dispensed with by the fifth morning a rubber tube is substituted.

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Almost at once restlessness diminishes, respiration becomes quite free, and the patient tends to sleep. The pulse also shows definite—often very striking—improvement. A fall of temperature within the first few hours is common; it is often followed by a rise and the temperature may then be even higher than before the operation, but it usually comes down within three days. This immediate post-operative fall of temperature was noticed in seven cases of the present series. One marked advantage of the operation is that afterwards the treatment of the nose and throat is very much facilitated. The throat may be swabbed and the nose sprayed without causing any distress or discomfort to the patient.

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Remarks.—The degree of obstruction in this case was far less than that which ordinarily determines tracheotomy and the operation was only undertaken as a last resource in an apparently hopeless case. The total dose of antitoxin given was very large, the case having occurred at a time when maximum doses were used for severe laryngeal cases and also in mixed cases. The antitoxin was given on the mere probability that the larynx and the passages beyond might be involved in the diphtherial process. As already stated, this diagnosis proved correct.

CASE 2.—A boy, aged one year, was admitted with scarlet fever and diphtheria on April 6th, 1904, on what was said to be the second day of the disease. There was a slight rash on the body and the pharynx was very congested. The tonsils were covered with membrane. There was profuse discharge from the nose and adenitis was present on both sides of the neck. The temperature was 102° F., the pulse was 168, and the respirations were 44. 20,000 units of antitoxin were injected subcutaneously. On the third day the temperature rose to 105° and the respirations became more rapid. The child refused to be fed by the mouth and nasal feeds had to be resorted to, but it soon became impossible to pass the nasal catheter as it caused so much distress and

reactions go far, in the opinion of the writer of this paper, to render his theory worthy of consideration.

The radio-therapeutic technique, with radiosometric chart, I propose submitting in due course to *Medical Electrology and Radiology*, in the October number of which journal a significant article from the pen of Dr. H. B. Wilkinson, physician in charge of the San Lazaro Hospital, Manila, appears in an abstract, under the title "The Treatment of Leprosy with the X Rays," to which I would direct the attention of those interested in advanced therapeutics. Of this I will quote one sentence: "Another case was well after 14 treatments. The writer is inclined to believe that when a local lesion of leprosy is treated with the x rays the organisms there localised are killed, and their bodies are absorbed into the system, thereby producing an immunity of the system against the living organisms."

Holzknacht says: "The cure of an infective process is not due to any bactericidal action of the x rays, since the bactericidal dose is many times as great as the curative dose." This theory in regard to the mechanism of x rays is quite compatible with the theory of the parasitic origin of cancer. "Skinner has given a detailed *résumé* of the hypotheses put forward to explain the cure of malignant tumours by the x rays. According to the third hypothesis cancer is a parasitic disease, and the x rays destroy or hinder the development of the parasites. It may be, however, that the x rays are not destructive to the parasite itself, but in some way modify the tissues so as to prevent its development."

In this reference, Dr. G. H. A. Clowes of the New York State Cancer Laboratory, in his article entitled "A Study of the Influence exerted by a Variety of Physical and Chemical Forces on the Virulence of Carcinoma in Mice" states: "That immune forces are produced in the serum in gradually increasing quantities as the tumour progresses is indicated by the tendency frequently exhibited by tumours to remain stationary, after fairly rapid development, and then subsequently either to grow rapidly or retrogress. In this connexion it must be noted that x rays produce a much more marked effect at this stage, at which apparently the tumour (?) has quite overcome the natural immunity of the mouse, and is developing rapidly."

Dr. Belot thus sums up: "In conclusion, we may say that the x rays exercise a special action on certain cancerous cells, causing their degeneration and absorption, but that the mechanism of the action is still unknown."

I am tempted by the obvious therapeutic parallelism in the recently reputed medicinal agents in cancer to enter into their probable therapeutic values as recorded in the experience of others. I refer to papain, trypsin, and amylopsin, but I will only add that these enzymes, when injected in emulsion into the encapsulating tissues where metabolism has come to a standstill, bring about active resolution (if veins are avoided) by virtue of their proteolytic and diastatic properties on those tissues, when the lesions are accessible and not too deeply situated. They may thus liberate the vaccine when present in the lymphatic glands with the desired result if they do not influence it unfavourably by admixture before neutralisation.

Clinical experience is greatly in advance of the theories hitherto put forward, and I am not in a position at present to make manifest the above theory "by columns of figures and percentages of calculations of cures." I merely venture to submit these observations in the hope that if confirmed by those who have the necessary facilities for working in this department of therapeutics they will afford a solid basis for the scientific employment of radiotherapy, as well as for the proper classification of those conditions in which its use is indicated, and a most important field of medication will thus be opened up among those chronic ailments which occur after middle life and in which ordinary therapeutic measures have so far failed.

Bournemouth.

⁴ Belot's Radiotherapy.
⁵ Brit. Med. Jour., Dec. 1st, 1906, p. 1553.

TRACHEOTOMY IN SLIGHT RESPIRATORY OBSTRUCTION ASSOCIATED WITH FEBRILE TOXÆMIA.

By A. O. BISSON, M.R.O.S. ENG., L.R.C.P. LOND.,
JUNIOR ASSISTANT MEDICAL OFFICER, PLAISTOW FEVER HOSPITAL.

IN fever practice there is a type of case occasionally encountered in which toxæmia is accompanied by very slight—apparently inconsiderable—obstruction of respiration. Cases of this kind are perhaps commonest in septic scarlet fever with swelling in the faucial region and the naso-pharynx, possibly with some degree of septic laryngitis. A somewhat similar condition, however, is now and then seen in small-pox; one case of this type occurred at Dagenham Hospital during the last epidemic in London. The laryngitis caused a slight degree of obstruction which, owing to the enfeebled state of the patient, soon began to tell on his cardiac condition. Tracheotomy was performed; it was followed by a remarkable improvement and the patient recovered. There is also a septic type of diphtheria defined by Monti in which the larynx is but little affected; there is slight obstruction but it is not progressive and the patient apparently goes downhill as a result of the toxæmia alone. Some years ago, in a case at Plaistow Hospital, the question arose whether the patient's steady loss of ground might not be in part the result of very slight respiratory obstruction—strain on the respiratory muscles and deficiency of oxygen. The result of tracheotomy was a striking improvement in the condition of the patient with ultimate recovery where it seemed hardly possible. In consequence of this result it was laid down as a principle that no patient with slight respiratory obstruction should be allowed to die without tracheotomy having been resorted to. From time to time such cases have occurred at Plaistow Hospital; some of them have been under my care, and it may be of service in calling attention to a procedure so far not emphasised in medical literature. Its importance cannot be measured by the frequency of the cases in which it applies, because when such cases do occur they are of a grave nature, and the operation, as I hope to show, is sometimes life-saving.

INDICATIONS FOR OPERATION.

The indications for tracheotomy in the type of case under consideration are:—

1. *Difficult breathing.*—Owing to the intense congestion of the fauces and the profuse muco-purulent discharge from the naso-pharynx insufficient air reaches the lungs. The patient may breathe with the mouth open and the lower jaw often drops during each inspiration. The breathing is noisy owing to gurgling of the accumulated discharge in the pharynx, stridor being seldom present. The respirations are usually increased in frequency and the *alae nasi* are brought into action; this increase in frequency is not marked and as in definite laryngeal obstruction the respirations may be slower than one might expect from the height of the temperature and the rapidity of the pulse. Apart from the swelling in the pharyngeal region there is not uncommonly marked lymphadenitis on both sides of the neck; this is often accompanied by oedema and even in some cases by an acute inflammation of the subcutaneous tissues of the neck; the result may then be pressure on the trachea, an exceptional indication for operation. It is necessary to lay stress on the fact that the obstruction is usually extremely slight and that *a priori* there might seem little hope of material benefit from operation. It would appear, however, that it is its duration, possibly extending to several days, which tells on the general condition and, especially, puts a strain on the heart.

2. *Restlessness.*—This is partly due to the difficult breathing; the patient is often delirious or semi-conscious and does not seem to realise that his respiration is laboured, yet he may appear obviously distressed. He often tosses about uneasily, pushes away the bed-clothes, and sometimes tries to sit up. He may be unable to sleep, sedatives having very little effect. The condition is, of course, one that must tell on the already toxin-weakened—perhaps partly asphyxiated—heart. The distress often increases considerably when the patient attempts to drink or during applications to the throat and nose. At such times there may be coughing, return of fluid through the nose, cyanosis, exhaustion so great that treatment has to be stopped, feeding by the mouth discontinued, and rectal feeding resorted to.

BRITISH ELECTRO-THERAPEUTIC SOCIETY.—The annual general meeting of this society will be held at 11, Chandos-street, Cavendish-square, W., to-day (Friday, Jan. 25th) at 8.30 p.m., when the election of officers of the society for 1907 will take place. Mr. J. Hall-Edwards, the retiring president, will deliver an address.

3. *Recession.*—There is sometimes recession of the epigastrium during inspiration, especially in very young children. It is then accompanied by retraction of the lower intercostal spaces, but it is never extreme as in cases of laryngeal diphtheria. Usually the recession is very slight or even absent. When it is not marked it can often be more easily appreciated by placing the hand on the lower part of the chest.

4. *Condition of the heart.*—The strain placed on the heart by the continued, although slight obstruction is the most important factor in the unfavourable drift of such cases. The heart responds for a time by over-action—often apparent when the hand is placed over the precordial region. But enfeebled and probably receiving insufficient oxygen it sooner or later begins to fail; the first sign noticed may be a slight diminution in the force of beat during inspiration—an interesting fact in view of the small degrees of obstruction. Thereafter, if the obstruction remains unrelieved the heart becomes gradually weaker and the patient dies from heart failure.

5. *Condition of the pulse.*—The pulse is at first full and rapid; it soon increases in rate and becomes weaker. This difference in volume may at first only be marked during inspiration, and in some cases there may even be a typical pulsus paradoxus—a sign of extreme gravity in the absence of surgical interference.

6. *Colour of the face.*—In most cases the colour is not much altered; there may be slight lividity about the mouth and nose; occasionally the lips are rather blue but definite cyanosis is rare.

7. *Septic laryngitis.*—In most cases more or less septic laryngitis is present but it seldom in itself calls for operation; in one case of the present series (Case 3) laryngeal symptoms with signs of obstruction developed at the end of the second week and were due to extension of the septic process to the larynx.

Apart from these cases, tracheotomy has been done in one or two instances for hæmorrhage from the naso-pharynx in which plugging of the posterior nares did not arrest the bleeding. The operation was done as a last resource and the bleeding checked by plugging the pharynx.

One weighty consideration in favour of operation is that the drift of the case is towards death. The improvement within a few hours, especially in the cardiac condition, is remarkable, and this is true even of cases which ultimately die from the general severity of the attack. Considering the severity of the cases, it is to be expected that in spite of temporary improvement death will sometimes occur.

OPERATION.

In spite of the marked improvement these cases show after tracheotomy there are certain points which should be considered before it is undertaken, as owing to the exhausted state of the patient a special element of danger enters into it.

1. *Anæsthetic.*—The question of the anæsthetic is often a serious one. The patients are usually in such an exhausted condition that very little of any anæsthetic should be given. Often it will be better to operate under local anæsthesia; if a general anæsthetic is used, ethyl chloride is in my experience satisfactory.

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tissues and one upwards through the upper two or three rings of the trachea. No stitches or ligatures are necessary in ordinary cases, as there is, as a rule, very little bleeding. This is the method generally used in the cases under consideration, and in these when troublesome oozing occurs it may be advisable to enlarge the wound and seek for bleeding points, but experience shows that such bleeding is nearly always controlled by plugging. The only cases in which the slow method with a long incision has a definite claim is when swelling and œdema of the neck make it difficult to incise and enter the trachea.

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Remarks.—The degree of obstruction in this case was far less than that which ordinarily determines tracheotomy and the operation was only undertaken as a last resource in an apparently hopeless case. The total dose of antitoxin given was very large, the case having occurred at a time when maximum doses were used for severe laryngeal cases and also in mixed cases. The antitoxin was given on the mere probability that the larynx and the passages beyond might be involved in the diphtherial process. As already stated, this diagnosis proved correct.

CASE 2.—A boy, aged one year, was admitted with scarlet fever and diphtheria on April 6th, 1903, on what was said to be the second day of the disease. There was a slight rash on the body and the pharynx was very congested. The tonsils were covered with membrane. There was profuse discharge from the nose and adenitis was present on both sides of the neck. The temperature was 102° 8° F., the pulse was 168, and the respirations were 44. 20,000 units of antitoxin were injected subcutaneously. On the third day the temperature rose to 105° and the respirations became more rapid. The child refused to be fed by the mouth and nasal feeds had to be resorted to, but it soon became impossible to pass the nasal catheter as it caused so much distress and

the child had to be fed by the rectum. On the sixth day the breathing was more laboured, there was slight recession, and the pulse was more rapid and softer. Tracheotomy was performed. Immediately afterwards the respirations became slower and easier and the temperature came down from 103.8 to 100.6°; it rose again, however, to 114.4° before death, which occurred 13 hours after the operation.

CASE 3.—A boy, aged four years, was admitted with scarlet fever on April 27th, 1904, on the fifth day of the disease. On admission the body was covered with a characteristic rash; the tonsils were swollen and covered with a thin yellowish exudate but there was no nasal discharge. The temperature was 103° F., the pulse was 136 and the respirations were 38. The condition of the throat improved slightly during the first few days, but on May 10th a laryngeal cough and stridor developed. The possibility of membranous croup was practically excluded as the child had received a prophylactic dose of antitoxin on the day of admission. The obstruction was only slight, but as it was beginning to tell on the general condition of the child intubation was tried; only partial relief followed and tracheotomy had to be done. It was evident that the obstruction was due to septic laryngitis; the relief which followed the operation was complete. The tube was removed on the third day and the child was quite comfortable without it, but as the wound began to close the distress returned and four days later the wound had to be reopened and a rubber tube inserted. This tube had to be worn for several weeks and each time it was removed the child became very distressed. His condition improved very much until June 6th when signs of pleuro-pneumonia on the left side of the chest appeared. Ten ounces of fluid were aspirated on the following day, but it collected again and became purulent. The empyema was opened and drained on June 10th. The child slowly recovered from this complication and when strong enough was allowed to get up. He was then still wearing his rubber tracheotomy tube. On Sept. 16th it was removed and the child was intubated with a No. 1 metal tube; this one was worn until Sept. 25th; it was removed every fourth day for cleaning purposes and replaced. On the 26th a No. 2 tube was inserted and was worn until Oct. 9th. Between that day and the 16th the tube was repeatedly coughed up, on one occasion three times in half an hour, and as each time the child could not breathe comfortably for more than a few minutes a second tracheotomy was performed on the 16th. During the time that he was intubated he was able to take solid food by the mouth but fluids had to be given with the nasal catheter. On Nov. 3rd the child contracted diphtheria; it attacked the tracheotomy wound, involved the trachea, and rapidly spread to the bronchi. The patient died on Nov. 11th.

Remarks.—This case unfortunately ended fatally but it is interesting for several reasons. It is highly probable that the child would have died soon after admission if the first tracheotomy had not been performed; the septic laryngitis undoubtedly caused some deep ulceration which later led to cicatricial stenosis and required a secondary intubation. The repeated intubations dilated the stenosis up to a certain point but may have caused recurrence of the ulceration, as repeated coughing up of the tube indicates this condition. Finally, the diphtherial process involved the tracheotomy wound, a rare occurrence since antitoxin has been used. In this case 40,000 units were given intravenously.

CASE 4.—A boy, aged five years, was admitted on Sept. 26th, 1904, with scarlet fever. There was a history of sore-throat and headache since the 24th; the rash appeared on the 25th. On admission the child was delirious and the body was covered with a profuse scarlatinal rash. There was no rhinorrhoea but the pharynx was covered with thick muco-pus. The temperature was 104.2° F. and the pulse was 140. The respirations were 32 but there was then no marked difficulty in the breathing. On the 28th the child complained of headache and carache and the neck became swollen. During the first few days the condition of the throat improved slightly and there was less fever, but the general condition again grew worse and on Oct. 8th the child had some epistaxis and nasal discharge. On the 8th the temperature was again 104° and the restlessness increased; there was more discharge from the nose and throat and signs of double otitis media developed. On the 11th the swelling of the cervical glands had increased and the breathing was very distressed; the pulse was 160 and weaker. On the 12th the child vomited several times, albuminuria appeared, and the respirations became more laboured. Tracheotomy was performed on the 13th and was followed by complete relief of the breathing. The pulse improved markedly soon after the operation; it was slower (132) and stronger 12 hours later the temperature had come down from 103.6° to 100.8°. For several days the state of the throat remained unchanged and there was profuse offensive discharge from the nose, but the treatment was made much easier after the tracheotomy. On the 18th a patch of necrotic tissue was present on the right tonsil and part of the soft palate, and on the 21st there was profuse salivation, the saliva being blood-stained. During the following night the slough separated and there was hæmorrhage from a deep wound in the soft palate; blood was lost to the amount of about six ounces. All treatment of the nose and throat was discontinued, also the nasal feeds which had been given since tracheotomy; the child was now fed per rectum. The bleeding was checked by pressing pieces of ice into the ulcerated cavity and holding them there with the finger. There was no recurrence of the hæmorrhage and 24 hours later the nasal feeds were resumed. The patient remained in a critical condition for several days, fever persisting until Nov. 4th. On the 7th the tracheotomy tube was permanently removed; there was still some regurgitation of fluids through the nose owing to loss of part of the soft palate, and the child had to be nasal-fed several weeks, but eventually was able to take all food by the mouth. He was discharged quite well on Dec. 5th. His voice has remained nasal ever since.

Remarks.—In this case the operation served a double purpose: it not only relieved the respiratory obstruction but made it possible to deal with the hæmorrhage efficiently and so probably saved the patient's life.

CASE 5.—A boy, aged one year, was admitted with scarlet fever on Dec. 26th, 1904, on the eighth day of the disease. On admission the rash was still evident on the body, the throat was swollen, and a thin grey exudate covered the uvula, the tonsils, and part of the soft palate. The temperature was 102.4° F. and the pulse was 132. The respirations were 32. The condition remained unchanged until the 23rd; on that day there was more discharge from the throat, rhinorrhoea appeared, and the glands of the neck began to swell. The child was given 20 cubic centimetres of antistreptococcal serum intravenously and 10 cubic centimetres subcutaneously. On the 30th the respirations were more rapid and laboured and there was some recession. The temperature was 103.4°, the pulse was 145, and the respirations had increased to 40. Tracheotomy was performed and soon afterwards a great deal of muco-pus was coughed up through the tube and the respirations were relieved for a time. The discharge, however, became very thick and frequently blocked the tube; this each time caused recurrence of the distress and the tube had often to be removed and cleaned during the first two days which followed the operation. The heart gradually became weaker, the temperature went on rising, and remained between 104° and 105° until death, which occurred on Jan. 2nd, from broncho-pneumonia.

CASE 6.—A boy, aged five years, was admitted with scarlet fever on April 26th, 1905. The history was that on the 21st he had severe vomiting, sore throat, carache, and nasal discharge. The rash appeared on the 22nd. On admission the patient was moribund, he was unconscious, his breathing was laboured, and he had some recession. The temperature was 103.8° F., the pulse was 124 and very small, and the respirations were 62. There was considerable swelling in the faucal region; the tonsils were so swollen and the soft palate was so oedematous that the fauces were almost completely occluded. There was profuse discharge from the nose and throat and the cervical glands were moderately enlarged. The right ear was also discharging. The case appeared beyond the reach of any non-operative treatment. Tracheotomy was done under local anaesthesia about an hour after admission and the child was at once able to breathe more comfortably; a great deal of offensive mucus was coughed up through the wound and the respirations came down to 42. The child was placed in steam. From the appearance of the throat a diphtherial element was suspected (although a subsequent cultivation only showed streptococci) and 10,000 units of antitoxin, with 25 cubic centimetres of antistreptococcal serum were injected intravenously by direct puncture. 15 hours later the temperature had come down from 103.6° to 101°, but the heart was so weak that heart failure seemed imminent; stimulants were freely given and the pulse improved slightly. On the 23rd the tube was removed but the patient was still kept in steam for three days longer. Albuminuria appeared and there was almost complete anuria for two days. For the first 36 hours after the operation the child was fed by the rectum in case the use of the nasal tube should embarrass respiration. Nasal feeding was then employed and was continued until the tracheotomy wound had completely healed. As local treatment formalin was applied to the throat with a cotton-wool swab. The cervical glands continued to enlarge during the first few days but they gradually subsided and on May 2nd they could just be felt and the throat was almost clean. Thenceforward the child improved slowly. Left otitis media developed during the second week and an abscess on the left side of the neck during the fifth week. He was discharged quite well at the end of the eleventh week.

CASE 7.—A girl, aged six years, was admitted with scarlet fever on May 24th, 1905, on the sixth day of the disease. On admission the rash had faded but the nose was discharging freely; the throat appeared very septic and there was some salivation. The temperature was 103.8° F. and the child looked drowsy. During the first week she did not improve. The temperature remained high. Food was taken very unwillingly. The glands of the neck began to swell and signs of double otitis media developed. At the beginning of the second week there was slight improvement. The temperature came down one or two degrees and the child appeared more comfortable, but towards the end of the week profuse hæmorrhage from the nose and throat occurred. It was checked by plugging the posterior nares and by spraying the throat with bazeine. She was weaker and more restless. The temperature was again 103°. A septic rash appeared all over the body and there was some diarrhoea with blood in the stools. Rectal feeds had to be given for three days as she would not take food by the mouth and the nasal catheter could not be passed owing to the danger of further hæmorrhage. There was partial suppression of urine. During the third week the condition was the same, except that the patient appeared weaker. She often talked in her sleep and was very restless when awake. The throat, nose, and ears showed no sign of improvement. During the fourth week the breathing became noisy and she often coughed. Some ulcerative stomatitis was present. Two teeth became loose and gangrenous areas developed around them. The teeth were removed and the patches were touched with liquefied carbolic acid. On June 17th the restlessness increased. At times there was also swollen and the breathing was distressed. Tracheotomy was performed as a last resource and was beneficial in relieving the respiratory obstruction and the restlessness. In spite of it the child slowly grew worse, the gangrenous process in the mouth spread, and more teeth had to be removed. The mouth was treated with chromic acid, but the gangrene extended to the lower lip and the chin, partly destroying the soft tissues. Some hæmorrhage from the mouth recurred at intervals during the fifth week. The child died from toxæmia on June 30th.

CASE 8.—A boy, aged three years, was admitted with scarlet fever on Sept. 13th, 1905, on the ninth day of the disease. No rash was present. The temperature was 101.5° F., the respirations were 36, and the pulse was 140 and of low tension. The lips and tongue were ulcerated and bled easily. The throat was congested and covered with muco-pus and the glands of the neck were very swollen, chiefly on the left side. The heart sounds were clear but weak and there was a slight cough but no physical signs in the lungs. The child had to be nasal-fed partly owing to regurgitation of fluids through the nose and partly because he refused to take nourishment by the mouth. On the 15th the general condition was the same and 20 cubic centimetres of antistreptococcal serum were injected intravenously. There were no respirations became more rapid (40) and distressed. There was slight recession and croupy cough. The child was put in steam with slight recession and croupy cough, however, the recession and restlessness gave some relief. A few hours later, however, the recession and restlessness increased, the pulse became more rapid and weaker (chiefly during inspiration), and tracheotomy was performed under local anaesthesia.

The respirations remained rapid but became quite free and the patient was able to sleep. No membrane was coughed through the tube. On the 17th the naso-pharynx was so swollen that the nasal catheter could not be passed and he had to be rectal fed. There was right otitis media. The pulse became gradually weaker and the child died from heart failure 22 hours after the operation.

CASE 9.—A boy, aged nine years, was admitted on Oct. 31st, 1905, with scarlet fever. There was a history of 11 days' illness which began with vomiting, sore-throat, and profuse nasal discharge. On admission the child presented all the signs of a very septic case. There was profuse offensive discharge from the nose and ears, the glands of the neck were very swollen, and the throat was congested and covered with a thin exudate. Respiration was noisy and laboured and there was some recession. The temperature was 101.8° F. and the pulse was 120. The child was delirious and very restless. On Nov. 1st the recession increased, the colour of the face, which from the first had been greyish, became rather livid, and there was also cyanosis of the lips. He was more restless and it became evident from the nature of the pulse that he was going downhill rapidly. Tracheotomy was performed under local anaesthesia, the child being too weak for a general anaesthetic. It was followed by complete relief of respiration, although the rate remained rapid. Soon after the operation the temperature dropped from 102.2° to 99.6°. 12 hours later he appeared moribund and his pulse could scarcely be felt. He was given stimulants with slight improvement but for several days he had frequent attacks of collapse during which heart failure seemed imminent. On the 3rd he coughed up a great deal of thick, offensive mucus through the tube. He was put in steam. On the 4th the tube was permanently removed. On the 6th the throat was clearer, there was less discharge from the nose, and the cardiac condition had improved slightly but the temperature was 101.8°. On the 8th the temperature was normal and steady improvement set in. The child had nephritis during the tenth and eleventh weeks but after that he made an uninterrupted recovery. He was kept in the hospital on account of persistent ear discharge until the nineteenth week but eventually went home quite well on March 3rd, 1906.

CASE 10.—A boy, aged three years, was admitted on Nov. 18th, 1905, on the fifth day of illness. There was no rash on admission, but the throat was in a very septic condition. The swelling of the glands of the neck was extreme and there was profuse thick discharge from the nose. The child was very collapsed when he came in and his breathing was noisy but there was no recession. The general condition remained unchanged until 12 days later when the breathing became more laboured. The neck was more swollen and oedematous and presented a typical picture of the "bull neck." The pulse was very much worse. A deep abscess had formed on the right side of the neck; this was opened and tracheotomy was performed. The child was much more comfortable and his general condition began to improve. During the first few days he was in the hospital swallowing was practically impossible owing to the intense swelling in the faucial region. Nasal feeds were resorted to but could not always be given as the passage of the catheter was often impossible owing to the congested state of the naso-pharynx; on these occasions rectal feeds had to be given. The patient was able to breathe comfortably without the tube on the fifth day after the operation but when the wound began to close the distress returned and the tube had to be reinserted. It was permanently removed seven days later. 17 days after the operation the temperature was normal and from that time the throat began to improve slowly and the swelling of the neck gradually subsided. This case was complicated by double otitis media and the convalescence was very slow. The child was sent home quite well in the twenty-second week.

The following case was extremely severe and approached the "malignant type" which may kill in 36 or 48 hours.

CASE 11.—A boy, aged seven years, was admitted on March 15th, 1906, with scarlet fever. There was a history of two days' illness which began with sore throat and violent vomiting. On admission the temperature was 100° F. but soon rose to 103° and remained between 103° and 104° until death. The pulse was 120 and small and the respirations were 45. There was profuse offensive discharge from the nose and ears. The throat was very congested. The tonsils were swollen. The soft palate was very oedematous. The tongue was thickly furled and could only be protruded with difficulty. Both sides of the neck were markedly swollen. The rash was intense and in places almost petechial; it only partly disappeared on pressure and covered the whole body. During the first two days the condition grew steadily worse; the child vomited at frequent intervals and owing to the condition of the naso-pharynx the breathing became very difficult. The patient tended from time to time to become cold but no rigor occurred. He was almost unconscious and very restless. On the morning of the third day the respirations had become very laboured and the pulse was much weaker; there was also indrawing of the lower part of the chest during inspiration. Tracheotomy was performed under local anaesthesia and completely relieved the distress. The child became very quiet but the pulse grew weaker and death occurred three hours later.

Remarks.—In this case the relief following the operation was so striking that it was deeply regretted that it had not been done soon after admission. However, owing to the profound toxæmia present, it is doubtful whether an early operation would have altered the prognosis but it would certainly have relieved the respiratory distress and restlessness and very much facilitated the nursing of the case.

CASE 12.—A boy, aged two years, was admitted with scarlet fever on March 23rd, 1906, the seventh day of the disease. On admission a scarlatinal rash was still present on the abdomen and limbs. Both sides of the neck were swollen and there was an abundant mucopurulent discharge from the nose. Respiration was rapid and difficult, the pulse was 145, and the temperature was 103° F. It was stated that the breathing had been laboured during the two days before admission. The temperature remained high (between 103° and 104°) for the first 35 hours. Meanwhile the respiratory distress steadily increased, the pulse grew weaker, and some recession appeared. Tracheotomy was performed on the 25th. Troublesome bleeding occurred and could not be stopped by force-pressure, as it was a general oozing characteristic of

these septic cases; it was only controlled by plugging the wound slightly around the tube. The breathing was relieved and the temperature dropped from 103.2° to 99.8°. As much thick mucus was being coughed up through the tube the child was put in steam. On the 27th the temperature was still high and the swelling of the neck had increased; it was more brawny and had extended upwards towards the scalp. On the 28th there was diffuse cellulitis of the neck and scalp. The tracheotomy wound was looking quite clean at the time of death, which occurred on that day from toxæmia.

CASE 13.—A boy, aged 11 years, was admitted with scarlet fever and diphtheria on Sept. 2nd, 1903, on the sixth day of the disease. On admission a profuse bright scarlatinal rash covered the whole body. The throat was very swollen and oedematous and there was some dirty-looking membrane on one tonsil. The posterior wall of the pharynx was almost completely hidden by the swelling of the faucial regions; what could be seen of it was covered with thick mucopus. The cervical glands were very swollen and there was a great deal of offensive discharge from the nose. The tongue and lips were ulcerated and bled readily. The child was delirious; he refused to take his food and constantly tried to sit up in bed. The temperature was 103° P., the pulse was 144, and the respirations were 40. He was given 50,000 units of antitoxin and 20 cubic centimetres of antistreptococcal serum subcutaneously. During the evening the restlessness increased, breathing became very laboured, and there was slight recession during inspiration. The pulse was more rapid (160) and weaker. Tracheotomy was performed at 1 o'clock the next morning and was followed by a striking improvement. The patient was able to sleep all night, his respirations became quite free, and his pulse stronger and slower (135). There was considerable hæmorrhage at the time of the operation but it was controlled by plugging the wound and did not recur. During the following days pieces of membrane and much mucopus were coughed up through the tube. The throat remained in the same state for several days. On the 12th the throat was clean and the tube was removed. On the 16th right otitis media developed. There was some ear discharge for four weeks and the child was sent home quite well in the ninth week.

CASE 14.—A boy, aged two years, was admitted with scarlet fever and diphtheria on Oct. 12th, 1906 with a history of four days' illness. On admission a bright rash covered the body and limbs. The throat was congested and some membrane was present on both tonsils and the soft palate. There was some lymphadenitis on both sides of the neck. The temperature was 102.6° F., the pulse was 135, and the respirations were 44. The heart sounds were clear but weak. Antitoxin (25,000 units) and antistreptococcal serum (20 cubic centimetres) were injected subcutaneously. On the evening of the 13th the child became more restless and there was a slight cough which at times sounded croupy. The pulse went up to 160 with no corresponding increase of the temperature and it was very weak. Some recession was present and the child looked distressed although the colour was good. From the condition of the pulse it was evident that the heart was feeling the strain of the obstruction. Tracheotomy was performed and as soon as the trachea was opened several large pieces of membrane were coughed up. For a time the child breathed quite easily but on the evening of the 14th signs of broncho-pneumonia developed. More antitoxin (50,000 units) were given and the child was put in steam. On the 15th there was some cyanosis. Inhalations of oxygen were tried and gave great relief, but only for a short time. The respirations became gradually more rapid and shallow and the patient died the same evening, 42 hours after the operation.

The following case was not operated on for obstruction but for uncontrollable hæmorrhage from the naso-pharynx.

CASE 15.—A girl, aged six years, was admitted on Dec. 28th, 1904, with scarlet fever. On admission the rash was still present on the body, there was profuse mucopurulent discharge from the nose and pharynx, and the tonsils were covered with thick cheesy exudate. During the first week the temperature remained above 103° F. and the general appearance was that of a very septic case. At the end of the second week profuse epistaxis occurred; plugging of the posterior nares was tried without success. As the child was getting collapsed tracheotomy was performed as a last resource and the pharynx was completely plugged; this efficiently controlled the bleeding. Troublesome hæmorrhage occurred from the wound and was only checked with difficulty. The patient died 12 hours later from toxæmia.

CONCLUSION.

In reviewing the cases described above it appears that in all of them the operation was beneficial; in the greater number the benefit proved only temporary but there were some in which, as far as could be judged, the patient's life was saved. Those who died were most of them very young and in children under three years the outlook is graver. Another factor which affects the prognosis is the time at which the operation is performed. On more than one occasion there has been reason to regret from the result of the operation that it was not done earlier.

In concluding I wish to acknowledge my indebtedness to Dr. J. Biernacki, medical superintendent of Plaiestow Hospital, for his kind permission to publish the cases described in this paper.

MILK-SUPPLY OF BRISTOL.—At the Bristol police court on Jan. 18th the chairman of the magistrates remarked, whilst fining a tradesman for selling milk containing 12.59 per cent. of added water, that the milk-supply in Bristol was disgraceful, for the annual report of the Local Government Board for 1905-06 showed that 457 samples were taken and 101 were found to be adulterated, whereas in Manchester 1260 samples were taken and only 83 were found to be adulterated.

THE GLANDULAR EXTRACT FROM IMMUNISED ANIMALS AS A CURATIVE AGENT IN PLAGUE.¹

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It is a well-known clinical fact that the cases of plague which generally recover are those in which the glandular reaction is most marked, whilst the most serious cases are those in which the glandular reaction is hardly observable. It is also observed in the laboratory that marked pathological changes occur in lymphatic glands, liver, and spleen, especially in those animals in which the disease from some cause or other runs a chronic course. I found, for example, marked necrotic changes in these organs in animals partially protected with Haffkine's fluid, and afterwards dying from plague when subsequently infected with the bacillus pestis. These facts induced me to consider that the organs on which the plague poison exercises its concentrated effect may probably be the centres where the antibodies are manufactured in great quantity in case of recovery. In this way I was led to consider whether it was possible to use some form of glandular extract from immunised animals as a curative agent in plague. In order to test the practicability of this theory I carried out some experiments in Hyderabad in the year 1900 and found that the glands of the immunised animals, such as the liver, the spleen, and the buboes when finely minced aseptically, and treated with absolute alcohol for two weeks or more and then allowed to dry at the room-temperature, could be easily converted into a fine powder. The powder thus obtained when well rubbed down in a sterile mortar with a sterile normal salt solution yielded on filtration a clear straw-coloured liquid which seemed to possess curative power when inoculated into animals artificially infected with a culture of the bacillus pestis. But as the number of experiments carried out was insufficient to form a definite opinion, and as I had no opportunities to carry out further experiments in Hyderabad, I dropped the subject and did not publish the results. Last September, through the kindness of Professor Dunbar, I was enabled to repeat these experiments at the Hygienic Institute, Hamburg, and the results so far obtained seemed to be very encouraging.

The method which I have used in preparing the curative powder from the glands of immunised animals is as follows: Healthy rabbits are inoculated with Haffkine's prophylactic fluid to produce slight immunity, just enough to give them a start. For this purpose I use the supernatant fluid after the sediment consisting of bodies of dead bacilli has thoroughly settled down, as I had shown some years ago² that the filtrate from Haffkine's fluid is quite as efficacious in producing immunity as are the entire contents thoroughly shaken up together as recommended by Haffkine, and has further the advantage of not producing local mischief, such as hard indurated swelling at the seat of injection containing sterile pus. Haffkine's fluid is given subcutaneously on two occasions with an interval of about 12 days between the injections, and when the animals have thoroughly recovered from its effects, say in from 10 to 12 days, they are subsequently inoculated with a very small quantity of a weak culture of living plague bacilli subcutaneously, and again after an interval of 10 or 12 days a larger dose of the weak culture is introduced. Subsequently a virulent germ is substituted for the weak one, commencing with the small doses and then gradually increasing the doses, always allowing an interval of about a fortnight between the injections for the animals to recover, till they can withstand the whole quantity of plague germs which will grow on a surface of an ordinary Petri dish. I continue these immunisations until at last the animals can withstand one or two loops of very virulent plague germs given intravenously. Lastly, the animals when quite sound are killed with chloroform, generally

15 days after the last intravenous injection, for the preparation of the powder. Microscopic examination of the juice of glands of such animals did not reveal the presence of any bacteria and no growth was obtained on the media inoculated. It is thus seen that the immunity in these animals is really produced by the living bacilli and is far higher than the immunity which could be produced by dead bacilli or their products. The production of such an immunity, however, is much more difficult, as one has to be very careful in graduating the doses so as to avoid killing the animals. I find that it generally takes from four to six months to produce such an immunity. After the animals have been killed with chloroform, the glands such as the liver, the spleen, the buboes, and the suprarenals are removed, are finely minced aseptically and spread in thin layers in sterile glass dishes, and are allowed to dry over sulphuric acid in a hot-air chamber at 47° C. for a period of from three to six days. When the material is thoroughly dried it is well ground in a sterile mortar to a fine powder, after which it is placed in small sterile flasks plugged with cotton-wool and replaced in a hot-air chamber for about 24 hours. The powder is now ready for use. It forms a brown cloudy emulsion when well rubbed down in a mortar with warm sterile water and can be easily injected into an animal with a needle of somewhat large calibre. I found that the process of drying the organs with alcohol takes a much longer time in Hamburg than in Hyderabad. I have therefore adopted Klein's³ method of drying the organs on account of the insufficiency of time at my disposal. I believe that the alcohol method and the use of larger animals would give better results.

The results of experiments with the gland powder thus prepared are given in a tabular form. Two strains of the bacillus pestis were used in the experiments, "Blagdon" and "Bishopsgate." The virulence of the former is such that one platinum loopful (two milligrammes) is sufficient to kill a white rat (200 grammes) in 24 hours, $\frac{1}{32}$ th of a loop kills a similar animal in three days, $\frac{1}{128}$ th of a loop in four days, and $\frac{1}{1024}$ th of a loop in six days; while the virulence of the latter is such that $\frac{1}{16}$ th, $\frac{1}{32}$ th, and $\frac{1}{64}$ th of a loop will kill a white rat (200 grammes) in three, five, and seven days respectively. 50 animals on which the curative powder was administered were as follows: 16 guinea-pigs, 24 brown rats, and ten white rats.

In my experiments I have selected the introduction of plague virus in a subcutaneous pouch in the case of brown rats and by a cutaneous method in the case of guinea-pigs and white rats, as the cutaneous method in the case of guinea-pigs and white rats is a certain method of producing the disease, whereas the cutaneous method in brown rats is not so reliable as the subcutaneous pouch.

When working with the Blagdon strain the number of recoveries obtained were 50 per cent. in the case of brown and white rats when plague was given in a subcutaneous pouch to the former and cutaneously to the latter, as two (Nos. 2 and 3 (white rats) and 6 and 8 (brown rats)) out of four animals recovered in both instances. Whereas with Bishopsgate the recoveries obtained were 65 per cent., as eight (Nos. 26, 28, 29, 31, 32, 33, 34, and 36) out of 12 brown rats and four (Nos. 37, 38, 39, and 40) out of six white rats recovered when treated with the remedy. In the case of guinea-pigs the results were more favourable. Four were infected with Blagdon (recovered 3: Nos. 10, 11, and 12) and 12 with Bishopsgate (recovered 8: Nos. 13, 15, 16, 17, 19, 20, 21, and 24) cutaneously. Out of these 16 animals 11 recovered, giving a percentage of a little over 68 recoveries. In these animals one loop (two milligrammes) of agar culture of bacillus pestis of about 48 hours' growth procured directly from the smears of organs of animals dead from acute plague was used in every case and the curative powder administered varied from 100 to 250 milligramme doses. In nearly half of the cases the curative powder was given 24 hours after the infection and in others half an hour after the infection. When plague was given subcutaneously to brown rats the recoveries obtained were 50 per cent., as four (Nos. 43, 44, 46, and 47) out of eight animals inoculated with Blagdon recovered. Out of eight brown rats six had $\frac{1}{32}$ th of a loop (Blagdon) subcutaneously and 150 milligrammes of the powder about half an hour after the infection and the remaining two brown rats had $\frac{1}{16}$ th of a loop (Blagdon) and

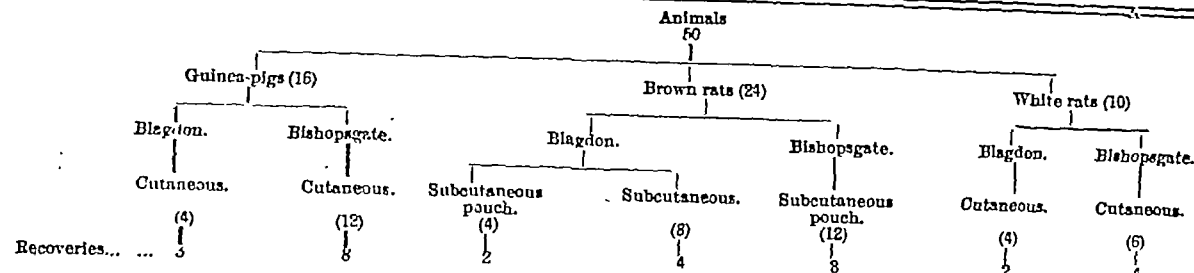
¹ Report of a research carried out during the years 1905 and 1906 at the Hygienic Institute, Hamburg.
² Indian Medical Record, Jan. 3rd and 10th, 1900; Brit. Med. Jour., May 12th, 1900.

³ Klein's Preliminary Report to the Local Government Board, December, 1895.

TABLE SHOWING THE RESULTS OF EXPERIMENTS ON PLAGUE AT THE HYGIENIC INSTITUTE, HAMBURG.

Number.	Animals.	Infection.				Days of infection.			Remarks.	
						1	2	Day of infection on which death took place.		
		Strain.	Dose.	Method.	Date.	Dose of curative powder.	Dose of curative powder.			
1	White rat 5103	Blagdon.	1 loop.	Cutaneous.	5 5 05	120 mgm.	—	7th.	Died.	
2	" 5109	"	"	"	"	150 mgm.	—	—	Recovered.	
3	" 5110	"	"	"	"	—	200 mgm.	—	"	
4	" 5111	"	"	"	"	—	250 mgm.	3rd.	Died.	
5	Brown rat 5113	"	"	Subcutaneous pouch.	"	120 mgm.	—	4th.	"	
6	" 5114	"	"	"	"	150 mgm.	—	—	Recovered.	
7	" 5115	"	"	"	"	—	250 mgm.	4th.	Died.	
8	" 5116	"	"	"	"	—	200 mgm.	—	Recovered.	
9	Guinea-pig 929	"	"	Cutaneous.	"	150 mgm.	—	13th.	Died.	
10	" 921	"	"	"	"	"	—	—	Recovered.	
11	" 922	"	"	"	"	—	200 mgm.	—	"	
12	" 923	"	"	"	"	—	"	—	"	
13	White rat 5112	Bishopsgate.	"	"	"	Control.	—	3rd.	Died.	
14	Guinea pig 927		"	"	"	16 5 05	150 mgm.	—	—	Recovered.
15	" 923		"	"	"	"	—	—	11th.	Died.
16	" 929		"	"	"	"	—	—	—	Recovered.
17	" 930		"	"	"	"	—	—	—	"
18	" 931		"	"	"	"	—	—	—	"
19	" 932		"	"	"	"	—	—	15th.	Died.*
20	" 933		"	"	"	"	—	200 mgm.	—	Recovered.
21	" 934		"	"	"	"	—	"	—	"
22	" 935		"	"	"	"	—	"	—	"
23	" 936		"	"	"	"	—	"	9th.	Died.
24	" 937		"	"	"	"	—	"	10th.	"
25	" 938		"	"	"	"	—	"	—	Recovered.
26	" 939	"	"	"	"	Control.	—	9th.	Died.	
27	Brown rat 5147	"	"	Subcutaneous pouch.	"	150 mgm.	—	7th.	"	
28	" 5148	"	"	"	"	"	—	—	Recovered.	
29	" 5149	"	"	"	"	"	—	4th.	Died.	
30	" 5150	"	"	"	"	"	—	—	Recovered.	
31	" 5151	"	"	"	"	"	—	—	"	
32	" 5152	"	"	"	"	"	—	6th.	Died.	
33	" 5153	"	"	"	"	—	200 mgm.	—	Recovered.	
34	" 5154	"	"	"	"	—	"	—	"	
35	" 5155	"	"	"	"	—	"	—	"	
36	" 5156	"	"	"	"	—	"	—	"	
37	" 5157	"	"	"	"	—	"	10th.	Died.	
38	" 5158	"	"	"	"	—	"	—	Recovered.	
39	" 5159	"	"	"	"	Control.	—	5th.	Died.	
40	White rat 5175	Blagdon.	"	Cutaneous.	21 5 05	150 mgm.	—	—	Recovered.	
41	" 5176		"	"	"	"	—	—	"	
42	" 5177		"	"	"	"	—	—	"	
43	" 5178		"	"	"	"	—	—	"	
44	" 5179		"	"	"	"	—	—	7th.	Died.
45	" 5180		"	"	"	"	—	—	5th.	"
46	" 5181		"	"	"	"	Control.	—	—	"
47	Brown rat 5134	"	1/2 loop.	Subcutaneous.	11/5/05	100 mgm.	—	—	Recovered.	
48	" 5135	"	"	"	"	"	—	—	"	
49	" 5136	"	"	"	"	Control.	—	4th.	Died.	
50	" 5161	"	1/4 loop.	"	21/5/05	150 mgm.	—	5th.	"	
51	" 5162	"	"	"	"	"	—	—	Recovered.	
52	" 5163	"	"	"	"	"	—	—	"	
53	" 5164	"	"	"	"	"	—	6th.	Died.	
54	" 5165	"	"	"	"	"	—	5th.	"	
55	" 5166	"	"	"	"	—	—	—	"	
56	" 5167	"	"	"	"	Control.	—	4th.	"	

* Bacillus pestis not found in any organ.



100 milligrammes of the powder about half an hour after the infection. An average-sized rabbit yields about 28 grammes of the powder. The smallest amount of the gland

cure with which a positive result was obtained was 100 milligrammes in the case of brown rats. The Laboratory, Hyderabad, Deccan.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF INFECTION DURING THE PUERPERIUM SIMULATING PSOAS ABSCESS.

By WILLIAM AYRES, B.A., M.D. DUB.

ON April 25th, 1903, I attended a patient in her fifteenth confinement. I had attended three previous confinements. The labour was most uneventful. I arrived just in time to be present at the birth of the child. On the fifth day of the puerperium the patient had a rigor. The temperature was 99° F. and the pulse-rate was 100 per minute. I douched out the uterus and put the patient on a quinine mixture. I examined the uterus and adnexa most carefully but could find no reason for this rigor and as the temperature remained normal I thought I was free from all trace of puerperal infection. On the twelfth day of the puerperium the patient began to complain of pain in her left leg which gradually got worse and the leg began to contract until the knee was at right angles to the body. The pain was relieved by suppositories of morphine. On the fifteenth day of the puerperium a small hard lump of the size of a Tangerine orange began to appear to the left of, and below, the umbilicus. This lump was very hard and immovable and was thought to be an inflammatory swelling in connexion with the broad ligament pressing on the lumbo-sacral plexus; it grew very slowly. The temperature never went beyond 99° and that was reached only once or twice; the pulse-rate was never beyond 100 per minute. On May 18th I had for private reasons to leave my practice and I gave instructions that a colleague should see the case in my absence if the pain became unbearable. My colleague came to the conclusion that the lump was of a cancerous nature owing to its hardness and immovability and also the absence of any very definite temperature and pulse-rate. It was decided, therefore, as there was some doubt as to the exact nature of this lump to give the patient the benefit of an operation. After consultation Dr. F. Edge of Wolverhampton kindly undertook the operation, which was performed at the Nursing Institution, Wolverhampton, on June 9th.

After the preliminary laparotomy a hard lump was discovered behind the sigmoid flexure which was fixed but not involved anteriorly or laterally. As owing to its position removal of the mass if malignant was impossible and incision into it pregnant with danger should not have been struck, as it would have had to drain through the peritoneal cavity, it was decided to await events and the abdominal wound was accordingly stitched up again. The uterus and adnexa were found to be in a perfectly healthy and normal condition. The patient stood the operation well and made a good recovery. The temperature several times reached 101° F. and the pulse-rate varied from 90 to 110. She seemed to be in rather a typhoid condition but at the end of three weeks she improved and went home.

There was no doubt as to sepsis of some kind but it was held to be due to mischief in the sigmoid flexure or infection of the mass from the intestinal canal but the mass was so hard and firm that the possibility of sarcoma was not excluded and the question was raised as to whether an artificial anus might not be required later.

Ten days after the patient's return home the lump suddenly disappeared from above the brim of the true pelvis and presented itself in Scarpa's triangle, where it was seen to be inflammatory, and was accordingly opened. The patient was up and about again in another two months. The lymphatic glands involved were the left common iliac and lower lumbar glands and it is possible that the lesion in such cases is due to injury to the rectal tissues during labour.

A most interesting case of a similar nature has recently been reported by Dr. P. J. Watkins, professor of gynaecology at the North-Western University, Chicago, but there are so many points of difference in the two cases that perhaps a report of my case may be of interest to the profession.

I am indebted to Dr. Edge for the kind use of notes during the time that the patient was under his care.

Brierley Hill, Staffs.

A CASE OF RAYNAUD'S DISEASE.

By JOHN REID, M.D. ABERD.

THE patient in the following case was a child, 14 days old, who presented marked puffiness of the eyes indicating ophthalmia neonatorum; there was also a redness spreading over the head suggestive of erysipelas. The digestive apparatus seemed to be good and the food was breast milk only. The hygienic surroundings were bad. On Jan. 4th the only treatment ordered was the application of flour to the skin. On the 5th a boracic lotion was ordered for the eyes, which soon cleared, and as both thumbs were swollen and hard, suggesting osteomyelitis, mercury was given internally and applied to the thumbs. The toes next gave evidence of osteomyelitis and the left leg was also red in addition to being swollen. The child seemed tolerably well. On the 8th the symptoms of osteomyelitis disappeared and patches of gangrene were to be seen on the toes, fingers, and left forearm, previously red. The gangrene was in each case superficial. The child continued to take calomel in powder. The redness had left the head for some days. Only the big toes and thumbs had the appearance of chilblains, and there was redness round the gangrenous patch over the left forearm. The left ankle was markedly flexed, and the right ankle partially flexed. On the 10th when the child cried the sound emitted had a whining character and there were some laryngeal symptoms without fever. On the 11th the base of the left lung was found to be solid; the gangrene had, if anything, slightly retrogressed. Death occurred quietly about 8 P.M. The mother said that a former child of hers died somewhat similarly. I looked on the case as one of congenital syphilis without snuffles. The red skin preceding the gangrene, is different from Raynaud's cases.

The local application of mercury to the myelitis seemed to have an almost magical effect judging from cases which I have seen treated by constitutional means only.

Walbrook, E.C.

VACCINATION GRANT.—Mr. John Hoole, M.R.C.S., has received the grant for successful vaccination for the Hartington district of the Ashbourne union.

HOSPITAL SATURDAY FUND AT PLYMOUTH.—During 1906 the sum of £627 was raised by the Hospital Saturday Fund for the South Devon and East Cornwall Hospital, Plymouth.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

On the de novo Origin of Bacteria, Bacilli, Vibriones, Micrococci, Torulae, and Moulds in Certain previously Superheated Saline Solutions contained within Hermetically Sealed Tubes.—Idiopathic Cyanosis due to Sulph-Hæmoglobinæmia.

A MEETING of this society was held on Jan. 22nd, Mr. J. WARRINGTON HAWARD, the President, being in the chair.

Dr. H. CHARLTON BASTIAN said that early in the year 1906 he began to make experiments on the question of the origin of life with various saline solutions containing ammoniacal salts. After a time he found the best results were to be obtained with one or another of two solutions, one of which contained small quantities of sodium silicate, ammonium phosphate, and dilute phosphoric acid in distilled water, and the other a simple solution of sodium silicate with liquor ferri pernitricis in distilled water. It was found, also, that with the use of these saline solutions exposure of the experimental vessels to diffuse daylight, with even a mean temperature of only from 69° to 65° F., favoured the appearance of micro-organisms quite as much as, or even more than, darkness associated with an incubator temperature of 95° F. The solutions were placed in previously superheated tubes, which, after being hermetically sealed, were heated again in a calcium chloride bath to 239° F. (115° C.), 248°, 257°, or 266° F. (130° C.), for from 10 to 20 minutes. In all these tubes, after the process of heating, a small deposit either of silica alone or of silicate of iron was thrown down. The tubes were subsequently exposed either to diffuse daylight or else in the incubator, and mostly for periods varying from five weeks to four months. When opened the tubes were found to contain, in varying abundance, one or more kinds of micro-organisms, photographs of which were shown. One point of much interest in connection with these experiments was the fact that no carbon was ostensibly contained in the solutions, though its close chemical ally silicon was always present. It had previously been determined that such solutions proved excellent nourishing media for the growth of micro-organisms, and this fact led to trials whether any evidence was to be obtained tending to show that such solutions could also actually engender living units. On examination of the contents of the tubes after their prolonged periods of exposure to light or in the incubator the organisms were always found, after careful search, on or within the substance of the flakes of silica, while the fluid above remained perfectly clear. The fluid would remain in this condition and quite free from micro-organisms, even for months after organisms were known to be swarming in the silica itself. Some of these organisms also were found in flakes of silica taken from tubes from which all air had been expelled by boiling at the time when they were hermetically sealed, so that, except for any carbonaceous impurity that may have existed in the distilled water or in the chemicals employed, no carbon would be contained within these tubes. And even in those tubes which did contain air this was always separated by a deep layer of the fluid itself from the deposit in which the organisms were contained. Many organic compounds had been discovered by chemists in which silicon wholly or in part replaces carbon; and it was contended that there was good *prima facie* evidence from these experiments tending to show that silicon was capable of entering into the composition of protoplasm itself—that is wholly or in part taking the place of carbon. In regard to the major question, concerning the origin of life itself, the facts to be borne in mind were these: If a few hours after the heating of the tubes one or more of them were opened as "control" experiments, and the sediment carefully examined, no organisms of any kind were to be found; but, after suitable periods of exposure, organisms might be found, in more or less abundance, in the sediment taken from other similar tubes. The organisms were, moreover, always motionless; so they must have sprang up and multiplied in the sites where they were found. Then, again, it was important to bear in mind: (1) That, apart from "spores" of bacilli, no micro-organisms could resist an exposure of two or three minutes in boiling

water, this being lethal for bacteria, vibriones, micrococci, torulae, and moulds; and (2) that all ordinary spores of bacilli were killed by a similar exposure for a minute or two to 115° C. (239° F.). It could only be concluded, therefore, that the bacteria, bacilli, vibriones, micrococci, torulae, and moulds which had been taken from hermetically sealed tubes previously heated to 115°, 120°, 125°, and 130° C. for from 10 to 20 minutes must have been engendered *de novo* within these vessels. The organisms that arose *de novo* were presumed by Dr. Bastian to assume well-known forms, for precisely the same reason that the various representatives of the crystalline world, when they originated, invariably fell into their own specific shapes and with surfaces always inclined to one another at angles that never varied for each particular species of crystal. The forms in each set of cases—in organisms and in crystals alike—might be regarded as the necessary resultants of the molecular constitution of their initial units in the particular media and surroundings in which they occurred.

Professor E. H. STARLING said that there was much in the main thesis which Dr. Bastian had propounded with which he was in agreement. In the body the inorganic material taken in was elaborated into organic material—a change which was designated assimilation. Taking the simple sugars as an example it was only the dextro-rotatory which could be so assimilated while the invert sugar could not be so utilised. If they accepted the development of the higher forms of life from the lower forms then the process should not cease at the lowest forms of life and there should be no sharp line between what was regarded as living and what as dead. Even in the body the red blood cells were on the border line and these when killed by formalin gave reactions which were regarded as evidence of living cells. If protoplasm was formed, as Dr. Bastian had suggested, in a primitive form, it would serve as a pabulum for more highly organised bodies, and it was only under such conditions as Dr. Bastian had arranged that such early protoplasm could survive. In relation to Dr. Bastian's experiments the question arose as to whether the organisms which he showed were alive. He did not consider that this was proved and suggested that a plate-culture might demonstrate this, though even under such conditions the organism might be alive and yet not grow.

Dr. E. W. GOODALL said that he was not convinced that the tubes in which the experiments had been performed had been completely sterilised. He asked for proof that the organisms seen in the tubes were living.

Dr. BASTIAN, in reply, said that not only in the preparation of the tubes had they been subjected to a very high temperature, but also after being filled with fluid a temperature of 130° C. had been used for 20 minutes, which all observers agreed was sufficient to destroy all organisms and spores. The evidences of life in the organisms were unmistakable; not only did they increase in the tubes but they could be removed on to a slide and could, under suitable conditions, be seen to multiply there.

Dr. S. WEST and Dr. T. W. CLARKE communicated an account of a case of Idiopathic Cyanosis due to Sulph-Hæmoglobinæmia. The paper, which was illustrated by an epidiascope demonstration, will appear in full in a future issue.

PATHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.

Laboratory Meeting at the Lister Institute.

A MEETING of this society was held at the Lister Institute on Jan. 12th, Dr. C. J. MARTIN being in the chair.

Dr. J. HENDERSON SMITH read a communication on the Increase of Complement in Serum allowed to Stand in Contact with Clot. He pointed out that while immune serum had its full complement from the beginning, that of normal serum took several hours to develop, and that the increase in contact with clot was much greater than without it. In the discussion following the paper Dr. J. A. CRAW remarked on the increase of opsonin, and Dr. E. W. A. WALKER on the increase in bacteriolytic power when the serum was left in contact with clot—Dr. G. DEAN, examining 18 hours afterwards, could find no difference as regards opsonins.

Dr. J. C. G. LEDINGHAM in a paper dealing with the Quantitative Relationship between the Globulin and the Antitoxin of Diphtheria Anti-serum, was inclined to conclude from a small number of cases examined that horses

showing a large amount of globulin might be discarded for purposes of immunisation as likely to prove unsatisfactory. He also showed how during the process of immunisation the globulin rises with the potency.

Dr. CRAW and Dr. DEAN, in a conjoint paper on the Standardisation of Diphtheria Toxin and the Normal Variations in the Weight of the Guinea-pig, criticised the results of Arrhenius and Madsen with regard to the relations between lethal dose, lethal time, and weight of animal.

Dr. DEAN, in a paper on Further Experiments on the Nature of the Substance in Serum which Influences Phagocytosis, concluded that the number of organisms taken up by phagocytes in opsonic technique was directly proportionate to the concentration of the emulsion and that the complement corresponded with the opsonin of normal serum.

Professor R. MUIR and Dr. W. B. M. MARTIN continuing the researches the results of which were submitted to the society at Manchester last summer, read a short paper on the Combining Properties of Opsonin and Immune Serum. They found that substances which took up complement of normal serum also fixed opsonins. Heating brought out differences between opsonins of normal serum and that of immune serum, for whilst the former were destroyed at 55° C., the latter had something remaining constant. No substance combined with immune opsonin except the organism producing it. In addition to heat they used other complement absorbers, such as red blood corpuscles and immune body. Contrary to Bulloch's conclusions, they found that there was a fall in opsonic power when normal serum was treated with various organisms, whereas treatment had no effect on immune opsonin. They concluded that immune opsonins were real anti-substances. The question of their constitution—whether they were of the type of immune body or agglutinin—they left open.

Professor D. J. HAMILTON raised the question of the practicability of Multiple Immunisation. He spoke briefly regarding the results recently obtained in the West Highlands and South of Scotland and also in Ireland in endeavouring to immunise sheep against "louping ill," chorea paralytica, and diseases "A" and "B," the organisms of which he described at the Manchester meeting. The mortality, which had ranged from 15 to 50 per cent. (among non-immunised sheep), had fallen to 1.5 per cent. in animals immunised by the mouth. Fuller details were promised in the forthcoming report of the Agricultural Board.—Colonel LEISHMAN briefly stated that in researches on typhoid fever mouth immunisation seemed to give definite evidence of some immunising substance.

Colonel LEISHMAN, R.A.M.C., read a paper on Monkey Malaria, founded chiefly upon smear preparations from three monkeys brought back from Uganda by Bruce and on other films prepared by Greig in Uganda. The persistence of parasites in the blood was noticed, sometimes few, sometimes many; they were never absent, but no periodicity was observed. Free gametes, macrogametes, and intracorporeal forms were met with. Rosette formation was never observed, and while Colonel Leishman did not suggest that such did not occur, he pointed out that the absence of such formation was remarkable. He thought that the fresh supply in the blood depended on an alternative mode of propagation—namely, that it was due to extrusions of chromatin from the macrogametes and that these extrusions became fresh malarial parasites.—Professor E. A. MINCHIN, remarking on Colonel Leishman's paper, said that such protozoa had three forms: (1) The male, practically all nucleus, which soon died off; (2) the indifferent form which was hardier and lasted longer; and (3) the female macrogametocytes, which by parthenogenesis (as suggested by Schaudinn) could give rise to the indifferent form.

Dr. S. MONCKTON COPEMAN and Dr. W. HARE made a communication on the Presence of Hydrochloric Acid in the Stomachs of Mice Inoculated with Cancer.

Dr. M. S. PEMBREY spoke of the Effects of Exercise. He observed that there was an optimum temperature for exercise, that muscular exercise raised the temperature, and that it must be taken into account that the normal temperature might sometimes reach 100.5° F. He found that the blood pressure fell after exercise owing to dilatation of the peripheral vessels, and that though the depth of respiration was changed the rate practically did not vary.

Dr. J. B. LEATHES made a communication on Metabolism in Fever, in which he said that in fever induced by typhoid vaccine the total nitrogen, kreatinine, and especially uric acid were increased.

Dr. F. A. BAINBRIDGE and Dr. A. P. BEDDARD submitted the results of Experiments on Cats in which portions of the kidneys were removed at two operations. They failed to find any evidence that the kidneys influenced nitrogenous metabolism.

Mr. H. W. ARMIT read the results of his chemical researches on the Toxic Actions of Iron and Nickel.

Dr. J. S. HALDANE, Lieutenant DAMANT, R.N., and Dr. A. E. BOYCOTT submitted some Observations on Caisson Disease. While pressure *per se* had no effect, the ill-effects experienced were due to decompression setting free bubbles of air. As continuous decompression necessitated a considerable time, men working in caissons rebelled against it, and an endeavour was made to shorten the decompression period without adding to the risks. Instead of continuous decompression they found that decompression by "jumps"—great at first and then by slower and smaller steps afterwards—gave much better and safer results.

Professor J. LORRAIN SMITH contributed a supplementary paper to that submitted at Manchester on the Staining of Fat with Aniline Dyes. The method of staining fat by basic aniline dyes depended on the hydrolysis of neutral fat yielding fatty acid to unite with the colour base on exposure to air. The staining especially with methyl violet seemed to be permanent. He now obtained permanent preparations by mounting the sections in gum acacia. By using a saturated watery solution of Nile blue sulphate A he was able to differentiate fatty acid from neutral fat, the former staining red while the latter stained blue. The transitions between fatty acid globules and neutral fat globules could be brought out in certain conditions. A demonstration of the staining results was given by beautiful three-colour lantern slides prepared by Dr. W. J. S. Bythell.

Dr. J. MILLER described the appearances found post mortem in an early case (seven days) of Acute Poliomyelitis. There was a soft swelling of the cord in the cervical region which gave on culture the staphylococcus pyogenes citreus. The various theories of causation were discussed but Dr. Miller favoured the view that the condition was inflammatory.

Dr. W. E. CARNEGIE DICKSON gave a lucid description of a unique case of Polyarteritis Acuta Nodosa. This he differentiated from periarteritis nodosa. The disease seemed first to start in the vessel wall (the muscle) and the thrombosis of the small aneurysms occurred secondarily. The paper was well illustrated and was supplemented by a microscopic demonstration. Though giant cells were found in the lesions no tubercle bacilli or spirochaete could be observed by staining, yet the idea of inflammatory causation could not be put aside.—Professor MUIR contrasted the microscopic appearances with those of a case of polyarteritis nodosa described by Bruce and himself.

Dr. S. G. SCOTT and Dr. W. H. M. TELLING exhibited the specimen and read short notes on a case of Marginal Hemorrhagic Necrosis of the Liver. The margin of the liver, except where in contact with the diaphragm, was of a much darker colour than the rest of the parenchyma and in this margin the liver cells had disappeared. The necropsy, which was unfortunately incomplete, was performed 18 hours after death and revealed no cause for this appearance.

Dr. F. G. BUSHNELL read notes on a case of Generalised Sarcoma. He was inclined to think that leukaemia might be regarded as a malignant reproduction of white blood cells.

Dr. O. POWELL WHITE and Dr. W. MAIR demonstrated an interesting case of Primary Malignant Tumour of the Liver. There were no metastases and the adrenals were normal. From its histological characters they concluded that it had arisen from a suprarenal rest in the liver. Though these rests are usually found in the right lobe this tumour was confined to the left.

Dr. F. CRAVEN MOORE gave a demonstration on a case of Endothelioma of the Stomach. He fully described a case and considered it to have arisen from the lymphatic endothelium of the submucosa.

The following demonstrations of specimens were given in various rooms by: Dr. MILLER on a case of Acute Poliomyelitis.—Dr. CARNEGIE DICKSON on Polyarteritis Acuta myelitis.—Dr. TELLING and Dr. SCOTT on Marginal Necrosis Nodosa.—Dr. BUSHNELL on Generalised Sarcoma.—Dr. of the Liver.—Dr. BUSHNELL on Adrenal Tumour of Liver. POWELL WHITE and Dr. MAIR on Structure of Trypanosomes.—Mr. H. G. PLIMMER on the Structure of Well-defined High along with a Simple Method of Obtaining Well-defined High Magnifications.—Professor MINCHIN on Division of Trypanosomes Grayi.—Dr. O. J. MARTIN on a New Water-driven Centrifuge.—Dr. O. W. ROWNTREE on an Improved Method

of Mounting Museum Specimens.—Dr. A. G. GIBSON on Malignant Tumour of the Liver.—Miss MABEL FITZGERALD on Calicines of Trichophyta from Cases of Tinea.—Dr. I. WALKER HALL on Tumour of Recto-vaginal Interspace.—Dr. J. D. THOMSON on a Parasite in the Red Blood Corpuscles of the Moie.—Professor A. S. F. GRUNBAUM on the Monkey Brain in Syphilis.

The next meeting will be held in June at Edinburgh.

EPIDEMIOLOGICAL SOCIETY.

Real and Apparent Differences in the Incidence of Cancer.

A MEETING of this society was held on Jan. 18th, Dr. JOHN F. W. TATHAM, the President, being in the chair.

Dr. E. F. BASHFORD (general superintendent of the Imperial Cancer Research Fund) read a paper on Real and Apparent Differences in the Incidence of Cancer. Having drawn attention to the great difficulty of recognising cancer clinically, and reviewed the differences in the recorded incidence of cancer in Europe, Japan, India, and other lands, and having discussed the reasons for the difference between England and Ireland, Dr. Bashford concluded that the magnitude of the differences was more apparent than real. The real differences that probably existed were obscured. It was pointed out that, contrary to general opinion, cancer was approximately as common a cause of death in Japan as in England and any weight attaching to the argument that the frequency of cancer was the result of European civilisation was thereby removed. One phenomenon of universal occurrence in civilised and uncivilised man, in domesticated and in wild animals, had more importance than all variations. The increasing frequency of cancer with advancing age was a law generally applicable to the vertebrates, whether the absolute length of life was short or long. The peculiar incidence of cancer in childhood was a special manifestation of the same law with reference to fetal structures. The incidence of cancer in the different organs of the body was analysed with the object of eliciting whether there was a progressive increase to the utmost limits of life or a rise to a maximum followed by a fall as in the case of fatal structures. The investigation of cancer could be profitably pursued statistically and experimentally either (1) from the standpoint that its incidence obeyed the definite biological laws which governed the growth and the length of life of organisms as a whole and of their individual organs because it arose *de novo* in each sporadic case; or (2) from the standpoint that the several cases occurring sporadically are causally connected by an infecting virus which produces its effects in conformity with the same biological law. The balance of evidence was stated to be in favour of the first view. Dr. Bashford concluded by expressing indebtedness for the assistance given by the Registrar General's office. In no other country had the national statistical office vouchsafed so much collaboration. In view of the fact that the only trustworthy estimation of the frequency of cancer was the national death-rate this collaboration was of unique value.

The PRESIDENT said that as regards the cure of cancer the consequences described by Dr. Bashford of the inoculation of mice with a quantity of tissue no larger than the point of a pin showed how rational was the modern surgical treatment of the disease. The early surgical removal of the small piece of tissue at the site of inoculation prevented the diffusion of the disease and the formation of secondary deposits in remote parts of the body. That evidence demonstrated the necessity for the prompt removal of the smallest growths as was now constantly advocated by surgeons and too often as constantly neglected by patients. There was little hope that within a reasonable time primary growths would be amenable to anything short of absolute removal. From the fact, however, that animals could be rendered unsuitable for the growth in their bodies of malignant processes, it was hoped that eventually the power of the resistance of the organism might be so far enhanced that the cells disseminated from the site of inoculation should be unable to grow. The manner in which carcinoma could be transmitted from individual to individual had now been so fully established experimentally as to be no longer in doubt. The experimental transference of the

animals. That was an absolute contradiction to what might have been, and as a matter of fact was, expected. That difference between young and old animals was especially important in determining the conception of the etiology of cancer. The greater frequency of cancer in later life was not therefore due to increasing suitability for the growth of cancer. Mice could be protected against successful inoculation by preceding inoculation of cancerous tissue from another mouse, but not from an animal of another species. But the fact to which Dr. Bashford attached supreme importance, and which the President said surprised him greatly, was that an equally high degree of protection could be conferred by the inoculation not of cancerous but of perfectly normal tissue, healthy blood in fact, from one healthy animal into the body of another of the same species. That fact was pregnant with future possibilities.

Dr. J. F. PAYNE said it was startling to find that young animals were more susceptible than old animals. He did not think that the statistical returns from Scotland were so good as those from England and Wales. According to statistics the first years of life showed a high rate of mortality and he thought that was due to sarcoma being so common at that age. Dr. Payne called it infantile sarcoma. *These sarcomata in the young were seldom pure and were probably of congenital origin.* In regard to the statistics for deaths from primary cancer of the liver he considered that many of those should be ascribed to secondary cases of cancer occurring in the liver arising from primary cancer elsewhere.

Dr. A. NEWSHOLME said that by the statistical method of investigation it was shown that civilisation was not an essential factor in the causation of cancer. The occurrence of cancer in fish and in the lower animals was considered to be in the same proportion as in man and it was noticed that meat-eating was not necessarily an essential factor in the causation of cancer.

Dr. F. W. ANDREWES emphasised the fact that in the early years of life the mortality from cancer was due in the great majority of cases to sarcomatous tumour, especially sarcoma of the kidney.

Sir SHIRLEY F. MURPHY said that it had been shown from the study of the figures in well-to-do and poor districts that the incidence of cancer in the rich and the poor was very much the same.

Dr. DAWSON WILLIAMS said that it was important to bear in mind the facts referred to by Dr. Payne in regard to what he had called infantile sarcoma. Attention had been drawn to the connexion between cancer and senescence, but the question arose also in regard to obsolescence. All through fetal life the process of obsolescence was going on and continued in connexion with certain organs after birth.

Dr. BASHFORD, in reply, paid a high tribute of praise to the work of his colleagues on the Imperial Cancer Research Fund, and announced that Dr. J. A. Murray had prepared a microscopical demonstration of sporadic and experimental cancer in mice for the inspection of the members attending the meeting.

LIVERPOOL MEDICAL INSTITUTION.

Acute Haemorrhagic Pancreatitis (Three Cases with Operations).—The Etiology of Inguinal and Femoral Hernia.—Ventrification of the Uterus.

A MEETING of this society was held on Jan. 17th, Mr. FRANK T. PAUL, the President, being in the chair.

Mr. W. THRELWALL THOMAS read a short note on three cases of Acute Haemorrhagic Pancreatitis operated upon with two recoveries. The first patient, a female, aged 56 years, was in *extremis* 35 hours after the onset of acute abdominal pain with vomiting, quickly becoming fatal. On incision, under eucaine, blood-stained effusion escaped from the abdomen and the omentum was in a condition of fat necrosis. The patient succumbed a few hours later. Post mortem, haemorrhagic pancreatitis was found. The second case occurred in a woman, aged 21 years, in whom the symptoms resembled perforation of a gastric ulcer, but with rise of temperature. The condition became rapidly worse and on operation fat necrosis of the omentum was found with copious effusion of blood-stained material into the peritoneal cavity. The lesser peritoneal sac was drained by a loin drain and an anterior tube as well as a tube into the pelvis. 35 gall-stones were removed from the gall-bladder and the latter was drained.

The pancreas was much enlarged but without hæmorrhages. The patient made an uneventful recovery. The third case which occurred was that of a man, aged 40 years. The onset was acute and a diagnosis of intestinal obstruction was made. There was a rise of temperature with slight vomiting and the abdomen became rigid and tender. On incision, 36 hours after onset, fatty necrosis in the extra-peritoneal tissue, omentum and mesentery was found. The gall-bladder, which was full of inspissated bile, and the peritoneal sac were drained as in the previous case. The pancreas, which was very much enlarged and hæmorrhagic, was incised. The patient made a good recovery, but with a pancreatic fistula which remained open for six weeks. Mr. Thomas then discussed the etiology and treatment of the disease.—The cases were discussed by Mr. R. W. MURRAY, Mr. G. S. STANSFIELD, and Dr. A. G. GULLAN.

Mr. R. W. MURRAY read a note on the Etiology of Inguinal and Femoral Hernia, based on a series of post-mortem observations made upon 200 persons in whom during life there was no evidence or history of hernia. Amongst the 200 bodies examined, 68 peritoneal diverticula were found, 52 in the femoral and 13 in the inguinal region. Arguments were advanced in favour of the saccular theory of hernia, and Mr. Murray contended that all the evidence they at present possessed was in favour of the belief that a preformed sac is the essential cause of inguinal and femoral hernia at all periods of life.—Dr. T. R. BRADSHAW said that granting that an oblique hernia came down the inguinal canal, a direct inguinal hernia could not have such an origin. One important clinical fact made it difficult for him to accept the view that the tunica vaginalis was frequently found communicating with the peritoneum in persons who were not the subjects of herniæ—viz., the extreme rarity with which the fluid of ascites was found in the tunica vaginalis. He had only once seen such a case, more than 20 years ago, and in that case the fluid could easily be made to pass from the tunica vaginalis into the abdomen, or *vice versa*, by changing the patient's position.—Mr. Murray's paper was also discussed by the PRESIDENT, Mr. F. O. LARKIN, and Mr. K. W. MONSARRAT.

Dr. HENRY BRIGGS read a paper on Ventrofixation in the Treatment of Backward Displacements of the Uterus. The exemption of the "blooming, happy, and fertile" woman from any treatment whatever was claimed. During the child-bearing period of life he advocated the limitation of pessary treatment to recent cases of retroversion or retroflexion after manual reduction of the displacement, and for chronic backward displacement of the uterus with complications he urged the superior position of ventrofixation and founded his opinion upon the clinical records and the after-histories of 203 cases treated by him during the past seven years. In all the 203 cases the patients recovered. The after-histories of all the patients, with the exception of the nine unobtainable and a few too recent to be of value, were added. An analysis of the cases in the five groups, A, B, C, D, and E, illustrated the extent and character of the complications of backward displacements of the uterus. Table A: 98 cases of backward displacement before operation were characterised by (a) uterine descent in a minor degree in all of them; (b) ovarian prolapse, on one side 13, on both sides 26; (c) inflammatory cystic changes in the ovary, 3; and (d) apoplexy and thickened capsule of the ovary, 6; and were treated by ventrofixation of the mobile uterus; the relief afforded was complete in 64, partial in 22, and disappointing in 7 patients; one single woman, aged 23 years, who had suffered from distressing dysmenorrhœa since puberty, was totally unrelieved by ventrofixation performed after a previous dilatation and section of the cervix had also failed to relieve her. Table B: 41 cases, ventrofixation with perineorrhaphy, colporrhaphy, trachelorrhaphy, dilatation, and curettage, i.e., a combination of two or more operations of which one was ventrofixation, showed relief complete in 24 partial in 9, and disappointing in 5 patients. Table C: 24 cases ventrofixation with separation of adhesions and in seven instances salpingostomy (conservative operations); recorded instances of relief complete in 13, partial in 8, and disappointing in 1 patient. Table D: 31 cases, ventrofixation with removal of one tube and ovary; relief complete in 20 and partial in 7 patients. Table E: 9 cases, ventrofixation with removal of both appendages; relief complete in 7 and partial in 1 patient. Complete relief after ventrofixation persisted throughout all the groups in almost the same proportion of cases. That is substantial evidence of a pathological

element in the aggregate of the backward displacements in Table A. The lowest proportion of complete relief followed the total conservative treatment of pelvic peritonitis, due probably to obscure, active or latent, germ infection: (Table C) in 24 cases pregnancy is unknown after operation, except in one instance. Dr. Briggs then explained his preference for purely parietal peritoneal fixation at the summit of the empty bladder at the lower end of a two-inch abdominal incision ending one inch above the pubic symphysis. The Trendelenburg position enabled the operator to suture closely this central lowest portion of the parietal peritoneum to the middle two-fourths of the lower half of the anterior surface of the uterine body, in which the sutures were planted through muscle one-eighth of an inch deep. No. 2 Chinese silk was used for the fixation. Dr. Briggs said he had discontinued since 1903 catgut for this purpose only. The abdominal wound was closed in three layers by catgut sutures, the finest catgut always for the skin. The advantages of peritoneal fixation were the slight uterine mobility it insured; in the latter advantage Dr. Briggs agreed with Küstner and the further advantages of less inconvenience to the bladder and the ease and safety of subsequent labour and pregnancy were realised. Dr. H. Russell Andrews, in his digest in 1905 of all ventrofixations then published, had found the least interference with labour after peritoneal fixation. Amongst Dr. Briggs's cases in Table A alone 22 women had borne 32 children; normal labour was the rule and easy forceps delivery the exception. In one patient who had had five children (twins once) since the operation uterine inertia during the third stage had been observed and was not noted before operation by Dr. J. Masson of St. Helens. Dr. Briggs said that cervical and intra-uterine, vaginal and perineal complications were advisedly treated if necessary before the abdomen was opened, that abdominal section dealt with the peritonitic bands and their causes, and that ventrofixation completed a safe and satisfactory operation for retroversion or retroflexion during the child-bearing period of life.—Dr. T. B. GRIMSDALE thought that the title of the paper exaggerated the importance of the backward displacement of the uterus and seemed to imply that all the symptoms were due to the backward position of the uterus, whereas all of the cases referred to showed other pathological conditions which were in all probability responsible for the symptoms present, the backward displacement being merely an incident in the case. As to the operation of ventrofixation itself, it was safe and effective if properly performed, though the holding capacity of the bladder seemed to be diminished slightly by it.—Dr. W. BLAIR BELL thought that the pathology of retroversion and retroflexion was not always the same. He had applied his own views to Dr. Briggs's statistics and found there much to support those views; for instance, he found that of the total failures 75 per cent. were in single women, and further, that of the cases, whether single or married, complaining of menorrhagia 85 per cent. were completely cured, while only 62 per cent. of the total number of cases were cured. These facts he considered important, as were some others to be deduced from the figures. He (Dr. Bell) thought all forms of ventrofixation unsurgical and dangerous, particularly the operation of peritoneal attachment described. He much preferred Gillian's operation, which he had now performed in a modified form for over a year, or one of his own, first performed in March last, in which a loop of round ligament on each side was brought through the broad ligament and fixed behind the uterus, an operation which had been recently independently described.—Dr. ARTHUR J. WALLACE remarked that ventrofixation was not a scientific procedure, but in default of a better it was satisfactory in that it relieved the patient. The principal drawback was that between the utero parietal attachment, the abdominal parietes, and the bladder there existed a potential opening or tunnel through which a loop of intestine might pass and become strangulated. A perfect procedure should bring about the formation of a complete peritoneal septum between the uterus, the bladder, and the abdominal wall. When the direct utero-parietal attachment stretched a little, as it appeared to do usually, there would result a kind of anterior mesometrium dividing the utero-vesical pouch into two halves, without any opening through which intestine might pass.—Dr. J. E. GEMMELL, Dr. E. T. DAVIES, and Dr. BENNETT also took part in the discussion on the paper.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Loss of the Stereognostic Sense.—Some Improvements in Cutaneous Therapeutics.—Electrical Conductivity of the Blood and Urine in Health and Disease and as a Test of the Functional Efficiency of the Kidney.—Some Cases treated by Bier's Method.—Notification of Infectious Diseases

A MEETING of this society was held on Jan. 16th, Dr. J. O. AFFLECK, the President, being in the chair.

Dr. BYRON BRAMWELL exhibited a case showing Loss of the Stereognostic Sense. The patient, a man, aged 37 years, on Jan. 30th, 1905, was struck on the left side of the head with a heavy stone. He remained unconscious for four days. There was a large hematoma over the left side of the head, but no fracture of the vault could be made out. It was thought, however, that the base of the skull had been fractured because of hemorrhage from the left ear. Weakness of the right arm persisted for some time. Later the speech became stammering in character. He remained in hospital for some time. There were marked disturbance of sensation in the right hand, imperfect localisation, also disturbance of sensation to pain, heat, cold, &c., and total inability to determine what was in his hand when his eyes were closed (stereognostic sense). Under suggestive treatment speech improved. On Nov. 24th, 1906, he returned with stammering speech and loss of sensation over the whole of the right side; there was no wasting of the muscles. On shaving his head a distinct depression was seen over the left parietal bone behind the motor areas and closely corresponding to the area for the stereognostic should sense. The question remained if a section of bone be removed to relieve any compression which might exist.

Dr. W. ALLAN JAMIESON, under the head of "Some Improvements in Cutaneous Therapeutics," showed: 1. Epicolloid and its Combinations. He said that in 1893 Dr. Leslie Phillips directed attention to a proprietary substance called "Kristaline," a celluloid varnish which was used to give a transparent and indestructible protection to metal ornaments as a colourless film which prevented oxidation. This he stated was a solution of pyroxilin in wood naphtha or methyl alcohol. It had a peculiar odour, recalling that of amylnitrite or pineapple drops. This he recommended as a substitute for collodion but it never obtained the notice which it deserved. Much more recently a similar preparation, having the attractive name of "New Skin," had been introduced and had a considerable reputation and sale. At Dr. Jamieson's request Messrs. Duncan, Flockhart, and Co. had prepared a solution of pyroxilin in acetic ether, to which they have given the provisional name of "Epicolloid." This had been tinted a pale pink in order that it might more nearly approximate the colour of the skin. It had the advantage over collodion, even the flexible sort, that, drying more slowly, it formed a closely adherent, smoother, finer, more pliant, and impervious coating, firmer than "New Skin" and less pungent than "Kristaline." It was useful when any abraded surface, after purification, called for sealing up, and particularly so in the treatment of the troublesome cracks in the lips, so apt to occur in the central commissure or at the angles. If a thicker layer was required and opacity was not objected to, this combination with oxide of zinc would be found handy and was adapted for the early stage of herpes zoster. Salicylic acid could be incorporated with it, and in this form it was appropriate for warts and corns. 2. Ichthyol Court Plaster. Dr. Jamieson said that sometimes they wanted a dressing of a more solid kind, and for such cases a thin plaster was the most efficient. British court plasters were all, in his experience, spread on too thick a silk, hence they could not be got to lie close enough to the surface; they tended to curl up, and in all cases soon separated or washed off. He had found the ichthyol court plaster quite an ideal one, especially for small spots of rodent ulcer after scraping and cauterisation with fused chromic acid. A piece of this slightly moistened, adjusted, and pressed down formed a covering scarcely noticeable. It would adhere for days, and it was essential for the success of this method that the part should be kept dry and undisturbed. Applied to the red portion of the lip, it was indistinguishable from the natural surface. There were many other uses for

which these articles could be employed, but to enumerate them would lead into too long a dissertation.

Dr. DAWSON F. T. TURNER read a paper on the Electrical Conductivity of the Blood and Urine in Health and Disease and as a Test of the Functional Efficiency of the Kidney. He said: It would appear from the observations, now some 1000 in number, that the observed resistance of a normal urine amounts to about 250 ohms in this apparatus (specific resistance 42.5 ohms), and from experiments on artificial urines it was found that the resistance depends only upon the ionic concentration—i.e., upon the salts, acids, and bases, and of these NaCl is by far the most important; the resistance for practical clinical purposes can be regarded as being unaffected by the presence of albumin, sugar, blood, and other non-electrolytes. In health the resistance is low, and the lower it is, other things being equal, the healthier the condition. In certain acute and chronic diseases a very high resistance is found constantly present. Acute croupous pneumonia is an example of the former and diabetes mellitus of the latter, but the resistance is also high in kidney disease and in pernicious anemia. The resistance of the urine may rise in a characteristic way during an attack of sick headache. Within the last ten years I have made many attempts to measure the electrical resistance of the blood; various methods (dilution with distilled water, measurement of the resistance of a column of blood in a capillary tube, &c.) have been employed and subsequently rejected. The principal difficulty depends upon the fact that only very small quantities of blood can generally be obtained at one time. The best and most recent results were obtained by placing five cubic millimetres of freshly drawn blood between two cup-shaped electrodes, three millimetres in diameter, coated with spongy platinum, and fixed at two millimetres apart. The length of the cylinder of blood between the electrodes is of less importance than its diameter, because the cross-sectional area varies with the square of its diameter and the resistance of a conductor varies directly as its length and inversely as its cross-sectional area. By employing electrodes of fixed diameter and at the same distance apart and the same quantity of blood for each observation, and by making the measurement at once, before such changes as coagulation or evaporation could occur, fairly consistent results were obtained. Still, as in all blood-measuring operations, practice and the personal equation come in. The average observed resistance of normal blood measured in this way is 900 ohms, but it may fall to 700 or rise exceptionally to 1600 (specific resistance about 150 ohms). The resistance depends again upon the salt concentration of the blood and upon the relative volume of the corpuscles to the serum.¹ These have opposite effects. Thus, the greater the salt concentration the lower the resistance, but the greater the number of red cells present the higher the resistance. A blood of high resistance indicates that the proportion of salts in the blood is small or that the proportion of corpuscles present is large. Hence, a high resistance of the blood but a low resistance of the urine is indicative of health. Changes are to be observed in disease and those changes are in the direction of a diminished resistance; thus in kidney disease, in chlorosis, anemia, and in pernicious anemia, the resistance will be found to be low and sometimes, as in pernicious anemia, very low, even to less than half that of normal blood. In these conditions the blood we must conclude contains fewer blood corpuscles or more salts or both. We can throw light on this question by counting the blood corpuscles and by examining the resistance of the urine; the latter will, as already explained, be found to be high. Dr. F. O. Hopkins (Guy's Hospital Report for 1891) reports that the salts were deficient in the urine in five cases of pernicious anemia which he examined. Proceeding in this way I was led to compare systematically the resistance of the blood and the resistance of the urine and to originate a ratio which after consultation with Dr. G. A. Gibson he has termed the "hæmrenal salt index" or the ratio of the electrical resistance of the blood to the electrical resistance of the urine. In health this would be equal to three, four, or five whole numbers—viz., $\frac{900}{225} = 4$.

The higher this number is the healthier, other things being equal, is the condition of the patient. If the index increases it indicates that the blood contains fewer salts or is richer

¹ Dr. Turner expressed his indebtedness to Professor G. N. Stewart for drawing his attention to the part which the blood corpuscles play in altering the blood resistance, and to Mr. T. M. Wilson's conductivity measurements and cryoscopic observations.

in corpuscles, and that the urine contains more salts and that the functional activity of the kidney is increasing; if the renal index diminishes then the kidney is becoming sluggish and less efficient. Dr. Turner narrated several cases to illustrate the fact that where the index figure was low the kidney was inefficient and frequently diseased as proved by subsequent operation. It would probably be found in the future that the method would be of even more value in surgical affections of the kidney in order to ascertain the renal capacity before deciding whether to undertake an operation. He had not had sufficient opportunities of comparing the method with cryoscopy to permit him to draw any conclusions as to their relative value; in the case of Mr. Q. A. Cathcart the indications of both methods were in agreement, but he would point out at any rate that this was a much more rapid method of clinical diagnosis than cryoscopy and that it was another example of the application of precise scientific measurement to clinical medicine and surgery.—The PRESIDENT, Dr. HARRY RAINY, and Mr. J. M. COTTERILL took part in the discussion which followed.

Dr. T. M. BURN-MURDOCH read a note on Some Cases treated by Bier's Method. The practical nature of the following short notes on some cases treated by Bier's method, he said, was his excuse for bringing them before the society, as they afforded additional proof of the value of Bier's method to the general practitioner. The first case was that of a lad suffering from an injury to his shin, the result of a knock against a form received on Jan. 18th, 1906. He was first seen on the 20th when he complained of acute throbbing pain over the centre of the tibia with swelling of the part. A superficial grazed wound was present. His temperature was normal. By evening his temperature had risen to 102.2°F ., his pulse was 120, and pain was acute. The symptoms so resembled those indicative of an acute osteitis or quite probably an acute osteomyelitis that it was thought an operation would be necessary to check the disease. Mr. Cathcart saw him with Dr. Burn-Murdoch late at night and suggested applying Bier's bandage and postponing operation. This was done and the temperature steadily fell, becoming normal on the 23rd and remaining so with the exception of one slight rise. The pain subsided immediately after the application of the bandage and the boy slept fairly well. Slight subperiosteal suppuration occurred but no operative treatment was necessary. The boy made a rapid recovery, re-entering school in about a month's time. The second case was that of a lad who was seen first on May 30th at 4 o'clock in the afternoon on account of pain and tenderness in the lower end of the tibia. The temperature was then 100.2° . By 9 P.M. the temperature had risen to 103.5° . The pulse was 120 and the pain was acute and throbbing. The pain was localised to about three inches of the lower end of the tibia. It was thought the case might require surgical interference so Mr. Cathcart was asked to see him. He concurred in the diagnosis of acute osteomyelitis, but thought Bier's bandage might safely be tried. This was done with marked relief of all symptoms. The pulse on the 31st—the day after the application of the bandage—ranged from 74 to 98. The temperature did not exceed 102° . On June 1st the pulse did not exceed 90 nor the temperature, 101° . By the 8th the temperature and pulse were normal, both having come down gradually. On June 21st slight periosteal thickening remained at the lower end of the tibia with very slight pain on pressure. The boy re-entered school about five weeks from the commencement of his illness. The third case was one of obstinate ulcers of the leg. The patient, a female, was first seen in the summer of 1905 for incipient ulcers of the leg. These ulcers were preceded by nodular swellings which gradually softened, became blue-red in colour, and then broke down, leaving indolent tuberculous looking ulcers with callous edges. Dr. Burn-Murdoch recognised them as similar to a series of very intractable sores he had twice had to treat in a man with a marked tuberculous history, as evidenced by cicatrices about the neck and axillae. They occurred both on the patient's back and legs. The results of innumerable kinds of treatment, including some suggested by a consultant, proved so unsatisfactory that it was decided at once to send the patient in question to Chalmers Hospital, where she went on August 8th, 1905. Many kinds of dressings were applied without benefit. On August 22nd the ulcer was excised, or probably two of them. No tubercle bacilli were found. The healing process was not satisfactory

and soon broke down, necessitating scraping on Sept. 6th. On Nov. 13th the patient was discharged with the ulcer not fully healed and an unhealthy tuberculous-looking scab was also present. The wounds almost immediately opened up again. She spent a short time in Edinburgh but was sent to Callander for about three months during December, January, and February. The late Dr. MacLaren, to whose care Dr. Burn-Murdoch sent her, urged the importance of rest and open-air treatment, and subsequently informed the latter that she had had an attack of pleurisy from which she recovered well. She returned to Edinburgh early in March with an ulcer of about the size of half a crown on the leg. She sought hospital advice and was advised to have another operation but would not consent. Dr. Burn-Murdoch saw her on March 7th and employed ordinary cleansing dressings to the wound, making her rest in bed. After a few days Bier's bandage was applied with the most beneficial result. The ulcer, which he had despaired of healing, closed over in, to him, an astonishing manner in ten days. She was able to go to Orkney in the first week of April. Dr. Burn-Murdoch heard from her only the other day that the ulcers remained soundly healed. He had had several cases of acute osteomyelitis with symptoms similar to those described in Cases 1 and 2 operated on with the happiest results, but the period of time that the patients took to convalesce and which elapsed before they could return to work greatly exceeded that in the cases described. The history of the ulcer case, of course, spoke for itself.

Dr. ALEXANDER JAMES read a note on the Notification of Infectious Diseases. He said that he was one of the practitioners who believed that in the causation of phthisis infection was a factor of such relatively small importance that the compulsory notification of this disease as an infectious disease was, in the majority of cases, quite unnecessary. Further, he was one of those who held that its compulsory notification in all cases would be mischievous as diverting attention from the most important factors in its causation and would be harsh and cruel to the individual, as it would handicap still more heavily those who were struggling against their infirmity to earn their living. The gist of the argument of those who were in favour of the compulsory notification of phthisis was as follows: Granting that the tubercle germ was present in a large number of healthy individuals (from 40 to 90 per cent.), and granting that a lowering of the general nutrition gave this germ its power to produce its ravages, yet if notification were insisted on this germ would in time be stamped out and thus, however low the general resistance might be, the germ would not be there to make matters worse. In Edinburgh the compulsory notification of infectious diseases had been in force for over 20 years and thus they could compare the mortality from such diseases for periods of years before and after notification. They might therefore form an idea of what notification had done in the way of prevention. Taking phthisis mortality first the chart exhibited showed that it had undergone a very distinct and marked diminution and this was due to the gradual and progressive improvement in the condition of life of the people in the three towns (Edinburgh, Dundee, and Aberdeen). The improvement in the mortality from typhoid fever was gradual but not so marked as in the case of phthisis. The same was true with the group as in the case of diphtheria and croup, but again it was difficult to detect any distinct improvement during the notification period. With scarlet fever improvement was also shown but in this case the indications were that notification had produced improvement. With measles it was obvious that after notification and efforts to stamp out the disease the mortality had actually increased. Dr. James said that notification and efforts to stamp out the germ had at least not been so successful as was anticipated and that the improvement had not been at least more marked than it had been in the case of the phthisis mortality without notification at all. Such being the results of notification what was to be expected of a similar notification and efforts to stamp out the germ in the case of pulmonary phthisis? 1. Differences of opinion existed as regards the mode of entrance of the tubercle germ into the human body; some, like von Behring, believed that it entered mainly in infancy with the milk from tuberculous cows; others, like Koch, believed that the disease was caused mainly by inhalation of particles from dry tuberculous sputum suspended in the atmosphere. It was evident that, according to the first view, notification of phthisical patients

was unnecessary; according to the second, tubercle in dairies might be neglected. There were some also who believed that though the tubercle germ could not arise *de novo*, yet as a result of unhealthy conditions its virulence might be sometimes *de novo*. What Dr. James wrote 15 years ago he still believed in, that "you may kill off every tubercular cow, you may banish every phthisical patient, the conditions of life of men and cows remaining the same, you will have tubercular diseases back again in six months." 2. There were differences between the phthisis germ and the germ, of those other infectious diseases in that the tubercle germ having entered the body only did harm when the individual was, or got into, a lowered state of health. The individual, therefore, might never suffer from phthisis at all, or, if he did, his illness might come on at times and places when and where there were no tubercle germs in his surroundings at all. As far as directing attention to the source of his disease is concerned notification might be useless and misleading. 3. Efforts made to treat pulmonary phthisis by combating the germ in the manner in which such truly infectious diseases as rabies, diphtheria, and tetanus are treated have been found to be not only useless but disastrous. Many could remember the confident and high hopes engendered by the tuberculin treatment of Koch. It seemed to Dr. James that the same type of mind which predicted triumphant success in the case of this treatment directed to the germ was to be discerned in those who now as confidently predicted the benefits to be obtained from notification and efforts to stamp it out. It is well known that the effects of the original tuberculin treatment were disastrous. This tuberculin was now known as the "dangerous tuberculin," and its use now in the method advocated 15 years ago would render its employer liable to a charge of manslaughter. It was stated that the profession was unanimous in favour of notification. Dr. James said that this was simply not true. Everyone admitted that notification and what it entailed had advantages, but they must also acknowledge that it had weaknesses and disadvantages. Dr. James thought that if they balanced these evenly they would agree in advising that compulsory notification of pulmonary phthisis was necessary in all cases where the patient's circumstances and surroundings formed a menace to the public health. Unsparring efforts to improve the conditions of life of the people at home and at work will be certain at one and the same time to increase the resisting power of the individual against the germ and to destroy the virulence of the germ itself.—Dr. BYRON BRANWELL stated that 53 of the largest cities in America had adopted the compulsory notification of phthisis, and that the procedure was already in action in these towns. The leading American physicians were thoroughly convinced of the necessity for compulsory notification. The sources of the tubercle bacillus were from human beings or from bovine and lower animals. In practice, however, the real source was from the sputum. If they could disinfect and destroy the tubercle bacilli they should go far to eradicate phthisis.—Dr. T. F. S. CATVILL said that with the same facts as Dr. James had employed he had arrived at exactly opposite results. It was easy to stamp out tubercle in animals. In the human being the infection might be slight but then it was continuous, acting for months or even years. He thought that the great increase in the number of cases of infectious diseases was due to the greater movement of the populace now as contrasted with former periods.—Dr. GEORGE HUNTER and Dr. S. MACVIE (Chirside) also took part in the discussion, and Dr. JAMES replied.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.—A meeting of this society was held on Jan. 4th, Dr. R. H. Woods (Dublin), the President, being in the chair.—Mr. Charles J. Heath showed a further series of cases illustrating the successful treatment of Chronic Suppuration of the Middle Ear without removal of the drum or ossicles or loss of hearing.—Mr. H. Clayton Fox asked wherein Mr. Heath's operation was superior to that method of Schwartz which consisted in clearing out the antrum and its environs and syringing through into the tympanum without the disadvantage of having to remove the posterior meatal wall. He expressed a fear that the adhesions left after Mr. Heath's operation would induce tinnitus at some future date and necessitate ossiculectomy.—Mr. Heath replied that trustworthy information as to the state of the

tympanic cavity could not be obtained through the intact meatus. Only after removal of the posterior meatal wall could efficient investigation of the tympanum be carried out. Herein lay the superiority of his operation to that modification of Schwartz's operation mentioned by Mr. Clayton Fox. From the information thus obtained the surgeon could decide whether the case was one which called for the complete radical operation, or one where the modification suggested by himself would suffice. The cases which he exhibited on the present occasion included, besides instances of ordinary suppuration of the middle ear, two cases of attic suppuration with perforation in Shrapnell's membrane, one case of facial paralysis, and one case in which ossiculectomy had previously been performed without remedying the suppuration. The antrum was the key to the position in nearly every case of suppurative ear disease, and if the disease in that cavity were cured the morbid changes in the attic and tympanum would disappear spontaneously.—Mr. Mayo Collier showed a case of Extensive Epithelioma of the Floor of the Mouth, beginning in the frenum linguae, which he had removed, along with the submaxillary glands, by a new method of operation.—Mr. Harold S. Barwell showed a case of Tuberculous Ulceration of the Pharynx in a male, aged 17 years. The patient was the subject of pulmonary tuberculosis in an early stage affecting both upper lobes. The ulcer manifested typical tuberculous characters; it had a flat, smooth, pale floor with edges not infiltrated. The larynx was healthy.—Mr. W. J. Chichele Nourse said that he had recently seen a case of tuberculous pharyngeal ulcer which was deep with raised edges, exuberant granulations, and marked scarring, quite like a gummatous ulcer. There was no history of syphilis, however, and a scraping from the ulcer contained tubercle bacilli.—Mr. Barwell exhibited a case of Gumma (!) of the Larynx, which was shown at the last meeting, and in which a rounded soft swelling over the right thyroid ala had been opened and the cavity curetted. On laryngoscopic examination little change was to be detected in the tumour. The external wound had healed. The microscopic appearances of the tissue removed were suggestive of carcinoma, according to Dr. Robert S. Trevor and Dr. V. H. Wyatt Wingrave.—Mr. Nourse exhibited a case of Multiple Sinusitis showing the result of Radical Operation. He said that the disease had probably begun in the left ethmoidal region and had led to symptoms of left frontal sinusitis. On opening the frontal sinus the cavity was found to be very small and packed with greyish mucus. At a later date the left antrum was radically dealt with through an opening in the canine fossa, and at this operation the ethmoidal region was cleared through the inner wall of the antrum. The result both as regards the suppuration in the nose and the external scar was excellent.—The President drew attention to the rule sometimes laid down that a complete and entire removal of the anterior frontal sinus wall was necessary to insure the success of the operation. He, however, believed that as much, and no more, of the anterior wall should be removed as would give complete access to the cavity, so that the whole of the diseased lining membrane could be removed. If that were effectually done, as he found in his cases, the sinus being left open would heal up from the bottom in from six to eight weeks. Unless the bone around the fronto-nasal duct was diseased he did not enlarge that canal.—Mr. Nourse, in reply, said that he agreed with the President as regards the removal of the anterior sinus wall but differed from him in regard to the external wound, which he was in the habit of closing, while he inserted a large drainage-tube into the infundibulum long enough to extend from the frontal sinus through the infundibulum to a little beyond the nostril so as to prevent re-infection of the sinus from the nasal cavity.—Mr. Mayo Collier read a communication dealing with a case in which a hard mass in the floor of the mouth, consisting of a large tuberculous gland with nodules of hard fibrous tissue, had been mistaken for a salivary calculus by himself and several other surgeons.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.—A meeting of this society was held on Jan. 14th, Dr. J. Lindsay Steven, the President, being in the chair.—Dr. G. H. Edington showed a specimen of a Perforated Peptic Ulcer of the Jejunum occurring after Gastro-enterostomy. The patient, a male, aged 46 years, was operated on seven years previously by Dr. T. K. Dalziel for pyloric obstruction with symptoms of six years' duration, an anterior gastro-jejunostomy being performed. Five years

later Dr. Dalziel removed a gall-stone from the cystic duct. The patient remained free from all stomach symptoms after the first operation. Early in November, 1906, he was admitted to the Western Infirmary with symptoms of perforated ulcer of 25 hours' duration. Dr. Edington opened the abdomen and found a perforated ulcer of the jejunum just beyond the gastro-jejunal communication. He closed the ulcer with Lambert sutures and covered over the part with a flap of omentum. The patient, who was collapsed on admission, did not rally and death took place three hours later. The post-mortem examination showed a healed ulcer at the commencement of the duodenum with constriction of the pylorus. The gastro-jejunal opening admitted the cone to a diameter of one and a half inches. The perforation in the jejunum had occurred in a portion of an ulcer the margin of which reached to the gastro-jejunal orifice.—Dr. A. N. McGregor showed a patient who had a Rupture of the Vagina with Protrusion of Bowel which he had successfully treated by replacement and suture. The patient was a woman aged 63 years, who while engaged in carrying coals into her house experienced pain and discomfort internally. Feeling ill she took some stimulant on going to bed. She woke up in the small hours of the morning and in getting out of bed fell across a chair and sustained a blow on the perineum. Immediately thereafter blood issued from the vaginal orifice and the bowel also prolapsed through it. Three days later she called in a medical man who sent her into hospital. On admission a large mass of bowel was seen in front of the vulva protruding from the vagina, of about the size of two closed fists. The coils of intestine were matted together with fibrinous exudate and pus was present in the sulci. The loops of bowel were separated and on examination an opening in the posterior wall at the upper end of the vagina was found. An inch or so of bowel was pulled out through the opening and found not to be strangulated. The whole mass was carefully cleansed and replaced into the pouch of Douglas, the vaginal opening was stitched up, a gauze drain was inserted, and the vagina was packed with gauze. The vaginal packing was changed daily and the gauze drain was removed on the seventh day. On the fourteenth day she was allowed up and at the end of three weeks was dismissed well. The immediate cause might have been a proidentia on the first occasion and a perineal concussion in the second instance determining a rupture, or at the second accident a part of the chair might have penetrated through the vagina, but no further injury of the vulva, perineum, or vagina was noted. A vaginal examination six weeks later by Dr. J. K. Kelly revealed no abnormality save the presence of the scar. The uterus and appendages were normal but senile in character and no uterine or ovarian tumour was present. There was no history of previous vaginal or uterine disorder and the patient had had ten children normally.—Dr. McGregor showed for Dr. J. A. Adams a Fibromyoma of the Ovary removed from a patient suffering from acute intestinal obstruction. The patient was operated on five years previously on account of strangulated femoral hernia of the right side. On the present occasion a Littre's hernia of the left side and the tumour of the ovary were found. The former was relieved and the latter was removed.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 16th, Mr. E. Powell, the President, being in the chair.—Mr. A. R. Anderson showed the Uterus with Contained Fœtus and Placenta of a primipara, aged 35 years, the subject of fibromyoma necessitating hysterectomy at four to four and a half months. Recovery had been rapid and uneventful.—Mr. Anderson also showed a specimen of true Papilloma removed from the posterior part of the bladder floor in a man, aged 36 years. It was a large mushroom growth, pedunculated, and had several times caused retention, there being also and had several times caused retention, there being also cystitis and hæmaturia. To prevent an undue enlargement of the suprapubic incision the growth had been removed in four pieces with scissors and the patient had made a complete recovery in every way.—Dr. F. H. Jacob read a paper on the Diagnosis and Treatment of some Diseases of the Skin. In tracing the diagnostic points of lupus special stress was laid on the daylight appearance of the yellowish, translucent, apple-jelly-like nodules, which did not disappear on pressure with glass. On the hands and in the similar regions the typical nodules might be masked by the occurrence of a chronic inflammatory thickening. A case of

tertiary syphilis was related in a man who had been under treatment for lupus for five years by different practitioners without success. In the later stages the appearance of a large V-shaped ulcer dividing the whole thickness of the upper lip, as well as some plaques with ill defined margins on the face, made a correct diagnosis easier, and suitable anti-syphilitic treatment brought about a cure. Under the head of treatment Dr. Jacob pointed out that x rays gave good results with the least expenditure of time. The resulting scar was not always slightly and was liable to produce telangiectases, for which pure carbolic acid was often the most efficient application. Referring to the typical appearance of lupus on the gums and the punched-out ulcers it gave rise to on the hard palate its behaviour in the latter position was contrasted with similar ulcers due to syphilis, in that lupus, although a tuberculo-sis, never caused ulceration in bone. What were known as tuberculous gummata of the skin constituted a serious affection and of three such cases in children under his care all had subsequently succumbed to meningitis. The erythematous variety of lupus was often readily cured by the full doses of quinine recommended by Payne. The sebaceous variety was more troublesome but would yield to a single burning with x rays. The framboesial variety of syphilis was next described; it was amenable to antisyphilitic treatment if pushed. The distinctions between psoriasis, syphilitic psoriasis, and seborrhœa were then touched on and attention drawn to Whitfield's observation as to the frequent presence of the bottle bacillus in the last mentioned. Photographs were then shown and described of several interesting skin conditions, such as a tuberculous warty condition successfully treated by x rays; recurring raised vaccination marks; an elderly woman with papules at the nose tip diagnosed as acne necroticans serpiginosa; a baby with well marked urticaria pigmentosa; ringworm of the nails; and an epileptic girl of deficient intelligence with adenoma sebaceum on the face and pendulous adenomata on the back.—The paper was discussed by the President, Mr. A. R. Tweedie, Dr. J. S. Bolton, and Dr. W. Hunter, and Dr. Jacob replied.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 11th, Dr. John Brown being in the chair.—Dr. Leslie Buchanan showed two cases of Birth Injury of the Cornea. Both were typical illustrations of the results in later life of the rupture of the posterior surface of the cornea in consequence of extreme pressure upon the head of the child by instrumental delivery. Five cases of this kind had now been seen by him within three years. The condition was very easily overlooked. Two or more faintly marked curved lines might be seen crossing the cornea, usually in a nearly vertical direction, inclosing a space shaped like a broad barrel-stave. In any case where a high degree of astigmatism (usually myopia) was found in one eye only, the characteristic lines of refraction opacity should be looked for, either with the ophthalmoscope or by focal illumination, and the history of the birth inquired into.—Dr. Buchanan also read notes of a case of Metastatic Ophthalmitis which had occurred in the course of a case of pneumonia. The eye affection first showed itself on the fifteenth day of the disease, after the crisis, and at the same time the temperature again rose and became remittent. No cardiac murmur could be discovered. The eye was totally destroyed. The patient ultimately died and a necropsy showed that there had been malignant endocarditis. The pneumococcus was found both in the eye and in the splenic pulp.—Dr. W. F. Somerville read a paper on the Treatment of Neurasthenia. He emphasised the necessity for complete isolation in a neurasthenic home as opposed to an ordinary nursing home. Patients were kept in bed for three weeks and then allowed up. They were given a very full diet, including from 20 to 80 ounces of milk per diem. General massage, medical exercises, and the high-frequency current were also employed. The daily routine was so arranged that there was no time for dullness. During the last two or three weeks of their stay they went out shopping and this made the change of returning to their homes less abrupt.—Dr. W. S. Syme showed: 1. Two cases of Ossiculotomy (or patients in whom the operation of Ossiculotomy had been performed. The operation was limited to the tympanum indicated where the disease was limited to the ossicles, the and ossicles or attic. The amount of discharge, the position of the perforation, and information obtained by the use of the probe were the chief points in determining such limitations

of the disease. 2. A patient with Right Recurrent Laryngeal Paralysis, thought to be due to an old-standing tuberculous lesion at the right apex.

LARYNGOLOGICAL SOCIETY OF LONDON.—A meeting of this society was held on Jan. 4th, Dr. J. B. Ball, the President, being in the chair.—Dr. P. Watson Williams showed stereoscopic skiagraphs of the Nasal Accessory Sinuses.—Dr. St. Clair Thomson and Dr. Herbert Tilley exhibited specimens of Cartilage and Bone removed by means of Killian's submucous resection operation for the correction of deviations of the septum. A discussion followed on the relative merits of local and general anaesthesia for this operation; on this point opinions appeared to be divided.—Dr. W. Jobson Horne exhibited macroscopic preparations illustrating Cystic Disease of the Larynx and a condition simulating cystoma.—Dr. W. H. Kelson showed a woman, aged 65 years, with a Circumscribed Tumour of the Palate of about eight weeks' duration. There was a difference of opinion as to its nature, the diagnosis being a fibro-adenoma or an endothelioma. It was generally agreed that it should be removed.—Dr. Kelson also showed a patient with Ulceration of the Epiglottis and of the Base of the Tongue which was regarded as malignant disease and inoperable.—Mr. P. R. W. de Santi showed a case of Tertiary Syphilitic Laryngitis for opinion as regards treatment.—Dr. A. Lieven recommended tracheotomy to keep the parts at rest; if it were not done now it would have to be done later to overcome the contraction of the glottis; he advised injections of calomel, using 1 part of calomel in 10 of vasoline, a new preparation of paraffin which was the least irritating vehicle he knew. A very small dose should be given at first as the patient might be intolerant of mercury.—The President showed a case of Laryngeal Disease presenting Difficulties of Diagnosis. Opinions were in favour of it being due to syphilis.—Dr. O. A. B. Horsford showed a patient with Considerable Enlargement of the Cervical Glands following Removal of a Tonsil. The diagnosis rested between primary chancre of the tonsil, malignant disease, and deep suppuration in the neck. It was advised that anti-syphilitic treatment should be used before incising the neck. Dr. Horsford was asked to report to the society the subsequent history of the case.—On behalf of Dr. G. O. Cathcart, Dr. Jobson Horne showed the specimen from a case of Fibroma of the Larynx in a patient present at the last meeting of the society. When the patient was exhibited there was a general consensus of opinion that the tumour, which occupied the left arytenoid region, was a cystoma. It was subsequently found to be a solid tumour which had to be removed through an external incision.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held at Manchester on Jan. 18th, Mr. R. Favell (Sheffield) being in the chair.—Dr. E. O. Croft (Leeds) was elected President. Dr. J. H. Willett (Liverpool) secretary, and Dr. W. E. Walls (Manchester) treasurer for 1907.—Mr. Favell showed a large Hypernephroma of the Left Kidney which occupied the pelvis and lower portion of the abdomen, and was successfully removed by the abdominal route.—Dr. J. B. Heilier (Leeds) showed a Fibroid Polypus of the Cervical Canal which was of such size that it completely filled the vagina and was so irregular in form that it closely simulated a "candleflower excrescence" of the cervix.—Dr. A. J. Wallace (Liverpool) showed a Uterus removed for Cancer of the Cervix by the abdominal route with extensive dissection of the pelvic glands and connective tissue. The obturator gland was shown to be much enlarged by secondary deposits, as were also glands dissected off the iliac vessels. Dr. Wallace regarded vaginal hysterectomy as merely palliative. He had done the extensive abdominal operation in nearly 20 cases with a mortality of under 30 per cent. In fat subjects the operation was dangerous and prolonged, but in thin patients it did not appear to be attended by undue risk.—Dr. D. Lloyd Roberts (Manchester) showed a Fibroid 13 inches in diameter and weighing over 32 pounds. It was removed from a multiparous widow, 44 years of age, who had been aware of its presence for 14 years. It finally produced pressure symptoms, menorrhagia, and metrorrhagia. The capsule was incised and the growth was enucleated as a preliminary to the removal of the uterus at the level of the internal os. Recovery was uneventful.—Mr. E. Stanmore Bishop (Manchester) showed a specimen illustrating the advantages of Anterior Vaginal Hysterectomy for the

Removal of Certain Submucous Fibroids; also an example of Ectopic Gestation in which the symptoms and history suggested gonorrhoeal pyosalpinx rather than tubal pregnancy.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Jan. 18th, Dr. J. R. T. Conner, the President, being in the chair.—Mr. Peter L. Daniel gave a demonstration on Common Surgical Affections frequently met with in Out-patients. He said that in a child any injury of the elbow-joint causing pain was most probably a fracture. A frequent sequel to treatment was ankylosis, so the prognosis must be guarded. In treatment of fracture of the epicondyle the elbow should be flexed and put up in an anterior angular or a posterior angular splint, which could be readily made of Gooch's splinting. The arm ought to be kept in position for ten days, after which the child should be allowed to perform active movements. Injuries about the elbow-joint were difficult to diagnose, so they ought to be examined with the x rays and at once put up in the best position, whether in flexion or extension. Movement ought to be practised in a few days as less ankylosis was thus got. Collie's fracture was reduced by employing extension and adduction and by applying splints, which should be taken off in 24 hours, and all the fingers should be moved to free the tendons and so prevent adhesions. The splints ought to be discarded in a week. Leucoplakia in syphilitic patients was wholly caused by oral sepsis. Bad teeth ought to be removed and an antiseptic mouth wash should be used after every meal. Pruritus and entirely depended on moisture and germs in cases of piles, leucorrhoea, fissure, abscess, general colitis, &c. The parts should be carefully cleansed after defecation and frequently mopped with a glycerine, spirit, and carbolic lotion. Chronic ulcer of the leg should be treated by elevating the leg and cleansing the ulcer with an unirritating lotion and by the application of one inch wide strips of diachylon plaster from two inches below to two inches above the ulcer, laid on the leg without pulling. The limb should be bandaged from the toes to the knee and the dressing changed at the end of 24 hours.

MANCHESTER PATHOLOGICAL SOCIETY.—A laboratory meeting of this society was held in the pathological laboratory of the University of Manchester on Jan. 16th. The following demonstrations took place:—Dr. W. B. Atterton: Some naked-eye specimens.—Dr. E. M. Brockbank: Blood Plates.—Dr. W. J. S. Bythell: Photo-micrographs in natural colours.—Professor S. Delépine and Dr. A. Sellers: (1) Hydatid Cyst of the Brain of a child; (2) Bacterial Necrosis of the Liver of a calf; (3) Botryomycosis in the horse; (4) specimens illustrating the Bacteriology of Plague; (5) specimens illustrating the Comparative Pathology of Tuberculosis; and (6) method of cutting sections by the Delépine freezing microtome.—Dr. Fennell: Traumatic Affections of the Cervical Vertebrae.—Mr. F. R. Howson: Specimens of physiological interest.—Dr. G. E. Loveday and Dr. A. Ramsbottom: Determination of the Opsonic Index.—Dr. W. Mair and Dr. C. Powell White: Primary Carcinoma of the Liver of Suprarenal Origin.—Dr. F. Craven Moore: Endothelioma of the Stomach.—Dr. D. Orr and Dr. R. G. Rows: Lesions of the Central Nervous System.—Dr. Parker: Pathological Lesions of the Eye.—Mr. L. Savatard: Microscopical specimens of skin diseases.—Dr. W. F. Shaw: Chronic Metritis.—Professor J. Lorrain Smith: Fat staining by aniline dyes.—Mr. F. A. Southam: Cystine Calculi.—Dr. Powell White: Fat Crystals and Fat Emboli.—Dr. Powell White and Mr. Roberts: Intracystic Fibro-adenoma of the Breast.

PRESENTATIONS TO MEDICAL PRACTITIONERS.—At the Rowton Club, Wick, Gloucestershire, on Jan. 15th, Mr. Henry Hugh Williams, L.R.C.P., L.R.C.S. Edin., was entertained at dinner and afterwards the chairman, the Rev. H. Tomkins, vicar of Wick, on behalf of the subscribers, presented him with a silver rose bowl mounted on an ebony plinth, bearing the following inscription: "Presented to Henry Hugh Williams by many grateful friends and patients on his retirement from practice in Wick and the neighbourhood, January, 1907."—The members of the Wigan Medical Society have presented Mr. J. Blair, M.D., M.Ch. R.U.I., with a sugar basin in the form of a silver cradle on the occasion of the birth of a son during his presidency in 1905.

Reviews and Notices of Books.

Hermann von Helmholtz. By LEO KOENIGSBERGER. Translated by FRANCES A. WELBY, with a preface by Lord KELVIN. Oxford: Clarendon Press. 1906. Pp. 440. Price 16s. net.

THE story of Helmholtz's life rivals in interest any previous biography of scientific men which it has been our lot and our good fortune to read. His career was pregnant with scientific discoveries which have been not merely of academic interest but of importance to the world's practical affairs, inasmuch as they have contributed in many directions to the welfare of all peoples. In this connexion may be mentioned one branch of study in which Helmholtz's researches and ideas were fruitful. He it was who, in Lord Kelvin's words in the preface to this volume, gave to Hertz the inspiration to find experimental proof of Maxwell's electric waves. Not long afterwards the first practical demonstration was given of progressive electric waves and of stationary waves in air, and therefore inferentially, in the ether undisturbed by ponderable matter. The result has since been the achievement of wireless telegraphy. Helmholtz was, as we are reminded by this biography, a medical officer in the Prussian army for five years, was teacher of anatomy in the Academy of Arts in Berlin for one year, was professor of pathology and physiology in Königsberg for six years, was professor of anatomy in Bonn for three years, professor of physiology in Heidelberg for 13 years, and professor of physics in the University of Berlin for about 20 years. What wonder, then, that the story of his life is full of interest and that his work so greatly enriched our knowledge of physiological facts. To medical readers in particular perhaps the story of his life while professor of physiology at Königsberg, 1849-55, affords one of the most interesting chapters. It was here during the preparation of his lectures that he hit upon the invention of the ophthalmoscope and then on the method of measuring the velocity of nervous impulses. In a letter to his father in December, 1850, he wrote: "I have made a discovery during my lectures on the physiology of the sense organs which may be of the utmost importance in ophthalmology. It was so obvious, requiring, moreover, no knowledge beyond the optics I learned at the gymnasium, that it seems almost ludicrous that I and others should have been so slow as not to see it. It is, namely, a combination of glasses by means of which it is possible to illuminate the dark background of the eye through the pupil, without employing any dazzling light, and to obtain a view of all the elements of the retina at once, more exactly than one can see the external parts of the eye without magnification, because the transparent media of the eye act like a lens with a magnifying power of 20. The blood-vessels are displayed in the neatest way with the branching arteries and veins, the entrance of the optic nerve into the eye, &c. Till now a whole series of most important eye diseases known collectively as black cataract have been *terra incognita*, because the changes in the eye were practically unknown both during life and, generally speaking, after death. My discovery makes the minute investigation of the internal structures of the eye a possibility." Subsequently "this very precious egg of Columbus" was announced at a meeting of the Physical Society, Berlin, as Helmholtz's property and a new and improved instrument soon replaced his "pasteboard affair." Helmholtz confessed that he might not have persevered save for his conviction that it must succeed—a feeling which has been the experience of the founder of many a brilliant discovery—but after about eight days he "had the great joy of being the first to see a living human retina" exposed

before him! Physics, however, as his many and valuable papers on colour, sound, meteorology, cohesion, and electrodynamics bear witness, was Helmholtz's bent and all serious students of that branch of science recognise what an enormous loss the world of science and progress sustained by the death of Helmholtz in 1894. "His early death," said du Bois Reymond, "which removed him in the midst of his full working powers was felt not merely as an irreparable loss to science but as a national misfortune."

The book before us is a well-written and enthralling story of the career of a remarkable scientific character. Not a chapter, not a page, is dull reading to those interested in the developments and working of a scientific mind, the activities of which had achieved such brilliant results. The story, too, of his domestic relationships is full of charming episodes. It is not difficult to realise that the writer of this biography was in close personal touch with the subject of his sketch, and further, it is obvious that he possessed a clear scientific view of Helmholtz's aims, studies, and results. For the English translation we have nothing to express but praise, and to the translator and the Oxford University Press we may say, what we feel English scientific men generally will say when they have read this charming biography, that we are grateful for a very valuable and interesting account of a very valuable and interesting life.

Recent Advances in the Physiology of Digestion. By E. H. STARLING, M.D. Lond., F.R.S. With 12 illustrations. London: A. Constable and Co., Limited. 1906. Pp. 156. Price 6s. net.

THE Mercers' Company gave a donation in aid of the work of the Physiological Department at University College, London, and these lectures are the first course of Mercers' Company lectures. The masterly series of researches of Pawlow on digestion and the digestive gland have led to a great development in this branch of physiology but we still require a better knowledge of the physical and chemical conditions which determine the digestive changes in the foodstuffs themselves.

The first two lectures—dealing with the action of ferments—approach a subject which must play a great part in all our future conceptions of intracellular mechanism—i.e., the study of the chemical and physical changes in colloidal and capillary systems, where the modification of physical conditions occurring at surfaces determines changes of another order. There is the second important starting point that the pancreas is excited to secrete by the despatch of a chemical messenger, or hormone, formed in the gut and sent to the reacting gland through the blood stream.

The third lecture gives an excellent account of the secretion of saliva, of course including the now well-known results of Pawlow's experiments on dogs with the ducts of the salivary glands made to open on the exterior of the cheek, a method which was first used by de Graaf. The author does not accept Heidenhain's view as to salivary secretory nerves, but regards the glands as supplied by one kind of fibre, namely, secretory, in addition to the fibres—i.e., vaso-constrictor and vaso-dilator—which exercise their main influence on the blood-vessels of the gland. It would have been convenient had the date—1851—of C. Ludwig's have been convenient had the date—1851—of C. Ludwig's great discovery been stated—viz., the impossibility of explaining the process of secretion as in any way determined by the blood pressure.

Digestion in the stomach is the subject of the fourth lecture. Here again there is, of necessity, a full account of Pawlow's work, and following on the brilliant discovery of secretin by Starling and Bayliss there is an account of the discovery by Ekins of a gastric secretin which is formed in that part of the stomach where the process of absorption is most pronounced—i.e., in the pyloric region. Thus it

appears that the normal gastric secretion is due to the co-operation of two factors—the first and most important is the nervous secretion, determined through the vagus nerves, and the second is chemical.

The fifth, sixth, and seventh lectures deal with pancreatic juice, the properties of its secretin, and changes in the pancreas during secretion. These lectures embrace a full account of the work of the older observers, but their special interest centres round secretin and the large part played by chemical messengers, or hormones, in exciting pancreatic secretion. The author, in treating of the islets of Langerhans, states that no evidence exists in support of the notion that the islets are organs for the production of an internal secretion and he speaks of the "equally unknown anti-diabetic function of the pancreas." The islets of Langerhans are not independent structures of separate origin but are formed, as shown by Dale and others, by certain definite changes in the arrangements and properties of the cells of the ordinary secreting tissue.

The eighth lecture on the bile is a short one. The ninth is devoted to intestinal juice and the last largely to the work of Starling and Bayliss on the movements of the intestine.

We cordially commend the study of these excellent, thoughtful, and suggestive lectures to practitioners of medicine and also to students of medicine preparing for the higher examinations.

Local Anæsthesia in General Surgery. By J. W. STRETHERS, M.B. Edin., F.R.C.S. Edin. Edinburgh: W. Green and Sons. 1906. Pp. 156, with illustrations.

THIS small book provides a clear and concisely written account of the various methods of procuring local anæsthesia. Its author is no immoderate upholder of the use of local as opposed to general anæsthetics and, in fact, appears generally to regard them as a substitute in cases where general anæsthetics are not advisable. There is, however, a wide field of minor surgery in which in many instances local is to be preferred to general anæsthesia. How best to obtain this anæsthesia Mr. Strethers's book explains very well. The various available drugs are described and the advantages of cocaine over the others are upheld provided that proper regard is paid to the question of the strength of the solution. The author thinks that $\frac{1}{2}$ per cent. is the maximum strength that should be used for ordinary subcutaneous injection. He finds that reactionary pain is common. When a tourniquet is used to enhance the anæsthetic effect this pain though more delayed in its onset is more severe, may last from five to ten hours, and may require the administration of morphine. The methods of infiltration anæsthesia are well described and illustrative cases in which various operations have been performed with the assistance of this form of anæsthesia are given in detail. A short chapter on spinal anæsthesia concludes the work.

The Cathedrals of England and Wales. By T. FRANCIS BUMPUS. Third series. London: T. Werner Laurie. 1906. Pp. 328. Price 6s. net.

THE first cathedral dealt with in this series is Lichfield, the motto of whose seventeenth-century bishop, Hackett, "Serve God and be cheerful," might, by the way, well be commended to the pessimists of this dyspeptic age. In every English cathedral is enshrined the memory of one or more great names, and accordingly in the chapter on Lichfield the author gives us appropriate references from Boswell and other sources to Dr. Johnson whose kindness of heart (notably in the case of that "obscure practitioner in physick amongst the lower people," as Boswell quaintly describes Mr. Robert Levett, whom the great author so

generously helped) is too often forgotten in our admiration of his genius. Gloucester, the next in order in the volume, is associated with the name of that great English musician, Dr. S. S. Wesley, of whom an interesting account is given. Rochester is so inseparably associated with Dickens that the author has prefaced his chapter on that fame with a lengthy extract from the great novelist's last and, alas, unfinished work (which is almost exclusively occupied with the cathedral), "Edwin Drood," and in addition he gives another extract in the text. Oxford, "the home of lost causes," as Matthew Arnold calls it, holds so many great names that our space will not allow us even to enumerate them but here again the author has produced a full and interesting chapter.

It must not be supposed, however, that although it deals with weighty matters the book is heavy, for, mixed up with exhaustive descriptions, architectural, historical, musical, and biographical, are anecdotes in a lighter vein, such as that relating to Dr. Corfe, sometime organist of Oxford Cathedral, who so rarely changed his stops during the service that the undergraduates called the particular quality of tone produced the "Corfe-mixture." The remaining cathedrals in the series are Carlisle, Llandaff, Bangor, St. David's, St. Albans, Ripon, Manchester, Truro, Southwell, Newcastle, Wakefield, Liverpool, Birmingham, and Southwark.

The full-page plates, 32 in number, are excellent and the volume will be found to be as interesting as it is instructive.

Elements of Practical Medicine. By ALFRED H. CARTER, M.D. Lond., M.Sc. Birm. Ninth edition. London: H. K. Lewis. 1906. Pp. 614. Price 10s. 6d.

THE fact that a ninth edition of this well-known and popular work has been demanded is of itself a proof that it has accomplished the object for which it was written—namely, that of an elementary introduction to the study of medicine. In the work before us the text has been carefully revised throughout, many sections having been entirely rewritten, and a few necessary additions have been made, bringing the contents up to date. The author has availed himself of the help of Dr. A. Stanley Barnes in the chapters on Pathology and Nervous Diseases, and of Dr. A. Douglas Heath of the Skin Department in the Birmingham General Hospital in the section on Diseases of the Skin.

In a work so well known criticism can scarcely find a place and such as we offer has merely the object of making the next edition still more complete. Amongst certain methods of treatment we find no mention of that of dysentery by izzal which has been so successfully carried out in India by Vaughan. Excellent results, again, in the treatment of blackwater fever have accrued from cassia Bearesna. Acute pneumonia is considered amongst the diseases of the lungs; surely its place rather is amongst the specific infective diseases, especially as the author himself describes it as one of these. But in truth the scope and treatment of the work are so excellent as an elementary text-book that we need not do more than heartily recommend it as a volume which the student will find helpful in every way at the commencement of his medical career.

LIBRARY TABLE.

The Elements of the Practice of Comparative Medicine, together with the Records of Some Cases. By FRANK TOWNEND BARTON, M.R.C.V.S., and GEORGE GREENSWELL, M.A. Oxon., L.R.C.P. Edin. London: Everett and Co. Pp. 240. Price 5s. net.—In presenting this volume to the students of the medical and veterinary professions the authors say that they have endeavoured to give an outline

of the principal clinical features of some of the diseases that are communicable from the lower to the higher animals, without entering into the details found in the text-books of human and veterinary medicine. Mr. Barton and Mr. Gresswell have broken ground, so to speak, in a new country, but it appears to us as if they have rushed into print without duly considering the best way of writing such a book or weighing all the evidence of the subject matter. We find also misspelt words, such, for instance, as "pruritis" at p. 208; such mistakes are probably due to bad proof reading. For poor and faulty description we may refer to the section on Vaccinia or Cow-pox, of the protective virtues of which the authors are perhaps uncertain. How can the presence of a varicocele favour tuberculosis? The authors say that it does so, "probably by fanning, so to speak, an already lit fire."

The "Ideal" Medical Diary and Visiting List. London: Langley and Sons, Easton Printing Works, George-street, N.W.—This diary, of which we have received two samples, one wallet being of morocco, and the other of imitation morocco, just fills the breast pocket of a coat. On opening the wallets, which are fastened with spring buttons, the contents are seen to be divided into two distinct portions. To the left is a diary and visiting list; to the right is a manifolding prescription book. Each wallet has an inside pocket and a penol. In the real morocco wallet the diary section is detachable; in the imitation morocco wallet the diary is fixed. In each the prescription book is removeable. The diary contains a calendar for three years, 1906, 1907, and 1908, four double pages or "openings" for obstetric engagements, and the "general visiting list" with an "opening" for each week of the year, containing on each page columns for names and addresses, and to the right thereof seven narrow columns headed with the days of the week and dates. In this connexion, there are signs suggested for use in the "Visiting List," such as a cross with two dots for two visits made, and a cross with three dots for three visits made, and so on. At the end of this section follow a dozen pages for memoranda, two pages for nurses' addresses, eight pages for patients' and general addresses, and four pages for a record of vaccinations. All these are ruled into proper columns. Then, to close the section, is an obstetric table. The second and distinct section consists of a prescription book comprising 50 fixed tissue and 50 detachable thick pages, and a carbon sheet for manifolding, placed between cards with a lustrous metallic surface. The year is printed in gilt figures, both on the exterior side of the wallets, and at the foot of the narrow back of the books so that the years may be read when the books are packed on a bookshelf. Each diary, we find, weighs half a pound. The prices of the diaries are respectively 7s. 6d. and 5s. and the prices of the refills are, for the diary, 3s. 6d.; and for the prescription book, 6d. The real morocco wallet is advertised as being "available for refills for subsequent years." In that case might it not be as well in the case of this book to omit the gilt figures which denote the year? The whole book, which we are told has been made "as suggested by a member of the profession," seems quite businesslike and will appeal to all those who value method with its labour-saving, time-saving, and worry-saving consequences.

Wellcome's Medical Diary and Visiting List, 1907.—We have received from Messrs. Burroughs, Wellcome, and Co. a copy of their medical diary consisting of 152 pages, comprising sections for accounts asked for or sent, nurses' addresses, patients' and general addresses, cash account, diary, visiting list, infectious cases notified, memoranda, obstetric engagements, patients certified under the Lunacy Act, and vaccinations. There is also a column of signs suggested for use in the visiting list. In addition there are

many pages devoted to useful therapeutic notes, a posological table, legal information, diet tables, weights and measures, medical and other formulae, and postal information. There is also a parchment strip on the inside back cover for memoranda, the pencil marks made on which can be erased with a damp cloth. The whole diary and additional matter are contained in a leather wallet, with an inside pocket and pencil and a bookmark. We find that it weighs 11 ounces but there is certainly plenty of value in a small compass.

Whitaker's Almanack for 1907. By JOSEPH WHITAKER F.S.A. Pp. 792. Price 2s. 6d. *Whitaker's Peerage for 1907.* Pp. 737. Price 2s. 6d. London: Whitaker and Sons.—We can only repeat monotonous praise for these two incomparable books of reference. They are both as good as ever they were, if not better. One new feature of the Almanack is an account of the Growth of Travelling Facilities in London. The writer of this article draws attention to the fact, which must have been noticed by any observant person, that so far from increased facilities reducing traffic in the streets they only increase it. London, in fact, was not built for modern "facilities of travelling," and until either an earthquake or a Haussman comes to work wholesale removals the old cramped streets will remain congested. The "Peerage," which is also a baronetage, knightage, and companionship, contains an enormous amount of information in a small compass, and the two volumes are indispensable to everyone who desires information about the world in which he lives.

Who's Who? 1907. Pp. 1958. Price 10s. net. *Who's Who Year-book, 1907.* Price 1s. net. London: A. and C. Black.—The issue of "Who's Who?" for the current year is larger by some 80 pages than that of 1906 and we note that the price has been increased from 7s. 6d. to 10s. No explanation is given in the "advertisement" of this somewhat large increase in price, but all the same "Who's Who?" together with its companion "Year Book," remains a most useful book of reference. We ourselves find it a constant help, and the detailed information in its pages is, we know, often drawn upon by our lay contemporaries. No medical man, however, can understand upon what system some names are excluded and some included, while the amount of space devoted to quite unimportant individuals is in some instances comic.

JOURNALS AND MAGAZINES.

The Journal of Physiology. Edited by Sir MICHAEL FOSTER, K.C.B., F.R.S., and J. LANGLEY, Sc.D., F.R.S. Vol. XXXV. Nos. 1 and 2. Dec. 29th, 1906. London: C. F. Clay. Pp. 162. Price 10s.—The contents of this part are: 1. On the Movements of the Uterus, by Arthur R. Onshny, M.D. Aberd., with 12 figures in the text. Dr. Onshny's observations were made upon rabbits, cats, and bitches. The abdomen was in each instance opened whilst the body of the animal was immersed in normal saline solution at 38° C., care being taken that there was no exposure to the air. The hypogastric nerve was tied and cut. In virgin cats and rabbits the uterine often remained motionless for a long time, but after manipulation or after exposure to the air rhythmic contractions were developed. He thinks that in the intact animal movements may probably be absent altogether. In animals in heat and during and after pregnancy spontaneous movements are generally present. The spontaneous movements of the longitudinal fibres are slow, the intervals between successive contractions being about from 15 to 60 seconds but sometimes as much as 10 or 12 minutes, varying much in strength. The contractions in different parts of the uterus often bore no relation to one another. The contractions of the circular fibres resembled

these of the longitudinal fibres and occurred independently of them. Mechanical or electric stimulation of the uterus causes a powerful contraction lasting from 10 to 30 seconds. Powerful contractions can be excited by stimulation of the hypogastric nerve. Anæmia of the organ artificially induced caused slow and weak contractions. The effects of various drugs, nicotine, pilocarpine, atropine, adrenalin, and quinine, are given. Aloin injected intravenously induced immediate contraction; alcohol had little or no effect. 2. On the Presence of Lactase in the Intestines of Animals and on the Adaptation of the Intestine to Lactose, by R. H. Aders Plimmer, D.Sc. 3. The Hematology of Carbon Monoxide Poisoning, by G. G. Nasmith, M.A., Ph.D. (Toronto), and D. A. L. Graham, M.B. (Toronto). The authors of this article show that the poisonous effect of carbon monoxide is due to its prevention of the normal combination of oxygen with hæmoglobin, but if the animal (guinea-pig) be kept in a dilute mixture of carbon monoxide with air an effort is made by the system to overcome the toxic influence of the gas by the production of a greatly increased number of erythrocytes. 4. The Conditions of Tissue Respiration, by H. M. Vernon. 5. The Importance of Individual Amino-acids in Metabolism: Observations on the Effect of adding Tryptophan to a Dietary in which Zein is the Sole Nitrogenous Constituent, by Edith G. Wilcock, Fellow of Newnham College, Cambridge, and F. Gosland Hopkins, F.R.S. The authors of this article find that a dietary containing zein as its only nitrogenous constituent is unable to maintain growth in young mice and the addition of tryptophan, an amino-acid absent from the decomposition products of zein, does not make it capable of maintaining growth though it greatly prolongs the survival and promotes the well-being of such animals, probably by constituting the precursor of some specific hormone. 6. On the Optimal Electric Stimuli of Muscle and Nerve, by Keith Lucas, Fellow of Trinity College, Cambridge. 7. Experimental Lymphocytosis, by W. Henwood Harvey, M.B. Tor. Dr. Harvey finds that a leucocytosis follows immediately upon the injection of pilocarpine, muscarine, or barium chloride. This effect is of purely mechanical origin and is due to contraction of the plain muscle element in the spleen and lymphatic glands. It may be inhibited by atropine. 8. On Methods supposed to Localise Phosphorus in Cells, by F. H. Scott, Ph.D., M.B. 9. On Diurnal and Nocturnal Variations in the Excretion of Uric Acid, by J. B. Leathes. 10. Experiments on the Isolated Mammalian Heart to show the Relation of the Inorganic Salts to the Action of the Accelerator and Inhibitory Nerves, by W. H. Howell and W. W. Duke. 11. Observations on Human Chyle, by J. Molyneux Hamill, M.B. Cantab. An average sample, obtained from a fistulous passage connecting the thoracic duct with an opening in the right groin, contained 3.87 grammes total solids per 100 cubic centimetres of chyle, comprising 0.83 ash; fat, from 1.344 grammes to a much larger proportion; total nitrogen, 0.264 gramme; lecithin, equal to 4.204 grammes per 100 grammes of ether extract; and cholesterol, equal to 5.2 grammes in the same. This number also contains the proceedings of the Physiological Society at the meetings held on Oct. 20th and Nov. 17th, 1906.

Man.—In the January number of *Man* M. E. Cartailhac publishes in French an account of the discovery of a great many (about 80) representations of human hands on the sides of a cavern at Gargas in the Hautes-Pyrénées. The work is supposed to be of the Palæolithic age. The process employed was such that the pigment lies outside the contour of the hand, and M. Cartailhac states that Australian aborigines now produce such designs by holding the hand against a flat surface and blowing a coloured powder over it, so that on removal of the hand an outline of it remains on the surface.

New Inventions.

A MODIFIED URETHRAL SYRINGE.

THE accompanying illustration explains the nature of the syringe. It consists of two parts—a Guyon syringe and a catheter shaped like a bladder sound. The syringe is used for applying local applications to chronically inflamed patches of the urethra. The advantages over the ordinary acorn-headed catheter are the following—greater accuracy in localising the inflamed patch is obtained by means of the beak; the difficulty of introducing an instrument through a small meatus which is capable of putting the urethra on the stretch while the application is made is overcome. A further advantage is that after the application has been applied the inflamed patch can be massaged with the beak of the syringe, which greatly aids the efficacy of the application. The Guyon syringe insures great accuracy of the quantity of the solution applied. The barrel of the syringe is six and a half inches long, and the prostatic urethra can be reached if necessary. The instrument is manufactured of silver and was made to my design by the Holborn Surgical Instrument Company.

T. W. S. PATERSON, M.B., B.C. Cantab.
King William-street, E.C.



Looking Back.

FROM

THE LANCET, SATURDAY, Jan. 24th, 1829.

FOREIGN DEPARTMENT.

TREATMENT OF PHTHISIS BY SMOKING BELLADONNA.

PROFESSOR CARVELLIER has lately used the belladonna in phthisis with great success, in the following manner: the fresh leaves were infused in a strong solution of opium, and then dried up like tobacco; the patients began by smoking two pipes a day, and the quantity was gradually increased to six pipes. In several cases of confirmed phthisis the cough became less frequent and violent, the pain and irritation of the larynx subsided, the dyspnoea disappeared, the expectoration diminished, and became less troublesome, the profuse nocturnal sweats, the heat and febrile excitement, became less, and the disease seemed to be completely arrested.—*Nouv. Bibl. Médic.*

SINGULAR ACTION OF ARSENIC ACID ON SEVERAL SORTS OF SUGAR.

A SOLUTION of the arsenic acid and common sugar being mixed, the fluid, after a few hours, assumes a beautiful purple colour, resembling that of raspberry syrup; if instead of common sugar that of starch is used, the same colour, but somewhat brighter, is produced; the sugar of milk assumes a reddish brown colour; manna becomes of a brick colour; diabetic sugar and the saccharine principle of oil, as well as gum and pure starch, are not changed at all by the arsenic acid. Caustic potash and ammonia, have no power of destroying the colour of the above mentioned liquids; nitric and muriatic acids render it brighter; sulphuric acid changes it into a dark brown colour.—*Schneigger's Jahrbücher.*

THE LANCET.

LONDON: SATURDAY, JANUARY 26, 1907.

The Hospital Funds and the Medical Profession.

THE hospitals of London, the great medical charities of the metropolis, struggling to maintain their efficiency in an age of unprecedented scientific and social development, and to meet the demands upon their resources caused by the rapid growth of urban population, have received during the latter portion of the last century and the beginning of the present century invaluable assistance from funds organised for the purpose of collecting and distributing among them the contributions of the benevolent. Very large sums of money have been placed at the disposal of the hospital committees by these funds and in every year through their aid thousands of the poor and suffering have had medical and surgical relief which otherwise it would have been impossible for the hospitals to afford. And if in the past those controlling such funds as King Edward's Hospital Fund for London, the Metropolitan Hospital Sunday Fund, and the Hospital Saturday Fund, have earned the gratitude of their fellow citizens, they have no reason to believe that in the future their efforts and those of their successors will be less effective or less gratefully received. Indeed, there seems to be every reason to suppose that the confidence inspired by well-directed charitable organisations will cause in the future steady and substantial augmentation of the incomes of these funds, because they have been administered with care and discretion in the past.

In the circumstances it is not surprising that those responsible for the management of such funds in two instances—that of King Edward's Hospital Fund for London and the Metropolitan Hospital Sunday Fund—should be seeking to establish themselves and the important charitable movements which they represent upon definitely ordered and permanent foundations. The manner in which they propose to do so is a matter of considerable interest to the benevolent public, and no less so to the medical profession which, during the period of the existence of these great funds—as for years, or, indeed, centuries, before they came into being—has given in charity that medical and surgical treatment for the exercise of which the money of benevolent laymen has provided and maintained the hospitals. We do not of course ignore the pecuniary gifts and bequests to hospitals made by the medical profession, but, speaking generally, as the lay public has contributed money, physicians and surgeons have *pari passu* given freely their time and their skill during the best years of their lives to the same worthy object. The medical profession, therefore, no less than the public, will consider with interest the provisions of the Bill which has for its

object to incorporate the president and council of King Edward's Hospital Fund for London, and to provide for the management of the Fund, as well as the draft charter of incorporation under which the Metropolitan Hospital Sunday Fund seeks to define and to render permanent its constitution. Such steps concern others besides those who are immediately occupied in directing them. They are of more importance than any of the preceding acts of the institutions concerned and are subject to criticism from a different point of view. The organised collection and distribution of money in charity, or for any other purpose, is a matter of interest principally during the period in which the money in question is collected and distributed, and during which the effect of these operations is felt. Criticism may be withheld, or, being put forward, it may be either considered or disregarded, for an error made in one year can always be corrected in the next. When, however, Parliament is asked to pass a Bill, or when the Royal assent is asked to a charter, it is a case of legislating for posterity and in dealing with that which will affect posterity for good or ill too much foresight and too careful scrutiny of probable or possible developments can hardly be employed.

The Bill for the incorporation of King Edward's Hospital Fund is redolent of that high respect for the Throne and for the wise and enlightened monarch who occupies it, which all his subjects feel, and indeed share with the world, but we doubt whether that respect might not have been evinced without casting upon the occupant of the British throne for all time responsibilities which must inevitably weigh heavily and which may in conceivable circumstances prove irksome and difficult to sustain without liability to error. The Bill provides that His Royal Highness the PRINCE OF WALES shall continue his position of President of the Fund as President of the corporation "during the pleasure of the Sovereign" and that "every succeeding president shall be appointed by and hold office during the pleasure of the Sovereign." The whole of the management of the corporation is then vested in the President or through him in the Sovereign. The President appoints a council of such and so many as he may choose, and is to have absolute control of the property and funds of the corporation. Its management is provided for in these terms, to quote Section 5 of the Bill:—

"The direction control and management of the affairs and property of the corporation and the application of all moneys property and income of the corporation shall be vested in the President whose powers shall include the following—that is to say (a) power to appoint and at pleasure remove the members of the general council and of any other councils and committees hereinafter mentioned and trustees and treasurers secretaries auditors and other officers and to award them or any of them salaries or remuneration (b) power to appoint and dissolve councils and committees other than the general council and from time to time to delegate to any council or committee all or any of his powers of direction control or management as he may think fit (c) power to make vary and rescind bye laws rules and regulations for the management and administration of the affairs and property of the corporation and the procedure relating thereto including the use of the corporate seal and the keeping of regular books and accounts (d) power to direct the mode of collection of moneys for the corporation and the distribution and allocation of such moneys and of all property and income of the corporation to or for the benefit of all or such one or more

to the exclusion of the others of the hospitals of London as he in his uncontrolled discretion shall think fit and generally to determine the manner in which such moneys property and income shall be dealt with and applied for the purposes of this Act and in furtherance of the objects of the corporation (c) power to determine whether any institution proposed to be benefited is or is not within the limits of the objects of the corporation as defined by this Act and (f) power generally to do or direct to be done all acts and things which in his discretion he may deem conducive to promoting and effecting the objects of the corporation."

We need not labour our point with regard to the autocracy which is thus proposed to be instituted, but without disrespect to King EDWARD VII. or to his successors who may occupy the throne, we may point out that our present Sovereign succeeded as a man of mature judgment, with wide and cultivated sympathies, and with a knowledge of men and things which would have won for him high distinction in whatever position fate had placed him. Even if his successors may rightly be expected to emulate his example it is proposed to provide them with no assistance independent of their own unfettered judgment in the Bill from which we have quoted. This, we think, is wrong, and it should be possible to construct a definite constitution for the proposed corporation which should at one and the same time recognise to the full the grand services of our present King and his Heir Apparent and spare them the enormous responsibilities of unfettered discretion in the management of a Fund the expenditure of which must always be regulated by numerous technical influences.

With regard to the charter proposed to be granted to the Metropolitan Hospital Sunday Fund none can suggest that THE LANCET has from its inception been other than a staunch advocate of the objects of the Fund, devoting all the influence that it has had at its command to aiding the Fund in its annual collection and to making more widely known the beneficent work which it has carried out. And in the circumstances none can blame us if we quote with approval from the memorandum addressed to the President of the Privy Council by the Council of the Metropolitan Counties Branch of the British Medical Association the following paragraph:—"That the constitution of the Metropolitan Hospital Sunday Fund fails to provide for any representation in its Council and in its Committee of Distribution of medical practitioners who could best guide it in dealing with the medical requirements of hospitals, and that the public interest thereby suffers." The reasons for this remonstrance are briefly but effectively set out in the document referred to which was published in a recent issue of the *British Medical Journal*.¹ The memorandum dwells in detail upon all the reasons for believing that certain of the institutions annually subsidised by the Metropolitan Hospital Sunday Fund are conducted in a manner directly inimical to medical practitioners and alludes to many matters of grave interest in connexion with hospital management and with the expenditure of hospital funds upon the importance of which we have often dwelt in our columns. As we have pointed out, the contribution of the medical profession to the efficiency of the hospitals and to the carrying out of their work is to be reckoned side by side with, and in combination with, that of the ever-generous public, and it is by

the coöperation of the public and of the medical profession only that the hospitals of London can be maintained in the future as in the past as examples to the world of well-ordered public charity.

The Teaching of Public Health in Medical Schools.

THE demands made upon the time and energies of the medical student increase not only from generation to generation but even from term to term, and if the medical practitioner is to hold his own in connexion with the subject of public health it is, we fear, inevitable that he should devote more time to the study of that branch of medicine than is the case at the present moment. The progress of epidemiology during the last quarter of a century has been very notable and yet the medical schools are in some cases devoting no more time to its study than formerly. In several of the London schools some twelve lectures are set apart annually to a subject which could not be at all adequately dealt with in double that number. Some of the school committees take, we are afraid, but a lukewarm interest in the matter and they do not by their support of the lectures in public health indicate to the student that preventive medicine is a subject of first-class importance. Hence, the students are prone to regard the lectures in a somewhat perfunctory light and to attend the minimum number, unless perchance, as is sometimes the case, the lecturer by the interest and information which he is able to impart to his subject succeeds in holding his class together by the force of his own individuality.

No doubt greater use might be made even of this too brief course were there more coöperation and coördination between the lecturers at each school and a clearer understanding as to which aspect of infectious diseases, immunity, and so on, is to be dealt with by each lecturer. As it is, there are probably considerable repetition and overlapping. In so far as the lectures to students are concerned the school committee should endeavour to secure the services of a lecturer who has made a study of the science of preventive medicine rather than of administration and law. The student whose ultimate intention is to embrace general practice has no need or use for the special administrative wisdom of the medical officer of health or a knowledge of the statutes relating to common lodging-houses or the disposal of refuse. It is, however, essential that he shall appreciate fully the means by which disease is spread, the relation of the diseases of animals to those of man, the value of foodstuffs, and the methods of ascertaining the causation of disease in individuals and groups. He must be versed in his duties as a medical practitioner to the State. That, therefore, the lectures should be of greatest use to the student they should be delivered, as is not always the case, when he is in the most receptive condition and when he has already learnt something of bacteriology, medicine, and pathology. Such lectures should also lay a firm foundation for a later superstructure of public health knowledge should the student subsequently elect to proceed to the diploma in public health and to devote his life to this branch of work. But we are anxious to insist upon the fact that these lectures to medical students should make no pretence to prepare candidates for the diploma of

¹ Supplement to the Brit. Med. Jour., Oct. 13th, 1906.

public health and we should be glad to see the misconception which sometimes obtains upon this point rectified. For this diploma, which should be regarded as an honours certificate, much additional and detailed study is necessary in order, in the words of the General Medical Council, "to insure the possession of a distinctly high proficiency, scientific and practical, in all the branches of study which concern the public health." Preparation for this diploma may, of course, be undertaken by the lecturer on public health, who may also be in a position to give the candidates for such diploma the experience in practical work which is prescribed as part of the necessary curriculum. But there is no question that there is at times great difficulty in procuring the services of a local medical officer of health who as a whole-time officer can, consistently with his duties to his sanitary authority and to the public, devote the necessary time to the preparation of the candidate and to delivering lectures of a sufficiently high order. Hence it sometimes comes about that in the practical work the students are left rather too much to the sanitary inspector and consequently the candidates do not derive the full advantage from their association with the medical officer of health. Moreover, a thoroughly good epidemiologist and lecturer may be an imperfect administrator and *vice versa*.

It is therefore not always desirable to bestow a vacant lectureship upon a neighbouring medical officer of health and it may sometimes be found advantageous, both for the prestige of the school and the welfare of the students, to appoint as a lecturer an epidemiologist of a high order and as a demonstrator a medical officer of health having access to a suitable district or districts; and we should like to emphasise the desirability of affording to the candidates for the diploma in public health some experience of rural as well as urban administration. The methods and standards adopted in rural districts must of necessity differ somewhat from those found practicable in urban districts and an experience of both is likely to widen the mental horizon of the future medical officer of health and to help the development of his sense of proportion. With this end in view there might be advantage in appointing as demonstrator in the practical work some county medical officer who would have access to districts of different sizes and type—that is to say, if a county medical officer with a county where there was much work to be done would care to be troubled with the candidates. It has, of course, to be borne in mind that many medical officers of health who have districts involving constant attention and who take a pride in their administration do not care to be bothered with the supervision of candidates for the diploma in public health. Moreover, the remuneration offered is such as to fail to attract the best men to apply for the post of either lecturer or demonstrator, and if such men apply they do so from other motives than immediate material recompense. It is, however, essential that the school committees should satisfy themselves that whoever undertakes the practical work is in a position to show the students sanitary administration actually in operation, and that the student should be able to examine for himself the methods of keeping the books and how best to dispose of the inspectorial staff. He should also be able to visit all parts of the district or districts and be encouraged to follow up difficult cases in the law

courts. Probably the school committees are not all constituted in such a fashion as to enable them to select to the best advantage, and in these circumstances, perhaps always, they would do well to seek counsel elsewhere. It has indeed been suggested to us that as the preparation of future medical officers of health concerns the State both lecturers and demonstrators should be appointed by, or at least with the approval of, the State and there may be much to be said for this position. It might also be desirable that the General Medical Council or the Local Government Board should occasionally inspect the practical work of the candidates for the various diplomas in public health. But in the meantime we trust that the school committees may be able to allocate both more time and some fees to the teaching of this ever-expanding subject of preventive medicine.

The Workmen's Compensation Act, 1906.

No Act of Parliament designed for the benefit of the working classes has been of direct interest to so large a portion of the community as the new Workmen's Compensation Act which will come into force on July 1st and which, "except so far as it relates to references to medical referees and proceedings consequential thereon," does not apply to accidents taking place before that date. An abstract of the new statute, and particularly of the sections of interest to the medical profession, was given in THE LANCET of Jan. 12th, p. 112, and in this article Mr. ALBERT BENTHALL, whose previous contributions to the subject in our pages will be remembered by our readers, called attention to many of the innovations introduced. The duties which the new Act imposes upon the medical profession directly are for the consideration of those who may desire to become medical referees or who may fill the posts of certifying surgeons under the Factory and Workshop Act, 1901, and these will have to wait for full information until the Home Secretary and the Treasury have issued regulations with regard to them. But the medical profession at large is interested in any new law which renders the personal injuries inflicted by accidents the subject of inquiry with a view to the assessment of pecuniary compensation, and all members of the community employing domestic servants as well as all domestic servants themselves are now subjected to new liabilities or endowed with rights not hitherto enjoyed.

To quote from the definition given in the Act "workman" does not include any person employed otherwise than by way of manual labour whose remuneration exceeds £250 a year or a person whose employment is of a casual nature and who is employed otherwise than for the purposes of the employer's trade or business, or a member of a police force or an out-worker, or a member of the employer's family dwelling in his house, but, save as aforesaid, means any person who has entered into or works under a contract of service or apprenticeship with an employer, whether by way of manual labour, clerical work, or otherwise, and whether the contract is expressed or implied, is oral or in writing." The Workmen's Compensation Acts, 1897 and 1900, repealed by the new statute, were very short, but in spite of their brevity and their apparent

simplicity have given rise to an enormous amount of litigation. So far as this may have been the consequence of such brevity, the framers of the Act of 1907 have made up their minds to avoid it, for the new measure is not a short one when its ten sections and its three schedules, occupying 28 pages in all, are considered, and if the seeming simplicity of the statute of ten years ago was intended to give the impression that it was to be understood at a glance by the workman, no such idea has inspired those who drafted the present one. Presumably it has been found that any point worth disputing always and necessarily has been fought out by insurance companies on the one side and by workmen's associations on the other, and it has been thought that, as this must continue in any case, a statute which aimed at being explicit would serve its end best, although its full comprehension by laymen might present some difficulty. No doubt a large number of those most concerned will spend 4d. in purchasing the official text, and it will not be long before members of the bar who have made workmen's compensation their specialty will have volumes ready containing notes and explanations dealing with its various sections. Those who study the general provisions will find, among other points, that the "first fortnight" of incapacity for which a workman has hitherto not been able to claim has been altered so that he may not ask compensation for an accident which does not disable him from earning full wages for at least a week, and that where incapacity is for less than a fortnight the first week is not to be reckoned in computing the amount. These are provisions primarily of interest to the workman but likely to give no little trouble to the medical profession. It has been noted by Mr. BENTHALL that "If it is proved that the injury to a workman is attributable to the serious and wilful misconduct of that workman any compensation claimed in respect of that injury shall, unless the injury results in death or serious and permanent disablement, be disallowed." Curiously enough, one of the most recent cases in which compensation was withheld by the court of appeal on the ground of the workman's "serious and wilful misconduct" was one in which death had taken place, so that the man's personal representatives, who now have to go without their money, would have obtained it without any such question being raised had the accident taken place after July 1st. In the case referred to the workman had obstinately refused to make use of the guard provided for a saw driven by machinery, and the accident which actually killed him might have inflicted equal injury upon his fellows. It would, perhaps, have been useful if the new Act had given some definition of "serious and wilful misconduct," as well as of other expressions of a somewhat vague nature which it employs, so as to prevent, so far as possible, the necessity of recourse to the Court of Appeal for their interpretation. The *Lancet*, no doubt rightly, pointed out that in the case referred to, although the disobedience of the workman might constitute serious and wilful misconduct on his part, the fact that he appreciated the serious nature of his own behaviour was negatived by his conduct in persisting in it. Many will think that if the absence of such appreciation is to be put forward in argument in favour of a workman who, in spite of his employer's orders, endangers

himself and others, the sooner the law makes it plain that such disobedience may be serious and wilful misconduct the better, on the ground that the interests of workmen in general demand that all possible discouragement should be given to foolish recklessness.

The general tendency of the new Act, where it relates to medical referees, is to increase the importance of that post and to render it absolutely necessary that it should be filled by those enjoying the confidence of the medical profession around them. Instances of new powers given are to be found in a provision to enable a county court judge to summon a medical referee to sit with him as an assessor, and in Section 8, Subsection f, which gives a right of final appeal to a medical referee in cases where an employer or workman is aggrieved by the action of a certifying surgeon under the Factory and Workshop Act. This section, which may be described as the principal one of interest to certifying surgeons, provides that certain diseases defined in the third schedule shall rank as accidents, but protects the employer by provisions designed to prevent him from being rendered liable where the disease has been contracted under other employers than himself, and defines the duties and powers of the certifying surgeon in respect of the measures to be taken with this object and in connexion with these diseases. They are anthrax, poisoning by lead, mercury, or phosphorus and their sequelæ, and ankylostomiasis. We have said enough to show that the statute which in a few months time will become operative is of importance to the medical profession and to a wide public, many of whom will only become familiar with its details and with its effects by degrees. Even without the study of its text in detail, which has been recommended above, we can see that the new Act will afford ample scope for litigation in which difficult questions of fact and of law are likely to be involved, and that it will necessitate insurance by the employer and the forming of fresh combinations of the employed to meet its requirements. To medical men, who sometimes find the full meaning of Acts of Parliament difficult to appreciate, it may be desirable to point out that, like its predecessors, the new law does not provide for the payment of medical men called in in cases of accident (except where a workman killed by an accident has left no dependants) or for damages in which the expenses of medical attendance and of nursing are taken into consideration, but only for compensation based upon the average earnings of the workman before his accident computed according to rules laid down in Schedule I. of the Act. It may also be noted in like manner that no legislative innovation has been introduced to render compulsory surgical interference with a view to reducing the employer's liability by lessening the period of the workman's incapacity, a very difficult matter to deal with satisfactorily, but with regard to which discussion has at times arisen.

DONATIONS AND BEQUESTS.—The honorary secretaries of King Edward's Hospital Fund for London have received £20,179 from the executors of the late Mr. Alfred Belt.—The late Mr. G. Phelps of Bristol has bequeathed £500 to the Royal Infirmary, General Hospital, and Children's Hospital.

Annotations.

"No guld nimis."

THE MEDICAL DIRECTORY FOR 1907.

THE issue of this work for 1907, so indispensable to the medical profession, appeared during the closing weeks of 1906. Comparing the edition for the current year with that for the year just passed, we find that the total number of names is 39,365, an increase of 444 over the total 38,921 in 1906. Taking the several regions into which the Directory is divided, we find that the number of names in the London list for 1907 is 6512, as against 6438 in 1906. The provincial list for England for 1907 contains 17,080 names, as against 16,976 in 1906. Wales for 1907 has 1232 names, as against 1217 names in 1906. Scotland for 1907 has 3815 names, as against 3785 in 1906. Ireland for 1907 has 2672 names, as against 2654 in 1906. Registered practitioners abroad number 4822 in 1907, as against 4666 in 1906. The medical services—naval, military, and Indian—number 3223 for 1907, as against 3165 for 1906. There is thus, it will be seen, an increase in every department of the profession which is dealt with in the Directory. The "Too Late" list for 1907 contains nine names, for 1906 20 names. The introductory article on the principal laws affecting the medical profession is as full of information and as useful as ever and the book is printed and edited with that care which the publishers, Messrs. J. and A. Churchill, have taught us to expect from them.

WEATHER IN WAR TIME.

AT a recent meeting of the Royal Meteorological Society the president, Mr. Richard Bentley, delivered an address upon the above subject. He showed how upon upwards of 300 occasions the course of history was greatly influenced by weather conditions. Often invasions were frustrated or greatly impeded, from the time of the destruction of Mardonius's fleet off Mount Athos to the attempted French invasion of Ireland. Fogs also played an important part in history. Lord Anson in a single ship loaded with Spanish treasure slipped unperceived through the entire French fleet and the great Duke of Marlborough contrived to get his army across the Scheldt in the teeth of the enemy in a river mist. Reference was made to the difficulties overcome in crossing the snow on the Alps by Hannibal, Napoleon, Massena, Souvaroff, and Macdonald, and also to the march of Colonel Kelly's Sikhs to the relief of Chitral. Mention was also made of the hailstorm which smote Richard I.'s men at Ascalon, of the sleetstorms at the battles of Hohenlinden and Eylau, and of the wild weather during the memorable retreat from Moscow. The important part played by ice was shown by the Swedish army on one occasion invading Denmark across the frozen Baltic and by the Russians in 1809 similarly crossing over the frozen sea to Sweden; also by the ice inclines in the passes prepared to hinder the Hungarians from crossing the Balkans and the great ice forts built by the Austrians in the Tyrol which could neither be clambered up nor shattered and were proof against all the French attacks. Many other instances were given, but we may mention two which are at any rate not referred to in the official abstract before us and are sufficiently remarkable to deserve special notice. The one is the defeat of the barbarians by M. Aurelius, A.D. 176, owing to a sudden hailstorm which, according to ecclesiastical history, came on at the prayer of the Melitene Legion, afterwards known as the Legio Fulminatrix, and the other the sudden frost and gale which upset the plans of Maurice for the combined attack by water and land upon Antwerp in 1622,

then in the hands of the Spaniards. From a medical point of view weather has many times affected the course of campaigns by being favourable to the spread of epidemics such as typhus and typhoid fevers and more especially when the campaign included a long siege. Abnormally wet or dry seasons have also brought about their respective effects upon armies. Extreme heat and drought, leading to heat exhaustion and parching thirst, were in great measure responsible for the terrible disaster to the arms of Portugal at Alcacervir in 1578.

THE STRENGTH OF SURGICAL SUTURES.

M. A. Astruc has published in the *Journal de Pharmacie et de Chimie* of Nov. 16th, 1906, an interesting article on the determination of the strength and other physical characters of catgut, silk, and other surgical sutures. The strength of catgut and other materials is usually determined by ascertaining how much weight is required to break the stretched fibre, but M. Astruc points out that sutures as employed by surgeons are not submitted simply to direct tension, the knots having to be taken into account. The breaking strain is not the same in the case of a simple thread as it is when a knot is present. Hence M. Astruc has determined the breaking strain for both simple and knotted sutures. It is interesting to note that the figures given demonstrate the slight superiority of a surgeon's knot over simple knots. The following table gives a few of these figures:—

Breaking Strain (in kilogrammes).

Size of sutures.	Simple suture.	Suture containing a surgeon's knot.	Suture containing a simple knot.
<i>Catgut.</i>			
000	3.0	2.7	2.4
1	7.3	5.5	5.0
5	11.6	7.7	7.1
10	33.0	17.5	16.5
<i>Silk.</i>			
000	3.0	2.2	2.0
1	4.9	3.5	3.4
5	10.4	9.4	9.3
10	18.7	17.1	17.0

These figures justify the conclusion that the force required to break a suture provided with a knot represents only a fraction of that required to break a suture which is simply stretched. This is particularly seen in the case of the thicker threads of catgut; thus a No. 10 catgut suture breaks under a strain of 33 kilogrammes when simply stretched, whereas the presence of a surgeon's knot causes it to break under a strain of 17.5 kilogrammes. But in the case of silk the presence of a knot only produces a relatively slight weakness in the threads.

MEDICAL CANDIDATES FOR THE LONDON COUNTY COUNCIL.

EVER since the London County Council came into existence it has numbered medical men among its members. Their presence, indeed, has been urgently necessary in view of the work which the Council has to do. It supervises the administration of the Public Health (London) Act, 1891. It also administers within the County of London the Infant Life Protection Act, the Inebriates Act, and the Contagious Diseases (Animals) Acts, manages six large lunatic asylums, appoints coroners, is responsible for the main drainage of the metropolis, and controls the education, mental and physical, of London's children. In all this work the advice of medical councillors

must often prove extremely valuable and sometimes indispensable. Even in such matters as the maintenance of the parks and the provision of means of recreation and locomotion important medical questions must frequently arise. Sir William J. Collins, M.P., is now retiring from the London County Council after many years' service, but three other members of the medical profession are announced as likely to seek re-election on March 2nd. These are the deputy-chairman of the Council (Dr. E. B. Forman) who will stand for South Kensington, Dr. A. Salter (Bermondsey), and Dr. R. M. Beaton (North St. Pancras). In addition, Dr. W. Lansdale is a candidate for West Newington, Professor W. R. Smith for St. George's-in-the-East, Dr. John Davies for Hoxton, and Mr. Percy Vesper for West St. Pancras. The candidates also include a non-medical councillor well known to many members of the profession in the person of Mr. R. A. Robinson, who has recently resigned the presidency of the Pharmaceutical Society of Great Britain in order to devote more time to the leadership of the "Municipal Reform" party at the coming election of the London County Council.

THE ADVANTAGES OF INVESTIGATING THE UNLIKELY.

IN the *Journal of the Society of Chemical Industry* of Dec. 31st, 1906, there appears a report of a discourse by Sir William Ramsay on the Advantages of Investigating the Unlikely. He drew attention to the unsuitableness of the old legal saw, "*De minimis non curat lex*," as a motto for a man of science. On the contrary, science and industry must attend to trifles. It is possible, he supposed, in real life to judge what are trifles and what are not, but in science it is not always easy to draw the distinction. A man who studies the markings on a butterfly's wing or counts the bristles on the antennæ of a bee may not appear to a chemist to be doing anything important, but such markings may have led a Darwin or a Wallace to propound the theory of natural selection and the bristles may be the organs of a sense unknown to us by means of which the bee gains impressions from some form of radiant energy incapable of impressing our grosser or differing sense-organs. It would thus seem that there are no negligibles in nature. Sir William Ramsay referred to Faraday's observation that a current flowed when a magnet was withdrawn from a coil of wire. This simple experiment led the way to the enormous electrical developments of modern times, including countless dynamos transmitting the energy which furnishes us with light and power, and which may some day be utilised for distributing heat over our cities. After illustrating his theme by reference to his own work on the gases of the atmosphere Sir William Ramsay drew attention to the advantages of attempting such investigations. First of all, it satisfies the curiosity which members of the human race possess to enlarge their knowledge. Next, it correlates knowledge and by supplying missing links it increases the value of what is already known. Lastly, it shows that more is sometimes achieved by speculative science—trying for results against long odds—than in slowly and laboriously accumulating results which could have been foretold. Sir William Ramsay's remarks apply with force to the study of medical problems. The man of science should, above all, learn to approach a problem with an open mind; a pre-conceived opinion may be fatal to the elucidation of the truth. The mere mental act of deciding whether or not a problem affords a promising subject for investigation is a form of preconceived opinion and as such should be avoided. The correct attitude to adopt is doubtless that of the man who perceives where there are gaps in human knowledge and devotes his energies to filling in those gaps. The early experiments of Pasteur might not to many investigators appear to offer important results but they led to the

opening out of the new science of bacteriology, one of the most important developments of which was the discovery of the antiseptic system of surgery.

THE MEDICINAL ACTION OF ARISTOLOCHIA CYMBIFERA.

A PRIX Martin-Damourette has been awarded to M. Lucien Butte for his researches on the physiological and therapeutic action of *aristolochia cymbifera*, an account of which is given in the *Comptes Rendus* of Dec. 17th, 1906. The plant is highly esteemed under the name "guacho" by the people of Mexico as a sovereign remedy in cases of snake-bite. M. Butte has shown that it possesses no value in this respect, though it has other valuable properties due to the presence of an active resinous substance, guachol. It is a powerful analgesic; it also exerts a retarding influence upon nutrition and lowers the temperature. On this account guachol is recommended by M. Butte as a therapeutic agent in many painful affections of neuralgic origin.

SUNSHINE DURING 1906.

ALL the following figures, with the single exception of those for Shanklin, have been compiled from the reports published either weekly or monthly by the Meteorological Office and are therefore trustworthy. As the results are all obtained (except at Shanklin) by the Stokes-Campbell burning recorder they are strictly comparable. The notable excess of hours at Shanklin is probably, but not necessarily, due to the use of a different kind of recording instrument—the Jordan photographic recorder, which is sometimes more

Sunshine during 1906.

	Total number of hours.	Difference from average.	Difference from 1905.
Aberdeen	1525	+111	+165
Scarborough	1531	*	+107
Lowestoft	1958	*	+158
Clacton-on-Sea	1996	+129	+308
Margate	1874	+346	+290
Folkestone	1979	*	?
Hastings	1991	+210	+247
Brighton	1858	+130	+192
Bournemouth	1969	*	+152
Jersey	2005	+ 55	+270
Torquay	2028	+300	+251
Shanklin	2217	*	+106
Falmouth	1935	+157	+258
Llandudno	1683	+253	+105
Rhyl	1767	*	+140
Blackpool	1679	+317	- 79
Douglas, Isle of Man ...	1697	+101	- 35
Dublin	1574	+ 40	+ 97
Llangammarh Wells ...	1413	*	?
Bettws-y-Ced	1574	*	+121
Glasgow	1174	+ 82	- 18
Manchester	1143	*	+118
Birmingham	1251	*	+ 79
Nottingham	1453	+ 64	+ 48
Bath	1808	+340	+257
Tunbridge Wells	1953	*	+241
London	1513	+368	+235

* No trustworthy average.

sensitive. It was generally recognised that last year was more than usually bright and the figures amply bear out the popular opinion. Not only was the sunshine much in excess of the average, but except at some places in the north-west it was also greatly in excess of that of 1905, which,

again, was a bright year except on certain parts of the south and south-west coasts. It is very satisfactory to find that the greatest excess on the average is in London (Westminster), where the aggregate number of hours, 1513, represents an excess of more than an hour per day. The metropolis was also brighter than Nottingham, very much more sunny than either Manchester or Glasgow, and nearly as bright as Dublin. The most sunny resorts were Shanklin, Torquay, and Jersey, where the aggregate number of hours was nearly double that recorded at the duller places—Glasgow and Manchester. But there was very little difference between the resorts on the east, south-east, and south coasts regarded generally, the only places having less than 1900 hours being Margate and Brighton. During 1905 the most sunny spot in the kingdom was Lowestoft and again last year it was very high on the list. In the north-west the sunshine was more prevalent at Rhyl, Llandudno, Douglas, Isle of Man, and Blackpool than elsewhere, but all these had about an hour per day less than the south and south-east of England. The two inland Welsh resorts in Wales given in the table were much more cloudy than Bath and Tunbridge Wells, and were even less sunny than London. Considering its distance from the coast Tunbridge Wells was exceptionally bright, its total number of hours, 1953, being only a trifle less than that at Bourne-mouth. The only place representing the east of Scotland, Aberdeen, enjoyed but little less sunshine than Scarborough, and more than London and many parts of the English midlands.

SPONTANEOUS AMPUTATION OF AN APPENDIX VERMIFORMIS IN THE SAC OF A FEMORAL HERNIA.

IN the *Albany Medical Annals* for January Dr. F. G. Schaible has reported a case of a very peculiar condition—spontaneous amputation of the vermiform appendix in the sac of a femoral hernia. Since the radical cure for hernia has become customary a large number of cases has been recorded in which the appendix, alone or accompanied by omentum or intestine, occupied a hernial sac. In the majority the sac has been a right inguinal one. Pathological conditions of the herniated appendix are not uncommon. According to Jopson the tendency to inflammation is greater than in the non-herniated appendix. In many cases symptoms supposed to be due to an inflamed or gangrenous strangulated hernia were due to an inflamed or gangrenous appendix which had become adherent to a hernial sac. But no case of spontaneous amputation of the herniated appendix such as the following appears to have been recorded. A woman, aged 80 years, was admitted into hospital. She first noticed a small lump in the right groin about eight years before. This gradually increased to the size of a goose's egg and was recognised as a hernia. At first it produced no symptoms, but later, on the entrance of a portion of intestine into the sac, there were a feeling of weight and extreme pain. At such times she was able to reduce the hernia and was then relieved. She had worn a truss for three years. The hernia came down about every six or eight months. Before admission the patient was seized with slight pain in the right groin which increased until it became intolerable. She did not vomit; the bowels were constipated and the hernia was irreducible. There was a sausage-shaped tumour in the right groin which measured 8.5 by 3.5 centimetres. On opening the sac it was found to contain from three to four inches of ileum, very congested and almost black. The neck of the sac was very tight, being of the size of a finger, and it was necessary to incise the constricting band somewhat. Some hot saline solution was poured on the gut and the colour began to return with contraction of muscular fibres. After

considerable efforts the gut slipped back into the abdomen. A body which was considered to be a peritoneal lipoma was attached to the inner surface of the sac. On further examination it appeared to be a rather short obliterated appendix with smooth ends and without caecal attachment. It seemed to have been amputated by pressure and a definite mesentery was attached to it. A tongue of omentum was removed with the sac. Uninterrupted recovery followed. Examination of the specimen showed attached to the sac a mass of adipose tissue resembling a meso-appendix. Attached to the latter and slightly imbedded in it was a cord-like structure which measured four centimetres in length and half a centimetre in diameter. Its surface was smooth, glistening, and pink-grey and it was rounded at both ends. To these ends were attached by fibrous bands small masses of adipose tissue. Adherent to the hernial sac at its under surface by a long fibrous band was a piece of omentum. Microscopic examination of the appendix showed that the lumen was obliterated and the mucosa completely replaced by fat and connective tissue containing a few lymphoid cells. The musculature was slightly atrophied and there was a slight infiltration of lymphocytes and eosinophiles. The peritoneal coat showed many small hæmorrhages. That the structure was appendix and not some other obliterated tubular structure or ligamentous mass was definitely shown by the character and arrangement of its outer coats. Dr. Schaible thinks that the obliteration of the appendix took place before it entered the sac and that the amputation was due to gradual constriction of the proximal portion of the appendix between the divisions of the fascia lata forming the boundaries of the femoral ring, aided perhaps by the pressure of the truss.

THE MULTUM IN PARVO MEAL.

IT is a notion fondly cherished by some people that the day will come when the human race will subsist entirely on highly concentrated food. The time occupied in eating the daily meals will be saved by swallowing a tablet of concentrated essence and all questions of fastidiousness for food will be banished while the dyspepsia arising from an over-bulky and hastily swallowed meal will finally disappear. The idea is, of course, utterly fallacious and plainly opposed to sound physiological teaching. Such a dietetic consummation thus innocently entertained would probably end in the extinction of the race by disease as a sequence of inanition. The fact is that the volume of food serves a definite purpose in the body. Highly concentrated foods are prone to be very irritating to the digestive organs and they also tend to exhaust the secretory powers of the stomach, the digestive juices being poured out in a quantity far in excess of the requirements of that food and thus secretory energy, which is the key to assimilation, is uselessly spent. Concentrated meat essences containing merely the extractives of meat are, for example, the most powerful exciters of gastric secretion that we possess but when partaken of exclusively they avail nothing in the direction of real nutrition and lead most likely to serious waste of tissue; in a word, to starvation. They serve admirably, however, as a kind of condiment or adjuvant to food, preparing the ground for its reception and digestion. Hence soup is the first item in the physiologically well designed meal. When kept within reasonable limits the bulkiness of food excites a healthy stimulus to the muscular action of the stomach and the bowels, and altogether the indications are plain that the digestive organs are not adapted for dealing with highly concentrated food. Food must have, so to speak, a physiological ballast before it is acceptable to the digestive processes. The simplest way of reducing the bulk of most foods is by depriving them of their natural

moisture. Eight pounds of mutton or beef would thus be reduced to two pounds of dry substance but the water must be replaced to a large extent before the meat can be cooked or eaten. There are, of course, particular cases, as, for example, in illness, in which it is necessary that the diet should be sparing in quantity and yet highly nutritious in quality but in health the use of concentrated foods is physiologically absurd, if not mischievous. The time when men will take for their meals, and be satisfied with, as much concentrated food as will cover a threepenny-piece can never be, so long as the human mechanism is as it is and physiological laws are inexorable.

INVALID TRAVEL IN SOUTHERN EUROPE.

"WHEN will the Italian Government, in the management of its railways, put in practice the police regulations so justly demanded by the outside world for the safety of passengers?" This (writes an Italian correspondent under date Jan. 19th) is the question put by the *Gazzetta del Popolo* of Turin to its exceptionally numerous and influential *clientèle* at the close of an article on the recent murderous assault on an English lady on the much-frequented line between Turin and Modena. When, indeed? For the last six months the inconveniences (to put it mildly) that have followed the transfer of the Italian railways from private companies to the State have been bad enough to deter not a few of the travelling public from using them—one of the latest, and not least unpleasant, of these "inconveniences" being the deadly cold complained of by first- and second-class passengers from the want of adequate heating apparatus. The other day, between Milan and Rome, the inmates of a first-class carriage had to endure the bitter cold of an unheated train as far as Piacenza where at last footwarmers of a primitive type were provided as the *calorifères* were found to be quite out of gear. Serious enough in the case of invalids coming in quest of warmth to the "Sunny South," this "inconvenience" is but trifling compared with the loss of life and injury to limb incurred on the same network, where there have been accidents enough, more or less fatal, to warrant the Milanese *Secolo* in introducing its report of them under the headline "Una Giornata di Scontri" (a day of collisions). And now, as if unpunctuality, discomfort, and general "inconvenience" were too little of a deterrent, the recent "scontri" have been enhanced by something far worse than the all too notorious luggage robberies—namely, a dastardly assault by which an English lady, esteemed for her proficiency and devotion as a nurse in the Boer war, is now lying in a critical state at the Chambery Hospital. Providentially, the promptitude and skill with which surgical intervention came to her relief make her recovery so far hopeful that she has been able to describe her assailant so clearly as to put the police on his track and to justify the newspapers in announcing his arrest as imminent. Coincidentally with the chorus of indignant protest which the Italian press of all political shades is addressing to the Government for immediate and effective reform in its railway management we read in the same journals of meetings of the Association for Promoting the Influx of Foreigners, meetings at which, among the "attractions" and "lures" held out to the English-speaking world, the improvement of the railway service (to say nothing of better hotel accommodation and a less persistent resort to tinned meats and vegetables in the cuisine) is hardly ever mentioned. The association in question is a wealthy as well as an influential body; on its committee senators and members of the Chamber of Deputies are conspicuous for their social weight and public spirit and the names of some of the leading hotel proprietors and merchants are also *in evidence*. Let it bring its undoubted authority and

influence to bear on the Government, in Parliament and through the press; let the administration feel its pressure at elections, supplementary as well as general; let it, in short, act with the energy and force to be expected from an interest—that of the "foreign import" (as the travelling world is somewhat cynically termed)—from which Italy derives a third of her annual revenue, and then we may see the railway service and the "accommodation" it leads up to become what they ought to be—a ready, a comfortable, and an attractive means of bringing the unique resources of Italy as a health resort, combining mental recreation with physical enjoyment, within the reach of a far more numerous *clientèle* than she has ever hitherto had. As it is, access by railway, long somewhat of "a chastened joy," has, thanks to accidents, luggage robberies, and murderous assaults, become so much of a deterrent that the press is more than justified in demanding from the Government an answer to the old, old question: "Quousque tandem?"

ATMOSPHERIC NITRATE.

WE have informed our readers from time to time of the progress that has been made in regard to fixing the nitrogen of the air and converting it into nitrate for agricultural and industrial purposes. The announcement is now made that Professor Kowalski and Professor Mosciol of the University of Freiburg have succeeded in obtaining nitric acid from the air in a simple, direct, and economical way, thus realising the remarkable prediction made by Sir William Crookes as to the production of agricultural fertilisers from the air in his presidential address at the meeting of the British Association for the Advancement of Science at Bristol in 1898. It may be surmised that the new discovery relates to the economic production of nitrate from the combustion of nitrogen by means of an intense spark discharged through air, the electric energy being derived from water power. Further developments will be awaited with the keenest interest, since this announcement obviously bears on the great question of the world's food-supply. Cavendish little thought that his classic experiment in which he showed that nitrous fumes were formed on passing electric sparks through the air was going to have such immense importance in the practical affairs of the world. The country which possesses an illimitable field of natural power will, of course, outstrip all others which are compelled to rely on artificial power in the new manufacture, while it may be anticipated that the natural sources of nitrate, as, for example, those in Chili, will largely be abandoned except for relatively local application.

THE ROYAL SANITARY INSTITUTE.

THE usual course of lectures and demonstrations for sanitary officers will be given in connexion with the Royal Sanitary Institute, London, during the months from February to May. The lectures are held in the Parkes Museum, Margaret-street, London, W., at 7 P.M., generally on Mondays, Wednesdays, and Fridays, with a few exceptions, and the inspections and demonstrations take place generally on Mondays, Wednesdays, and Saturdays, on the first two mentioned days either at the Parkes Museum at 6 P.M. or elsewhere at 2 or 3 P.M., and on Saturdays elsewhere at about the last-named hours. The course is divided into two parts. Part I. comprises four lectures on elementary physics and chemistry in relation to water, soil, air, and ventilation, and meteorology; 21 lectures on Public Health Statutes, the practical duties of a sanitary inspector, municipal hygiene or hygiene of communities, and building construction in its sanitary relations and local physical conditions. The inspections and demonstrations in

-connexion with the lectures include visits to disinfecting stations, dairy premises, municipal dépôts, artisans' dwellings, offensive trades, waterworks, common lodging-houses, sanitary works in progress, and refuse and sewage disposal works. Part II. of the course consists of seven lectures on meat and food inspection, including taking samples of water, food, and drugs for analysis. Practical demonstrations of meat inspection are given. The fee for Part I. is £2 12s. 6d., for Part II. £1 1s., or for the complete course £3 3s. Members and associates of the institute are admitted to the lectures without payment but cannot introduce friends.

RADIUM IN OPHTHALMOLOGY.

A LAUDATORY article on the beneficial effects of radium emanations in various diseases of the eyes appears in the *Clinique Ophtalmologique* for December, 1906, from the pen of Dr. Thiebault of Algiers, who appears to have had considerable experience in the application of this remedy. The cases in which he has observed great improvement in the symptoms are in those of epithelioma, of episcleritis, both superficial, circumscribed or nodular (*doutonneuse*), or general, and of trachoma. He states that he obtained the complete removal of rodent facial epithelioma with a pre-auricular ganglion of eight months' duration and of seven millimetres in diameter by exposure of the ulcer to the radium emanations for 30 minutes at a time for eight weeks. In a case of superficial episcleritis complete recovery followed three applications for three or four minutes to each nodule. A case is recorded of diffuse scleritis of a serious character affecting both eyes and presenting a remote resemblance to leprosy, the cornea being thickened and opaque with large sinuous veins in some parts and a xerotic condition in others. Here repeated applications of radium gradually, so to speak, liquefied the xerosis in the course of four months and with several relapses, the sclerotic resumed its pearly aspect, the vessels resumed their ordinary size, the conjunctiva was easily made to glide on the sclerotic, and, though the cornea remained opaque to the observer, vision, which had been completely lost at the height of the attack, was so far recovered that the patient could dimly see fingers at the distance of a foot and could recognise bright colours. The case did not undergo further improvement by the administration of adrenalin. Considerable success has also attended the use of radium in cases of trachoma, of which he reports several. He thinks that in the future radium-therapy will be largely and successfully employed.

DEATH FROM AN ELECTRIC SHOCK WHILST HANDLING A TELEPHONE RECEIVER AND AN ELECTRIC LIGHT LAMP.

In the *Boston Medical and Surgical Journal* of Dec. 20th, 1906, Dr. A. E. Paine has reported the following extraordinary case which reveals a new danger from the modern development of the use of electricity for lighting and telephones. He was summoned to an oil works where the superintendent was stated to be dead. On arrival at the office he found that the employees had been too frightened and did not dare to touch the telephone. The superintendent was lying on his back with the telephone by his side. The cord of the receiver was broken and the latter lay on the floor. To the right of the body was a broken incandescent desk lamp which was suspended from the ceiling by a cord. The bookkeeper said that the superintendent had telephoned to his house that he would not come home for a little time, and had just hung up the receiver when a crash and a flash of light occurred. On going into the inner office the bookkeeper found the superintendent lying on the floor. He was not positive whether the telephone or the electric lamp cord was in the hand of the deceased, but on trying

to disengage it he received a shock which threw him against the wall. Examination of the body showed a burn on the inside of the thumb, a deep burn extending to the bone on the forefinger near the knuckle, and a deep burn in the palm extending nearly to the bone. The telephone cord, which was not properly insulated and consisted of wire covered by light webbing, was burned through. The nickel-plated handle for holding the receiver of the telephone was burnt on the inside. Dr. Paine thinks that when the deceased was putting on the receiver his hand came in contact with the metal handle, that at the same time he was holding the desk lamp in order to move it, and that he received the charge from the electric light supply. Instantly the plugs at the telephone exchange were blown out. At the inquest an electrical expert explained that this was due to the fact that the telephone wire was not powerful enough to stand the amount of electricity passed into it. There were 3500 volts on the principal wire and 1500 would be sufficient to kill. The telephone wires in the ordinary way simply carried electricity from batteries amounting to about four volts. It seems that at some point (the locality of which is not stated) the electric and telephone wires crossed and were swayed together by the wind. The insulation was there burned off and the whole 3500 volts passed into the telephone wire.

POOR-LAW REFORM COMMISSION (IRELAND).

IN THE LANCET of Nov. 24th, 1906, we commented in a leading article upon the report of the Viceregal Commission appointed by the then Lord Lieutenant of Ireland in 1903 to examine into the question of Irish Poor-law reform. We quoted a passage from the report pointing out that the establishment of a State medical service for Ireland would appear to involve the payment by the State of the whole instead of half of the salaries of medical officers as at present. An Irish correspondent now writes informing us that in reality the State pays three-quarters of the whole cost and not half. He bases his argument upon the following method of procedure and figures. When a board of guardians wishes to raise money for the purposes of Poor law expenses the board makes an estimate which is submitted to the Local Government Board and a demand note is sent to the county council which is also in communication with the Local Government Board. The Local Government Board then pays the county council such sums in relief of local taxation as the council may be entitled to. The county council then deducts the amount due to the guardians in respect of union charges from the amounts specified in the demand note and then strikes a rate to raise the balance required. The amount so raised, together with the amount paid by the Local Government Board in relief of local taxation, is then placed by the county council to the credit of the guardians who pay the medical officers. According to the Local Government (Ireland) Act of 1898 the income of the county council is derived from two sources (Section 51)—a levy in the form of a poor-rate and certain free grants in relief of local taxation. These free grants are: 1. A grant from the account for the reduction of local taxation, the funds of which are supplied by certain excise and other licence duties plus a grant of £79,000 per annum (Section 58). It is from this account that the Local Government Board pays the half of the medical officers' salaries and half the cost of medicines and certain educational expenses (Section 58). 2. A free grant from the agricultural grant (Section 48). Thus it works out that half the salary of medical officers is paid by the Local Government Board through the account for the reduction of local taxation. The remaining half of the salary is a charge on the poor-rate, but the poor-rate is annulled by a

further free grant from the agricultural grant, so that the county council really only has to pay about half the sum levied for poor-rate. Our correspondent further gives us the actual figures of an Irish union in a recent year, which are as follows. Demand note of the guardians, £4420. This was made up as follows :—

	£	s.	d.
(1) Per agricultural grant, Section 48	1363	10	0
(2) Half refund of educational and medical expenses (from Account for Reduction of Local Taxation), Section 53.	464	0	0
(3) Government grant other than agricultural, such as Probate and Estate Duties	472	0	0
Total grants	£2319	10	0
Amount raised by County Council by means of poor-rate	2109	10	0
	£4420	0	0

The total amount of grants in aid was thus £2319 10s., while the county council levied £2100 10s., the amount levied by the county council being thus £109 10s. less than half of the total amount, or in other words the State contributions amount to £219 more than the sum raised by the county council poor rate.

UNIVERSITY COLLEGE, LONDON.

A COURSE of eight lectures on Certain Fundamental Problems in Physiology common to Animals and Plants, to be given by Dr. W. M. Bayliss, F.R.S., on Wednesdays, at 5 P.M., began on Jan. 23rd. The phenomena to be dealt with will be taken as far as possible in the following order: Assimilation of Carbon, Enzyme Action, Mechanism of Oxidation, Properties of Colloids, Permeability of Membranes, and Transmission of Stimuli. These lectures are open to all students of the University of London, also to qualified medical men and to such other persons as are specially admitted.

THE EARTHQUAKE IN JAMAICA.

THE calamity which has overwhelmed the city of Kingston in Jamaica exhibits all the appalling incidents which are almost necessarily associated with an earthquake of any severity. There are the wholesale destruction of buildings, the hopeless feeling of insecurity, the almost universal outbreak of fire, and the sinking of a portion of the land into the sea. The medical aspects of the results of an earthquake in a densely inhabited region are, of course, serious. Apart from the grievous injuries inflicted by masses of falling buildings and the burns from the fire which always breaks out the more remote results have to be considered. Want of food and exposure, in addition to the lowering of the resisting powers of the body by mental anguish, lead to many deaths from pneumonia or other acute diseases, while the presence of numbers of unburied dead and the almost certain defilement of the water-supply may give rise later to severe epidemics. Sir James Crichton Browne, however, writing in the *Times* of Jan. 19th, points out that in one particular the disaster may prove a blessing in disguise by its having removed in a very thorough manner a number of grossly insanitary houses. The rebuilding of the city therefore offers an opportunity for greatly improving its general hygienic conditions. We may add that the general behaviour of the authorities seems to have been excellent and that everything possible is being done in collecting and burying the bodies of the dead, but with regard to the wounded and injured the medical resources of the island are apparently seriously strained. This being so we can only regret the unfortunate misunderstanding which appears to have arisen between the Governor and the admiral in command of the United States squadron which at first rendered admirable help. Among the numerous victims was Dr. Thomas Savage of Birmingham, of whose career we give details in another column. Valuable aid was also given by

Mr. Arthur Evans, M.R.C.S., L.R.O.P., the surgeon of the steamship *Port Kingston*, which was converted into a hospital by leave of Sir Alfred Jones.

A COMPLIMENTARY dinner is being organised to commemorate the bestowal by the King of the honour of C.M.G. on Mr. Pietro Michelli, the Secretary of the Seamen's Hospital Society, Greenwich. The committee consists of Sir Patrick Manson, Sir William Barnett, Sir Frederick Young, Mr. Percival A. Nairne, Professor R. T. Hewlett, and Mr. James Cantlie. The dinner will take place at the Trocadéro Restaurant, London, on Friday, Feb. 15th next. Mr. Nairne, the chairman of the Board of Governors of the Seaman's Hospital Society, will preside. We are authorised to state that anyone who has not been reached by circular and who would like to be present can obtain a dinner ticket at the price of one guinea on application to the honorary secretaries at the offices of the Seamen's Hospital Society, 13A, Cookspur-street, Charing Cross, London.

A TELEGRAM from the Governor of the Mauritius received at the Colonial Office on Jan. 18th states that for the week ending Jan. 17th there were 6 cases of bubonic plague and 4 deaths from the disease.

VITAL STATISTICS.

ANNUAL BIRTH-RATES AND DEATH-RATES FROM THE SEVEN CHIEF EPIDEMIC DISEASES IN ENGLAND AND WALES DURING 1906.

	Births.	Annual rates per 1000 living			Infant mortality— Annual death-rate of infants under one year per 1000 births.
		Deaths from all causes.	Deaths from seven chief epidemic diseases.		
England and Wales	27.0	15.4	1.73		133
76 great towns	27.9	16.0	2.24		146
142 smaller towns	26.5	14.4	1.70		133
England and Wales, less the 218 towns	25.3	15.0	1.18		115

Note.—These figures are provisional.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8747 births and 5549 deaths were registered during the week ending Jan. 19th. The annual rate of mortality, which had been equal to 22.4 and 20.7 in the two preceding weeks, further declined to 18.1 in the week under notice. During the first three weeks of the current quarter the death-rate in these towns averaged 20.4 per 1000, the rate during the same period in London being 21.4. The lowest death-rates in the 76 towns during last week were 8.7 in Handsworth, 9.0 in King's Norton, and 9.1 in West Bromwich and in Reading; the rates in the other towns ranged upwards to 25.8 in York, 26.0 in Hull, 27.6 in Rotherham, and 35.3 Middlesbrough. The 5549 deaths in the 76 towns showed a further decline of 799 from the high numbers returned in the two preceding weeks, and included 381 which were referred to the principal epidemic diseases, against 478 and 423 in the two previous weeks; of these, 133 resulted from measles, 92 from whooping-cough, 56 from diphtheria, 34 from scarlet fever, 33 from diarrhoea, 23 from "fever" (principally enteric), and not one from small-pox. The deaths from these epidemic diseases were equal to a mean annual rate of 1.2 per 1000 in the 76 towns; the rate in London from the same diseases did not exceed 1.1. No death from any of these epidemic diseases was registered last week in Bristol, Croydon, Gatehead, Hornsey, or in four other of the 76 towns; the annual death-rate

and the total number of cases of disease and injury was 81,563, which is in the ratio of 734.71 per 1000, being a decrease of 119.29 per 1000 as compared with the average ratio of the last eight years. The total number of persons invalided was 2653, which is in the ratio of 23.89 per 1000, and shows a decrease of 4.98 in comparison with the average of the last eight years. The ratio of invaliding for disease alone was 22.02, and for injury 1.87 per 1000. Of those stations where comparisons can be made with the figures for 1904, the Mediterranean and irregular force show increased invaliding ratios; China, East Indies, Australia, and Cape of Good Hope show diminished ratios. Deaths number 433, a ratio of 3.9 per 1000, showing a decrease of 1.42 per 1000 as compared with the ratio for the last eight years. Of these deaths 305 were from disease and 128 from injuries. The death-rate due to disease alone was 2.74, and that due to injuries was 1.15 per 1000. Compared with 1904, the stations showing an increased death-rate are the Mediterranean and the irregular force; the remainder of those for which comparisons are made show a decreased rate. The Channel Fleet shows the lowest sick-rate and the irregular force the highest. There are many interesting notes and figures to be found under the heading of General Diseases and in the brief reports of the various stations. The appendix contains Notes on the Distribution of Mediterranean Fever in the Fleet during 1905, Sc., by Fleet-Surgeon P. W. Bassett-Smith, R.N.; a Report of Work Done in the Laboratory at the Royal Naval Hospital, Malta, during the Year 1905 by Surgeon H. C. Whiteside, R.N.; a Statistical Report of Mediterranean Fever Cases occurring amongst the Nursing Staff and Patients under Treatment in Hospital for Other Diseases; a paper on Physical Culture and its Pitfalls, with a Critical Analysis of Swedish Drill, by Staff Surgeon A. Gaskell, R.N.; and another on Some Cases of Appendicitis treated at Haulbowline 1904 to 1906, by Fleet-Surgeon J. L. Barrington, R.N., Royal Naval Hospital, Haulbowline.

NURSING IN THE NAVY.

We have not yet enlisted the services of trained female nurses on battleships, and indeed our naval nurses form a small and comparatively unimportant body. In the United States Surgeon-General Rixey has just issued a plea for trained women nurses in the service, pointing out that in all modern wars the services of women nurses have proved of great value. In time of peace such nurses would secure for the sick at naval hospitals a better medical and surgical nursing service, he believed, than was now obtained and would be of great use in teaching and training the men of the hospital corps. In time of war they would be needed, in addition, for hospital ships, and their presence in hospitals would release a large number of hospital corps men for duty on board men-of-war. The recommendations of Surgeon-General Rixey for the establishment of a corps of trained nurses in the navy of the United States has, according to the *Nursing Times*, met with the approval of the Navy Department.

RUSSIAN WAR STATISTICS.

The *Broad Arrow* publishes in its issue of Jan. 19th some medical statistics of the Russian army lately officially published and quite correctly describes them as "curious reading." The period covered by the statistics embraces the whole period of the war, except the siege of Port Arthur and the combats in the island of Sakhaline (Sagallen), dating from February, 1904, to Jan. 1st, 1905. The following extract gives a very good idea of the nature of the figures. The admissions to hospital and deaths of officers are thus tabulated. Russian army: officers, sick and treated in hospital, 13,143 or 102 per cent.; cured, 8760, or 63 per cent.; sent to rear, 3264, or 25 per cent.; died, 210, or 1.6 per cent.; invalided, 57, remaining under treatment in the Far East, 663, or 6.9 per cent.; died from accidents, 10, or 0.078 per cent.; by suicide, 33, or 0.25 per cent. The deaths from "accidents" are thus classed: Alcoholism, 2 per cent.; drowned, 2 per cent.; railway accidents, 1.9 per cent.; and firearms, 0.09 per cent. Among the suicides 9 per cent. of the officers and 8 per cent. of the men took their lives by means of firearms.

The prize of £50 annually given by Sir John Cragg, M.V.O., to the London School of Tropical Medicine, for the investigator who makes the most valuable contribution to tropical medicine during the year, has just been awarded to Fleet-Surgeon P. W. Bassett-Smith, R.N.

Correspondence.

"Audi alteram partem."

EPSOM COLLEGE.

To the Editors of THE LANCET.

SIRS,—In a leading article dealing with the Benevolent Agencies of the Profession which appeared in THE LANCET of Jan. 12th you kindly referred in appreciative terms to the work carried out by the Royal Medical Foundation attached to Epsom College. As stated in the article, some foundation scholars practically owe all they possess to the help rendered by the College. Probably few of your readers are aware of what is the actual cost of educating and maintaining a foundation scholar. In some institutions where the standard of education is far below that provided at Epsom, and where the pupils leave at an earlier age, a child can be purchased into the school for a sum of approximately £200; but at Epsom College each foundation scholar who remains for the full time allowed by the by-laws costs between £700 and £800. Moreover, sons of medical men who pay the usual fees receive a substantial benefit, for, under the by-laws of the College, such boys are educated "at a sum as near to prime cost as reasonably may be."

In return, old Epsomians might do much for their alma mater if they would carry in their memory the needs of the foundation; and it would be a matter of great gratification if a large percentage of them would thus give practical evidence of loyalty and attachment to their old school. A few foundationers have contributed generously and there are doubtless others who, if the thought to do so occurred to them, are able and would be desirous to do likewise.

I should like to quote in *extenso* a letter just received from Australasia, the tone of which is most gratifying:—

DEAR SIR,—Herewith a draft for £5 10s. as a donation to the Benevolent Fund of your College. I sent you £5 last year. My intention is to send £31 10s. in all, being a guinea a year for each year I was able to practise. I am a chronic invalid from diabetes and heart trouble, therefore should I die before I have sent the whole £31 10s. my wife or family will send the balance.

Yours faithfully,

With this excellent example before them, those old Epsomians who have hitherto done nothing for the foundation of Epsom College may feel prompted to follow so admirable a lead. A donation of such a sum as would represent one guinea a year for each year the donor had been in practice would be a most welcome contribution to the funds, as well as a substantial expression of thanks for benefits received from the College. Coming now at a time when the funds of the foundation are severely depleted, owing to the extensive drainage and sanitary operations which cost £8000, such contributions would be doubly acceptable.

There are, of course, many old Epsomians who are not in a position to make any but small donations; and those who are unable to contribute themselves may yet be able to collect contributions. Under the by-laws of the College the same voting privileges are given for a collection of 20 guineas as for a donation of 10 guineas. As evidence of what can be done by medical men making appeals to others, I may mention that, in response to my letter in the medical press a few weeks ago, one medical man at once collected over £10, and an old Epsomian has lately obtained a grant of £500 from executors in whose hands a large sum of money had been left for disposal amongst charitable institutions.

I am, Sirs, yours faithfully,

HENRY MORRIS, Treasurer.

37, Soho-square, W., Jan. 16th, 1907.

THE PERSISTENCY OF THE INFECTION IN CERTAIN CASES OF SCARLET FEVER.

To the Editors of THE LANCET.

SIRS,—There was a very interesting short article in THE LANCET of Jan. 12th, p. 68, on the above subject. All medical men who have had much experience in the administration of fever hospitals must have frequently made the same observations as Dr. H. P. Berry of Grantham. The whole subject of "return" cases and persistency of infection

in scarlet fever is full of difficulties and the solution of the problem is at present shrouded in mystery. On the subject of "return" cases, which, of course, also has reference to the persistency of infection, in my last annual report I wrote as follows:—

Even after the most careful inquiries it is very difficult to satisfy one's self in a large number of instances that the child lately from hospital is the cause of the second case becoming infected and I am of opinion that many cases styled "return cases" are not return cases, in spite of the apparently strong presumptive evidence sometimes forthcoming; and my experience inclines me more and more to the opinion that just as the Klebs-Loeffler bacillus (the cause of diphtheria) may be found in the throats of people in perfect health, so the infection of scarlet fever, whatever it may be, may remain latent and only become active when the lowering of the body health from various reasons favours such increased activity of the infective matter as to cause the development of scarlet fever.

In other words, I am of opinion that many so-called "return" cases have become infected *before removal to hospital of the first case*, and the infecting organisms, whatever they may be, have remained latent until from some cause or other they have overcome the resisting powers of the patient *coincidentally with* the return of the other case from the hospital.

Let me give a very striking case bearing on this point. A child was sent into the Bootle Corporation Infectious Hospital notified as suffering from scarlet fever. She was admitted into the acute ward. On my examining her I discovered no signs of scarlet fever and I ordered her removal to the convalescent ward. The child remained in hospital for about five weeks, and after having remained perfectly well throughout her stay in the ward she was sent home. Within a week after her return home I received a notification that this same child was suffering from scarlet fever.

We have here an example of a child who had been in an acute scarlet fever ward for one day and a convalescent scarlet fever ward for over four weeks—that is to say, she had lived in an atmosphere impregnated with the infection of scarlet fever for five weeks and had remained quite well, probably because she had been kept clean and had been well fed and clothed; in other words, her resisting power had been kept up. When she returned home where her mode of life became less regular, where she was not so well fed—in other words, when her resisting power became lessened—the infection of scarlet fever, which must have been there all the time, developed. From the time of her discharge from the hospital until her return to the hospital she had not been out of doors nor had there been any visitors in the house, so that outside sources of infection might be excluded in this case. I have never met an instance which would support better than this the theory that the infection of scarlet fever may presumably remain latent as in diphtheria, and if the infection of the disease may remain latent in a healthy individual it may, of course, equally persist in an individual convalescent from the disease.

Again, which of us has not received into hospital a second case of scarlet fever from a house the day before or two days before the first case returned to that house from hospital? If circumstances had been reversed and Case No. 2 had been removed to hospital two days *after* instead of *before* the return home of the first case, Case No. 2 would definitely have been ascribed as being the result of infection from Case No. 1 in the absence of any other known cause of infection, even although Case No. 1 from outward appearances was as free from infection as a child could possibly be. Again, I think it is a common experience that it is precisely those cases which remain in hospital a long time which are the supposed causes of "return" cases. This may, of course, be that the clinical conditions which have necessitated the prolonged stay in hospital of any particular patient are precisely those which are the cause of infection in other children after they are discharged, though it may be that the result of the prolonged breathing of the infected atmosphere of a scarlet fever ward has been the accumulation in the nasal chambers or other places of the organisms causing the disease.

Whatever may be the explanation of "return" cases two facts are certain: (1) "return" cases more commonly result from the cases which have been treated for a long time in hospital than from those which have remained in hospital for shorter periods; and (2) the majority of "return" cases occur in the winter time when the weather is persistently unfavourable and the children are perforce kept in the wards continually breathing an infected atmosphere, and thus

cannot benefit from the disinfecting effects in the air passages of breathing the fresh air out of doors.

I am, Sirs, yours faithfully,

T. W. N. BARLOW,

Medical Officer of Health, Bootle.

Jan. 21st, 1907.

TYPHUS FEVER IN TENERIFFE.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow me to call attention in your columns to the above subject? It is officially admitted that typhus fever (or "plague," the authorities have not yet arrived at an exact diagnosis) exists in Teneriffe at the present time and I think it is right that the profession at home should know it. The epidemic is not an extensive one and, so far as I can ascertain, there have been only about a dozen cases, confined to Santa Cruz and its immediate neighbourhood. The careful traveller runs little or no risk of taking the disease, but the preposterous eccentricities perpetrated by the Spanish officials under the pretext of prophylaxis are enough to scare away any intending visitors and are calculated to afford them the maximum of trouble and inconvenience if they are bold enough to land.

Let me briefly relate the experiences of the party with whom I am travelling. We landed direct from England on Jan. 4th, 1907, and proceeded at once in carriages for Orotava. Each carriage bore a printed notice stating that it had been "disinfected" the same day, and the value of this disinfection may be estimated by the methods employed upon ourselves later. At Laguna we were turned out, led to an evil-smelling shed by the roadside, and a policeman pumped a spray of very dilute creolin solution over our boots and nether garments. No doctor was present. We smiled and passed on in fresh carriages, thinking the trouble was all over, but a very much more serious ordeal awaited us near Orotava. Here there was a large disinfecting station under the charge of two doctors, to whom I explained politely the circumstances of our journey and gave an assurance that we could not possibly have been in contact with any fever case or be conveying fomites in our luggage. But in vain. We were turned out again and this time literally drenched with fluid from a large garden syringe. The said fluid purported to be a solution of corrosive sublimate, but I received about half a drachm into my mouth and it tasted like nothing but dirty water, nor did it react at all on the metal fittings of our trunks. The gentlemen escaped fairly well, having hastily donned mackintoshes, but the ladies of the party were soaked to the skin in places and their dresses considerably damaged. Nor was this all; our wraps and trunks were sprayed and sponged copiously, with the result that the former were soaked through and the contents of the latter soiled and wetted, though the trunks themselves were not opened. All these proceedings were conducted with the exasperating deliberation and lack of method characteristic of the Latin races and finally, after the strenuous hygienists had disinfected an unfortunate pug dog which had strayed up from Orotava, we were allowed to depart amid the jeers of a crowd of loafers to whom our sufferings evidently afforded great satisfaction.

Such are Spanish methods of prophylaxis of infectious disease and one cannot but feel contempt for the authorities and medical officers who practise such ridiculous ineptitudes in the name of science. The folly of such proceedings must be obvious to anyone with the slightest knowledge of the disease and the manner in which it is disseminated. Of notification and the isolation of "contacts" I could hear nothing, and the only visible sign of disinfection was a sprinkling of chloride of lime round a house in which a fatal case had occurred at Laguna.

The important point is that this splendid health resort is being spoiled for invalids, on whom a soaking such as we got might have the most disastrous results. The excellent hotels at Orotava are not filling as they should and the companies which own them will suffer serious financial loss unless the authorities soon adopt saner and less objectionable methods. I would like to add that two years ago this ship was refused pratique except on the terms of a complete fumigation at Santa Cruz because we had three months before been in La Guayra—a supposed infected port—and in spite of the fact that we had since maintained a perfectly clean bill of health.

In conclusion I would repeat that visitors to Teneriffe

need not be unduly fearful of infection but must be prepared to face considerable loss and discomfort so long as the present sanitary reign of terror exists.

I am, Sirs, yours faithfully,

W. H. PELLE, M.D. Dub., D.P.H.

S.X. Erong, Santa Cruz, Tenerife, Jan. 6th, 1907.

SANITATION IN EGYPT.

To the Editors of THE LANCET.

SIRS,—May I offer some comments on the important and interesting letter of your Cairo correspondent on "The Drainage of Cairo" in THE LANCET of Dec. 22nd last?

What strikes a visitor interested in these matters is that the drainage of Cairo is only one item in the great problem of Egyptian sanitation. Your correspondent appears to imply that while there is a terribly high infantile mortality in Cairo, the health conditions in the villages are relatively good. It is to be feared that this is not the case. By all accounts the infantile mortality is everywhere enormous; one authority has repeatedly put it at two of every three children born. Certainly the conditions of water-supply and sewage in the villages are shockingly bad. Everywhere the drinking-water is obviously polluted in every conceivable way. Even in the small modern town of Helouan, a Cairo "health resort" on the edge of the desert, I have seen a pestiferous open channel, fortuitously formed, slowly carrying and depositing filth in one of the side areas. The water-supply of Helouan appears to be from wells, and in the porous desert soil percolation seems inevitable.

As to Cairo, it is to be noted that while the Anglo-Indian expert is preparing his report a number of streets are being laid with asphalt. This is in itself a desirable reform, but as the asphalt would have to be broken up again in case of a system of drainage being set up it is to be presumed that the Government do not contemplate such a system but have in view an extension or reform of the present method of removal by sanitary carts. If that be so, the time has clearly come for the development of such a system in the other towns and villages likewise. Your readers may remember that during the South African war Sir Arthur Conan Doyle made it a part of the case against the Boers that in their towns they had no drains. The British people should make the effort to realise that that is the state of things not only throughout the British colonies in South Africa—where it is justifiable—but throughout all Egypt (barring Alexandria) under British control. And even the Alexandria sewage system is very defective. The report of the Public Health Department for 1905 expressly ascribes the persistence of plague in Alexandria partly to the dilapidated state of the drains. Concerning the cesspools of Cairo, it may be true that some of the latest are well built; but the official reason given in the past for discontinuing the system of drainage begun before the occupation was that digging operations in Cairo were so often fatal to the diggers by reason of the infiltration of sewage from the existing cesspools. There is, I understand, no regular inspection of cesspools, no enforced law for their being periodically emptied, no limitation as to their size, and no requirement as to their being cemented.

It is to be feared that the explanation given by your correspondent of the long delay in filling up the open ditch in Cairo called the Khaliq—to the effect that the resistance came from Moslem fanaticism—is unduly favourable to the Government. The real reason seems to have been the official unwillingness to spend money on public health. What was finally done was to give the ditch as a concession to a tramway company on condition of their filling it up. They did so and laid a double tramway line on the narrow roadway they made, thus constituting the most dangerous thoroughfare in Cairo.

As to the present Cairo water-supply, on which your correspondent passes no judgment, I may mention that in the School of Police the drinking water is very carefully filtered, and the authorities are satisfied that this precaution has greatly raised their health standard. That is to say, the ordinary water is officially recognised to be bad. It is always discoloured at high Nile. Your readers can infer what are the chances for the rest of Cairo, with its population of nearly three-quarters of a million, and for the rest of Egypt, where the water-supply is still primeval, being generally taken from the Nile, or unprotected wells and canals, or stagnant pools.

Let me add that in Cairo there are only some five or six public latrines; that these are solely for men, and all in a small space in or near the Esbekieh Gardens; that they emit even in winter a great stench (one lately blew up from the gases generated beneath it); that natives can be seen in open day availing themselves (for all purposes) of the paths and walls in some of the principal tramway thoroughfares; that there are only some three or four drinking fountains, set up by pious Moslem donors; and that even in some modern streets may be seen pails or jars of unfiltered and sometimes dirty drinking water, charitably placed for the poor by Moslem householders. These jars commonly stand under the trees where filth accumulates. There are no public washhouses, nor public baths, apart from the impossible baths attached to the mosques—and this in a country where for six months of the year the climate is tropical. Yet another item. Flat tenements of five or even of six storeys are now being rushed up, though many complaints are made in the newspapers that the pressure is often hardly enough to take the water to the second floors. I say nothing as to inspection of milk-supply which, I fear, is much needed.

I am, Sirs, yours faithfully,

Cairo, Jan. 10th, 1907.

JOHN M. ROBERTSON.

MILK IN SMALL GENERAL SHOPS.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Jan. 19th, p. 193, I notice an article from a correspondent on "Milk in Small General Shops." As to the unsuitability of the majority of such premises for the sale of milk there can be no difference of opinion, but the statement that 70 per cent. of the milk-supply of London is retailed from such shops is, I think, erroneous and should therefore not be allowed to pass without comment. Surely the dairymen of London are responsible for more than 30 per cent. of its milk-supply.

I have recently been inquiring into the subject in this borough and enclose you the result of my investigations. It will be seen that while 57 dairies sell 2250 gallons of milk daily, an average of nearly 40 gallons per dairy, 69 small general shops such as described by your correspondent sell but 70 gallons daily, an average of practically only one gallon per shop. If the conditions prevailing here are similar to those in the East of London—and I think such may fairly be claimed to be the case—the percentage of milk sold by these shops, grossly polluted though such milk must be, is fortunately not nearly so large as is stated by your correspondent. With the rest of the paper I cordially agree and also fully endorse the opinion expressed as to the large amount of condensed milk that is given to children, especially in poor neighbourhoods, such condensed milk, moreover, as my inquiries show, being only too often the condensed skimmed variety.

I am, Sirs, yours faithfully,

G. SOWDEN,

Medical Officer of Health for the Borough of East Ham.

Jan. 21st, 1907.

GAS FIRES.

To the Editors of THE LANCET.

SIRS,—Will you allow me space for a short reply to the letter from Mr. J. H. Brearley which appeared in THE LANCET of Jan. 12th? In that letter the author takes the unusual course of quoting without my permission portions of a correspondence I had with him last year on the subject of gas fires; and while I wrote nothing to Mr. Brearley that need not be published I object to isolated sentences being chosen for reproduction and still more to what Mr. Brearley "gathers" from my letters. Thus, he gathers from what I wrote "that the gas fire was fitted into the same flue as the coal fire without any consideration as to the satisfactory carrying away of the products." Yes, it was fitted into the same flue as the coal fire. Is not that done in nine cases out of ten? Is it not the "ordinary way"? And that was therefore the case I wished to examine. Mr. Brearley goes on to say that I paid no consideration as to the satisfactory carrying away of the products. Now I stated in my pamphlet that the "stove worked perfectly well," and this, of course, includes the carrying away of the products of combustion. Mr. Brearley seems to forget that I undertook a serious investigation, that I devoted 15 months to the work, that I obtained concordant results,

in scarlet fever is full of difficulties and the solution of the problem is at present shrouded in mystery. On the subject of "return" cases, which, of course, also has reference to the persistency of infection, in my last annual report I wrote as follows:—

Even after the most careful inquiries it is very difficult to satisfy one's self in a large number of instances that the child lately from hospital is the cause of the second case becoming infected and I am of opinion that many cases styled "return cases" are not return cases, in spite of the apparently strong presumptive evidence sometimes forthcoming; and my experience inclines me more and more to the opinion that just as the Klebs-Loeffler bacillus (the cause of diphtheria) may be found in the throats of people in perfect health, so the infection of scarlet fever, whatever it may be, may remain latent and only become active when the lowering of the body health from various reasons favours such increased activity of the infective matter as to cause the development of scarlet fever.

In other words, I am of opinion that many so-called "return" cases have become infected *before removal to hospital of the first case*, and the infecting organisms, whatever they may be, have remained latent until from some cause or other they have overcome the resisting powers of the patient *coincidentally with the return of the other case from the hospital*.

Let me give a very striking case bearing on this point. A child was sent into the Bootle Corporation Infectious Hospital notified as suffering from scarlet fever. She was admitted into the acute ward. On my examining her I discovered no signs of scarlet fever and I ordered her removal to the convalescent ward. The child remained in hospital for about five weeks, and after having remained perfectly well throughout her stay in the ward she was sent home. Within a week after her return home I received a notification that this same child was suffering from scarlet fever.

We have here an example of a child who had been in an acute scarlet fever ward for one day and a convalescent scarlet fever ward for over four weeks—that is to say, she had lived in an atmosphere impregnated with the infection of scarlet fever for five weeks and had remained quite well, probably because she had been kept clean and had been well fed and clothed; in other words, her resisting power had been kept up. When she returned home where her mode of life became less regular, where she was not so well fed—in other words, when her resisting power became lessened—the infection of scarlet fever, which must have been there all the time, developed. From the time of her discharge from the hospital until her return to the hospital she had not been out of doors nor had there been any visitors in the house, so that outside sources of infection might be excluded in this case. I have never met an instance which would support better than this the theory that the infection of scarlet fever may presumably remain latent as in diphtheria, and if the infection of the disease may remain latent in a healthy individual it may, of course, equally persist in an individual convalescent from the disease.

Again, which of us has not received into hospital a second case of scarlet fever from a house the day before or two days before the first case returned to that house from hospital? If circumstances had been reversed and Case No. 2 had been removed to hospital two days *after* instead of *before* the return home of the first case, Case No. 2 would definitely have been ascribed as being the result of infection from Case No. 1 in the absence of any other known cause of infection, even although Case No. 1 from outward appearances was as free from infection as a child could possibly be. Again, I think it is a common experience that it is precisely those cases which remain in hospital a long time which are the supposed causes of "return" cases. This may, of course, be that the clinical conditions which have necessitated the prolonged stay in hospital of any particular patient are precisely those which are the cause of infection in other children after they are discharged, though it may be that the result of the prolonged breathing of the infected atmosphere of a scarlet fever ward has been the accumulation in the nasal chambers or other places of the organisms causing the disease.

Whatever may be the explanation of "return" cases two facts are certain: (1) "return" cases more commonly result from the cases which have been treated for a long time in hospital than from those which have remained in hospital for shorter periods; and (2) the majority of "return" cases occur in the winter time when the weather is persistently unfavourable and the children are perforce kept in the wards continually breathing an infected atmosphere, and thus

cannot benefit from the disinfecting effects in the air passages of breathing the fresh air out of doors.

I am, Sirs, yours faithfully,

T. W. N. BARLOW,
Medical Officer of Health, Bootle.

Jan. 21st, 1907.

TYPHUS FEVER IN TENERIFFE.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow me to call attention in your columns to the above subject? It is officially admitted that typhus fever (or "plague," the authorities have not yet arrived at an exact diagnosis) exists in Tenerife at the present time and I think it is right that the profession at home should know it. The epidemic is not an extensive one and, so far as I can ascertain, there have been only about a dozen cases, confined to Santa Cruz and its immediate neighbourhood. The careful traveller runs little or no risk of taking the disease, but the preposterous eccentricities perpetrated by the Spanish officials under the pretext of prophylaxis are enough to scare away any intending visitors and are calculated to afford them the maximum of trouble and inconvenience if they are bold enough to land.

Let me briefly relate the experiences of the party with whom I am travelling. We landed direct from England on Jan. 4th, 1907, and proceeded at once in carriages for Orotava. Each carriage bore a printed notice stating that it had been "disinfected" the same day, and the value of this disinfection may be estimated by the methods employed upon ourselves later. At Laguna we were turned out, led to an evil-smelling shed by the roadside, and a policeman pumped a spray of very dilute creolin solution over our boots and nether garments. No doctor was present. We smiled and passed on in fresh carriages, thinking the trouble was all over, but a very much more serious ordeal awaited us near Orotava. Here there was a large disinfecting station under the charge of two doctors, to whom I explained politely the circumstances of our journey and gave an assurance that we could not possibly have been in contact with any fever case or be conveying fomites in our luggage. But in vain. We were turned out again and this time literally drenched with fluid from a large garden syringe. The said fluid purported to be a solution of corrosive sublimate, but I received about half a drachm into my mouth and it tasted like nothing but dirty water, nor did it react at all on the metal fittings of our trunks. The gentlemen escaped fairly well, having hastily donned mackintoshes, but the ladies of the party were soaked to the skin in places and their dresses considerably damaged. Nor was this all; our wraps and trunks were sprayed and sponged copiously, with the result that the former were soaked through and the contents of the latter soiled and wetted, though the trunks themselves were not opened. All these proceedings were conducted with the exasperating deliberation and lack of method characteristic of the Latin races and finally, after the strenuous hygienists had disinfected an unfortunate pug dog which had strayed up from Orotava, we were allowed to depart amid the jeers of a crowd of loafers to whom our sufferings evidently afforded great satisfaction.

Such are Spanish methods of prophylaxis of infectious disease and one cannot but feel contempt for the authorities and medical officers who practise such ridiculous ineptitudes in the name of science. The folly of such proceedings must be obvious to anyone with the slightest knowledge of the disease and the manner in which it is disseminated. Of notification and the isolation of "contacts" I could hear nothing, and the only visible sign of disinfection was a sprinkling of chloride of lime round a house in which a fatal case had occurred at Laguna.

The important point is that this splendid health resort is being spoiled for invalids, on whom a soaking such as we got might have the most disastrous results. The excellent hotels at Orotava are not filling as they should and the companies which own them will suffer serious financial loss unless the authorities soon adopt saner and less objectionable methods. I would like to add that two years ago this ship was refused pratique except on the terms of a complete fumigation at Santa Cruz because we had three months before been in La Guayra—a supposed infected port—and in spite of the fact that we had since maintained a perfectly clean bill of health.

In conclusion I would repeat that visitors to Tenerife

the enamel is largely formed before artificial feeding is commenced. Mr. C. S. Fomes in his "Dental Anatomy" writes, "the first temporary molars are complete as to their maturing surfaces" at birth. As these are perhaps the teeth of the temporary set which succumb first and most rapidly to dental caries, it is impossible to attribute this to defective development or to any predisposition to decay in the tooth itself as a result of artificial feeding. Now this is important, as about 99 per cent. of children at the age of five or six years have dental caries in several teeth, of which the first temporary molar is almost invariably one. Again, children who are fed physiologically after the artificial feeding of the first year invariably, so far as my observations go, have teeth free from dental caries. I have come across a few examples of this, although as physiological feeding, having regard to the consistency of the food and the arrangement of the meal, is so generally unknown such examples are rarely to be found. With regard to the permanent teeth which may be affected by artificial feeding, it would appear that the evidence is but slight in support of the supposition that it has an injurious effect on the development or structure of the teeth. It would appear rather that some severe constitutional disturbance, the result of mal-environment, is generally responsible for the defective structure when it exists, though occasionally grossly improper feeding and consequent ill health may be presumed to have a like effect. Mr. Sidney Spokes has made a valuable contribution to this subject. He finds that in one of our public schools 4.6 per cent. of the boys had hypoplasia—i.e., defective development of the enamel in the permanent teeth—while in the Poor-law schools the percentages were 7.1 for the boys and 7.5 for the girls. The statistics are not mentioned as to the relative number of breast-fed children in either group, but notwithstanding their greater freedom from hypoplasia it may be presumed that the boys of the public school were less frequently breast fed than the boys and girls of the Poor-law schools. Corroborative evidence of like nature is, I think, to be found in the investigation undertaken by Mr. J. H. Gibbs and Mr. G. W. Watson, recently recorded by Dr. Chalmers Watson in *THE LANCET*. With regard to Dr. Creswell's second question, it is no doubt the case that the teeth of bottle-fed children do decay more early and rapidly than those of breast-fed children, not, as a rule, because the teeth are in the least defective, but because such children are usually kept longer and more exclusively on the bottle than breast-fed children are kept at the breast. Moreover, having acquired in all probability a delicate digestion the result of artificial feeding, they are kept more strictly on a diet in which a more or less starchy artificial food is substituted for, or added to, cows' milk, in order to prevent curdling and the dyspeptic troubles which might follow. Such bottle-fed children are also likely at a later age to be kept more strictly to a diet in which the bread or rusks, &c., are carefully "well soaked" in the milk for like reason. To this may be added the fact that an artificially fed baby occasionally develops rickets after it is a year or two old, and then, instead of being given a little fish or chicken, or vegetable, or fresh fruit to supplement its daily dietary, the rickety child probably has more frequently its milk soaked diet supplemented by raw meat juice and perhaps fruit juice. Lastly, there is no doubt that on the average the breast-fed child thrives best, the teeth are put to better use and are not bathed in vitiated secretions. The jaws grow normally, the teeth become less crowded, and altogether they have a better chance of being subjected to those natural processes which normally prevent dental caries.

I am, Sirs, yours faithfully,

Wimpole street, W., Jan. 19th, 1937.

J. SIM WALLACE.

SPIROGRAPHS OR NASAL "BREATH PICTURES."

To the Editors of *THE LANCET*.

SIRS,—The practice of testing nasal patency by breathing upon a prepared surface is by no means new, but its usefulness has been somewhat restricted by the want of a satisfactory material. Slate, glass, and polished metals all have their shortcomings, but I have now found that vulcanite with a medium polish gives a very reliable and faithful image. By placing the plate horizontally on the upper lip half an inch from the nostrils and giving one short and steady expiration a well-defined steam impression results, which can

evaporating affords reliable and striking evidence of the actual and relative patency of the nostrils. The image may be temporarily fixed or rendered more conspicuous for demonstration purposes by lightly powdering it with calcined magnesia or fine starch. Small sheets of vulcanite with a suitable surface and of a convenient size are supplied by the Medical Supply Association, 238, Gray's Inn road, London, W.C.

I am, Sirs, yours faithfully,

WYATT WINGRAVE, M.D. Durb.

Central London Throat and Ear Hospital, Jan. 19th, 1937.

THE PAST AND PRESENT INCIDENCE OF INFECTIOUS DISEASE.

To the Editors of *THE LANCET*.

SIRS,—I agree with Dr. H. E. J. Bies in saying we can never expect to see the full benefit resulting from notification and isolation till the whole country has gone through a systematic sanitary inspection. The correction of existing sanitary defects would mean the breaking up of the germ-breeding grounds, and we should thus be dealing with the prime cause of infectious disease. A supply of pure air, pure water, and pure food in any district cannot do otherwise than bring about a general increase of vitality, or, in other words, increased powers of resistance.

I am, Sirs, yours faithfully,

Bexhill-on-Sea, Jan. 21st, 1937.

F. P. ATKINSON.

MILK IN SMALL GENERAL SHOPS.

(FROM A CORRESPONDENT.)

II.

IN my previous article dealing with the manner in which milk is retailed in small general provision shops, I described somewhat briefly a few shops of this kind into which I entered to observe the conditions. As pointed out, in none of these were the conditions favourable for keeping milk in a fit state to serve as a food for young children, and in some of the shops the surroundings were so insanitary as in certain circumstances to render the milk absolutely dangerous as a food for infants. It is not only in the East-End of London that small general provision shops in which milk is retailed are prevalent. They abound in every part of London in which the poor are massed, and undoubtedly are the means of supplying this class with the greater portion of the raw milk which they and their families consume. In the course of my limited tour of inspection I visited several localities in and about London, populated chiefly by the working classes, and found, as in the East-End, that public-houses and small general provision shops were everywhere conspicuous. A description of such a shop in Holborn or in St. Pancras, or even in a suburban district, is in most essential details similar to that of one in the East-End. They differ only in degree. Almost all are small, many by no means clean, and packed with a miscellaneous store of eatables and of articles for domestic use. In perhaps the majority of these establishments the milk is kept either uncovered or partially uncovered, the dipper is exposed to contamination by outside agencies, the door of the shop is frequently kept open in hot weather, always thrown back, permitting the dust and dirt from the street to blow in freely; in short, most precautions calculated to protect the milk from pollution are neglected. Again, the mode in which the milk when bought is conveyed from the shop to the home is, as a rule, characterised by great carelessness. In many instances a child is sent with a jug or other open receptacle in itself often unclean and to which dust and dirt of every description have ready access. Into the question of the extent to which milk is open to contamination in the homes of the poor there is no need to enter here, although undoubtedly this source of pollution is a potent factor in the causation of infantile mortality and one which must be grappled with ere the successful, or partially successful, solution of the problem of how to insure a comparatively pure milk-supply to the young children of the poor is in sight.

¹ The first article was published in *THE LANCET* of Jan. 19th, 1937, p. 193.

and that I published both the detailed and average results. He seems to think that I started, not with the object of ascertaining the truth, but to justify some preconceived opinions and that for this purpose I used an unsuitable stove "probably badly fitted to the flue." What right has Mr. Brearley to say of a fixture he has not seen that it is probably bad, unless, indeed, he implies that all gas fires are badly fitted? In that case my results are still of value.

Mr. Brearley is surprised that I did not record the temperature of the room during the experiments. This did not come within the scope of my investigation, which was directed entirely to the effect produced on the composition of the air by various methods of heating and lighting. He also objects to the size of room I used, forgetting that gas fires are often used in small rooms and, still worse, gas-cooking stoves in still smaller sculleries.

Finally, I object to Mr. Brearley's interpretation of my motives. It is true that he says he would be the last to "impute other than the highest motives" to me, but that is quite neutralised by such statements as the following: "I must say that if you had been endeavouring to get the percentage of carbonic acid in the atmosphere as high as possible you could not have adopted better conditions." Mr. Brearley forgets that I hold no brief either for gas or electric lighting companies, that I should have published the results in any circumstances, whether in favour of gas or coal fires, and I may tell him that as a consequence of the experiments I at once introduced the electric light in my own house. I am sorry to find that the editor of the *Electrical Engineer* by expressing his confidence in the accuracy of my work is sneered at by Mr. Brearley—his "wish is father to the thought."

When Tennyson found his poems adversely reviewed by Christopher North he replied somewhat as follows (I quote from memory):—

You did once review my lays,
You did mingle blame with praise,
When I learned from whom it came
I forgave you all the blame,
I could not forgive the praise,
Crusty Christopher.

So I feel with regard to Mr. Brearley, I cannot forgive his praise when he accompanies it with attacks on my good faith in carrying out the investigation on the air of rooms.

I am, Sirs, yours faithfully,

FRANCIS JONES, M.Sc., F.R.S.E., F.O.S.

Manchester, Jan. 19th, 1907.

SPECIFIC GRAVITY OF URINE.

To the Editors of THE LANCET.

SIRS,—Although many may be aware of the abstract fact that the specific gravity of all liquids varies with the temperature it may not be generally appreciated, as a concrete example, that the specific gravity of urine is very materially influenced by temperature. Probably in the great majority of cases specimens of urine are examined when it has become cooled—i.e., when it is at the temperature of the surrounding air, since these specimens generally reach one in bottles, which are allowed to stand some little time, but I have frequently had occasion to examine urine which has been freshly passed, notably in cases of examination for life insurance, when it is passed at the time of examination.

I have often been struck with the low specific gravity of such freshly passed urine in many cases of young and healthy lives and was disposed to attribute it to the influence of the ingestion of fluid previous to the examination. On one occasion, lately, a specimen showing a specific gravity of 1015, when freshly passed, was left standing over night, with the urinometer *in situ*. On looking at it next day, before emptying the test glass, I was surprised to find the specific gravity to be 1020, thus showing a rise of five points. My attention being thus directed to this discrepancy, I made a series of observations, noting the temperature and specific gravity of the urine when it was freshly passed, and, later, when it had cooled down to the temperature of my surgery. As a result I find that the specific gravity of urine varies inversely with the temperature and that it rises, on an average, one point for every fall of eight degrees of temperature. I find no allusion to this in any text-book of physiology or clinical medicine, and I consider the recognition of the fact is of

importance, and it is a fact which can be easily verified, inasmuch as it should conduce to the prevention of fallacy in estimating the specific gravity of urine. Urine which at 60° shows a specific gravity of 1020, will at 96° show a specific gravity of only 1015.

I am, Sirs, yours faithfully,

ALEX. THEODORE BRAND, M.D., C.M. Aberd.

Driffield, East Yorks., Jan. 19th, 1907.

MEAT DIET AND THE TEETH.

To the Editors of THE LANCET.

SIRS,—In connexion with the correspondence which has appeared in your columns upon this subject over the signatures of Dr. J. Sim Wallace, Dr. D. Chalmers Watson, and Mr. J. H. Gibbs, I should like to state that in the specimens shown at the Pathological Society on Dec. 18th, 1906, a distinct difference was apparent between a tooth germ in the meat-fed and one in the bread-and-milk-fed animal. The section of the head of a meat-fed rat, thrown upon the screen in order to demonstrate the bone changes, showed a developing tooth which was not a normal one. The vascular papilla, the odontoblasts, and the ameloblasts were poorly and irregularly developed. The contrast between this germ and that of a normal rat was well displayed in Dr. Chalmers Watson's excellent preparations. This specimen may, of course, have been from one of the three animals referred to in Mr. Gibbs's letter in which the erupted teeth were of the honeycomb variety. Nevertheless, it would be of interest to know whether the enamel organs and dental papillae were found to be normal in the other meat-fed rats.

At that meeting of the Pathological Society I suggested, as reported in THE LANCET of Dec. 29th, 1906, that Dr. Chalmers Watson was mistaken in ascribing many of the effects observed by him to a meat diet and that they were probably due to a deficiency of lime and other bases, as no bone or bone dust was given with the meat. The perusal of Dr. Chalmers Watson's letter in THE LANCET of Jan. 12th leads me to add that until this point is settled any deductions from the experiments as to the effects of meat-eating habits upon the physique of the present generation seem to me to be premature. Indeed, whether the results produced in rats are due to the want of lime and other bases or whether they are an expression of the failure of a naturally omnivorous animal to rapidly adapt itself to a purely flesh diet it is clear that they cannot be directly applied to the case of civilised man, who never in ordinary circumstances lives upon a diet of meat alone. A mixed diet may contain a very large proportion of meat and yet be not wanting either in carbohydrate or fat or in the necessary inorganic elements present in vegetables, fruits, milk, and in the drinking water of many districts.

I am, Sirs, yours faithfully,

EDMUND I. SPRIGGS.

London, W., Jan. 21st, 1907.

To the Editors of THE LANCET.

SIRS,—In his letter of Jan. 19th Dr. W. G. Creswell asks whether the artificial feeding of infants prejudicially affects the teeth. For several years, during which I have examined about 5000 hospital dental patients annually, I have directed special attention to this subject and have satisfied myself that the artificial feeding of children as generally carried out does exert a harmful effect on the development of the teeth, a view which is in accord with that generally held by dental surgeons. This harmful effect is shown in structural defects of the tissues and in irregularity of the teeth, conditions which favour the lodgment of food and subsequent caries.—I am, Sirs, yours faithfully,

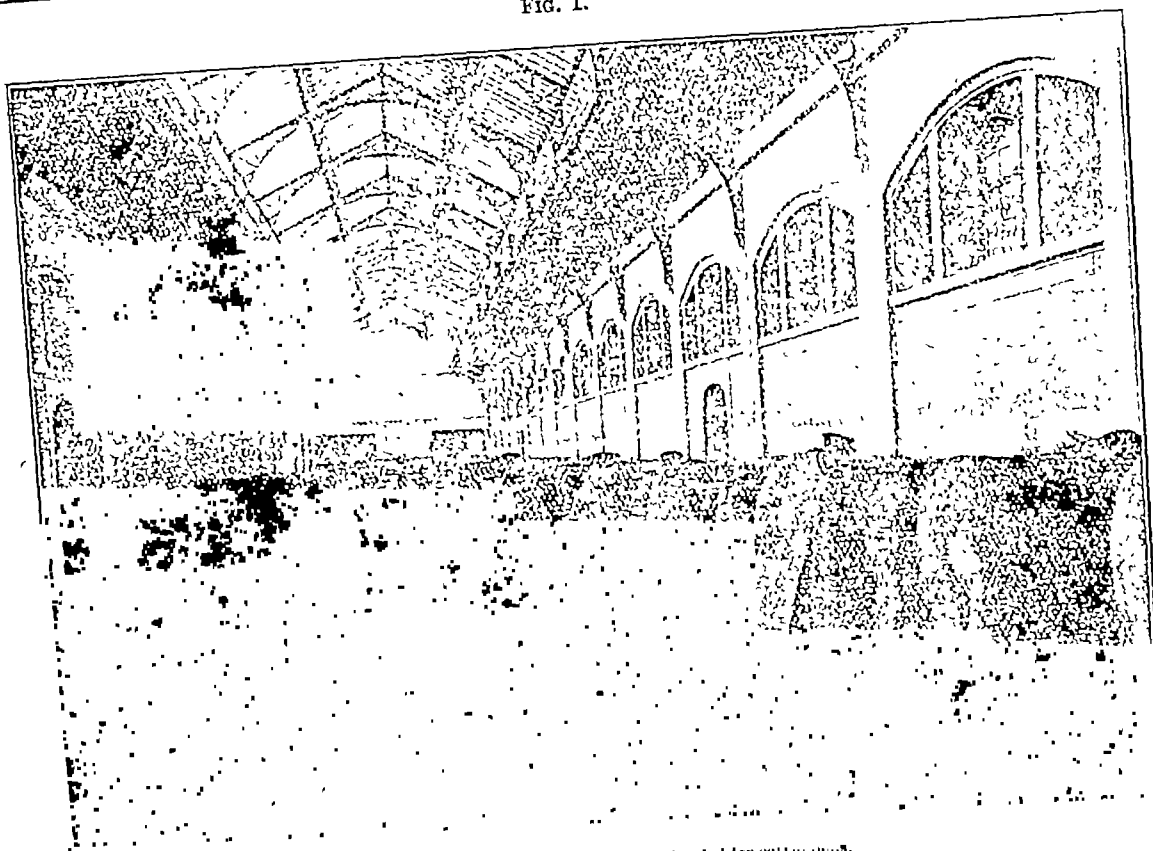
J. H. GIBBS.

Edinburgh, Jan. 21st, 1907.

To the Editors of THE LANCET.

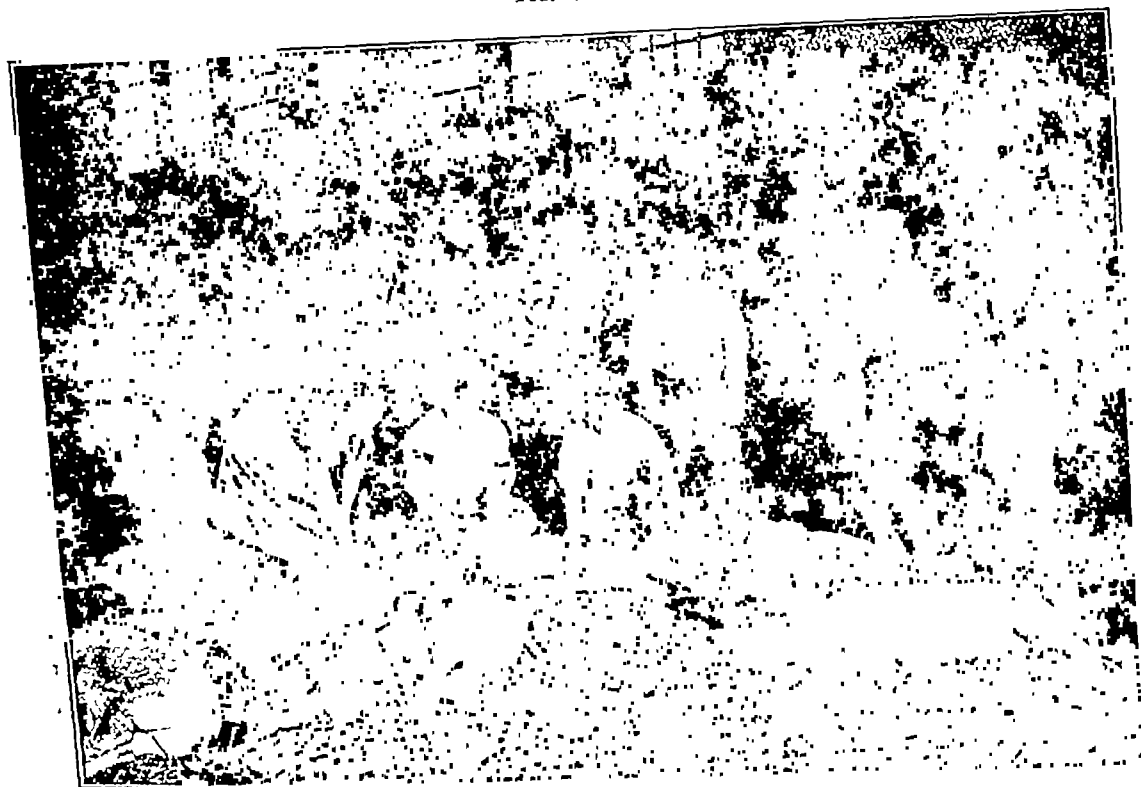
SIRS,—In his letter to THE LANCET of Jan. 19th Dr. W. G. Creswell asks two important questions which have not been answered by all authorities in the same way. Nevertheless the evidence is sufficiently strong, I think, to justify us in saying that the artificial feeding of infants *per se* does not prejudicially affect the development or structure of the teeth. The teeth of children, whether breast fed or otherwise, are almost invariably perfectly good to all external appearances when they cut the gums. Only about 6 per cent. have somewhat defective enamel; but this defective formation of the temporary teeth cannot be

FIG. 1.



Roofed court uniting two pavilions intended for cattle pens.

FIG. 2.



Scene at the Vaugirard Abattoir; the soot-black walls should be noted.

So far, however, as the milk-supply of the London poor is concerned, regarded solely from the point of view of the small general provision shops' supply, my observations, cursory though they were, have taught me these facts, which, of course, have been made the subject of comment before: That the working classes obtain the greater part of, if not almost all of, the raw milk which they and their families consume at small general provision shops; that in most of these shops the sanitary conditions are unfavourable, milk being kept in such a state as to render it an injurious food for infants; and that in a large number of cases precautions to preserve the milk from pollution are neglected both by the small shopkeepers and the customers. The menace to infant life involved by impure milk is too well known to require emphasis. During the year 1904 about 19,000 infants under one year of age died in London. Of this number no less than 2347 died from epidemic diarrhoea, the largest number who died from any one cause. It is needless to state that the occurrence of epidemic diarrhoea amongst infants is attributed to improper nourishment, chiefly to impure milk. Vaughan goes so far as to assert that nearly all cases of summer diarrhoea among infants are due to the presence of putrefactive or other bacteria of decomposition in the milk. I am only recapitulating the fact that milk which has undergone certain fermentative changes, or which has been polluted by dirt of any description or by flies, is especially dangerous as a food for infants, a matter now of almost general knowledge, in order to press home the point that the manner in which the milk-supply of London is controlled is susceptible of much improvement and that the milk provided for the infants of the poorer classes should be of the best possible quality.

The small general provision shops of London play a very important part in the scheme of providing its poor inhabitants with milk, and therefore if these establishments are to be allowed to continue to supply milk they should at least be managed in such a way that all unnecessary contamination may be avoided. When making my observations I entered a few of the regular milk shops both in the East-End of London and in other metropolitan districts inhabited by poor people. I found that in these shops adequate precautions to preserve the milk from contamination were well observed. Why then do not the poor avail themselves of the opportunities thus afforded to obtain milk which is guarded from the pollution to which it is subjected in the small shops? The reasons probably are that the small shops are more convenient for them, that they can buy the milk they require when they buy their other provisions, and, lastly, that they can obtain credit at the shops at which they are accustomed to deal. Ignorance, too, in regard to the dangers of contaminated milk, on the part of the London mother of the lower class, is a weighty feature of the situation and one which has a great bearing on the sickness and mortality of infants.

The London County Council makes regulations dealing with the cleanliness of milk stores, milk shops, and milk vessels and the precautions against infection to be taken by the purveyors of milk and by persons selling milk by retail. These regulations are enforced by the metropolitan borough councils which are also required to register all persons carrying on the trades of cowkeepers, dairymen, or purveyors of milk. In Shoreditch, at the end of 1904 there were on the register 294 shops the proprietors of which were licensed to sell milk. During 1904 3199 inspections were made. In Holborn during the same period there were 171 such shops, and 1160 inspections were made. In Shoreditch the inspections seem to have been numerous, but I can only state that the small provision shops selling milk which I visited in that district certainly did not observe precautions necessary to preserve the milk from pollution, nor, indeed, in any locality to which I went did I find these shops in such a condition as to conform in any respect to one's ideas of what a milk shop should be. I may have been unfortunate in the selection of shops but I am of the opinion that a deplorable laxness is the rule rather than the exception in the management of small general provision shops in London in which milk is sold. The sale of milk in provision shops is but one phase of the milk question. It is, nevertheless, an important phase and is well worth investigation and discussion. The desideratum in regard to milk is that the poor should be able to procure it at the same time good and cheap. It is argued, and doubtless with truth, that if all the precautions needful to insure a pure milk-supply were enforced the cost of the product would be greatly

increased. If, for example, as in New York and in some other American cities, certified milk were supplied on request the various methods through which such milk has to go in order to reach the high standard required would render it necessary to increase the price. Obviously a milk of this description would be unattainable by the poor even if they were educated up to the point of appreciating its value. In the meantime it would be a decided step in the right direction if the proprietors of small provision shops who retail milk were compelled to observe certain well-defined precautions, such as keeping all the milk vessels scrupulously clean and having the milk in a vessel which should be always covered and provided with an exit tap so as to prevent dirt and flies to some extent from contaminating the milk.

THE PARIS ABATTOIR AT LA VILLETTE.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

(Concluded from p. 126.)

THERE are at La Villette 11 pavilions such as have been described and illustrated where sheep and horned cattle are slaughtered. Other pavilions very similar in structure and united by a central glass-roofed court are used as cattle-pens where the animals which have been brought from the neighbouring cattle market wait till it is their turn to be slaughtered. These pavilions, however, are so utterly unsuited for the purpose, so deficient in light and ventilation, that the same thing happens there as occurs in regard to the slaughtering. The cattle, especially during the hot summer weather, are kept in the glass-roofed yards instead of in the pavilions on each side of the yards. (See Fig. 1.) Here they have plenty of light and air, but there are no mangers, no water troughs—in fact, no stable appurtenances. Also it is much easier for the veterinary surgeons to examine them in the yards than in the neighbouring dark stables. Thus, just as the butchers like to work in the open court instead of in their small private compartments, so also are the cattle kept in the courts between the masonry pavilions rather than in the pavilions themselves. This is a very practical demonstration of the unsuitability of the latter. I did, however, penetrate some of these buildings and found them very dark and repugnant. In one of them there were a number of sheep separated by wooden partitions well calculated to retain dirt and disease germs. Also, and apart from these pavilions, I saw some small brick structures used for keeping sheep. In these latter there were numerous rafters and only very small windows which supplied but little air or light.

Further on there are extensive wooden stables for sheep which, though built 12 years ago, were called provisional. Here the central passage is so narrow that the manure has to be thrown out of the windows. A cart or even a hand barrow could not be introduced inside the building. But it is especially deplorable that no idea seems to exist as to what ought to be done. Thus the principle that wood, being porous, is an unsuitable material to employ has not dawned upon the workers and butchers of La Villette. On the contrary, if there is a need of some sort of railing or partition, an attendant is almost sure to explain how with a few planks or a pole this can be provided. Therefore the sheep and other animals are only separated from each other by wooden framework which becomes black and greasy and caked with dirt, thus supplying a culture medium for microbes. This may help to account for the frequent cases of foot-and-mouth disease which occur at La Villette. The large wooden stables were built at a time when a great quantity of German sheep were imported into Paris. They cost, it appears, no less than £16 000.

This wooden structure is not of much use to-day, as there are no longer many sheep imported from Germany. It is situated close to the Ourcq canal and a rising bridge enabled the sheep to go from the cattle market into the slaughter-house without leaving the railway tracks that had brought them from Germany. All this is very badly organised, there are no proper platforms for the landing of the sheep, and it is no use sending animals, already purchased for killing, to the cattle market where they come in contact with, and may infect, other cattle. Worse, if anything, than the improper structure of many of the buildings is the fact that the water-supply at La Villette is insufficient. The water main is only 30 centimetres in diameter and there are moments when this does not suffice, so that the taps

the land was originally acquired it was intended to erect upon it houses for working men at a rental of 5s. per week or less. In the event, however, it proved impossible to devise a scheme whereby such houses could be built and maintained except at the expense of the rates, and the council wisely refused to have anything to do with the creation of municipal buildings, having in view the want of success which had attended similar ventures in other places. Moreover, it is questionable if at the present time houses of the class originally proposed would really be useful if erected on the Bordesley Green site. By deciding to hand over the land to the Ivy Benefit Society under certain terms the council has sanctioned the attempt to develop on a site of about 28 acres a garden city within the city boundaries. It is true that the houses to be erected will somewhat exceed 5s. a week in rental, but it is also obvious that the rents cannot be high, for 50 per cent. of the members of the society which is to develop the site earn wages of 30s. a week or less. If the calculations have been well made the experiment will eventually be a profitable one for the city and possibly may do something to aid in the diminution of the already too heavy rates. From the public health point of view the experiment is of the utmost importance and if it is successful it may prove to be the beginning of a satisfactory solution of numerous housing difficulties which now beset the guardians of great cities.

A New Children's Hospital.

A committee has been formed to draw up a scheme for the building and endowment of a new children's hospital for Birmingham.

A New Poor-house Infirmary for Aston.

The overcrowding of the workhouse at Aston and the refusal of the Local Government Board to allow additions to be made to it have necessitated the utilisation of the present infirmary for the accommodation of the ordinary inmates and consequently the provision of a new infirmary. It is proposed to acquire some additional land adjoining the workhouse ground and to erect upon it a new infirmary capable of receiving 900 patients. On the whole, the scheme seems the most economical one which could be adopted, for as the new infirmary will be in the immediate neighbourhood of the workhouse the present nurses' home will be still available and the management during the transition period will be rendered comparatively easy. Before it can be carried out, however, the Local Government Board must be consulted and an application is to be made for its consent to the scheme and the necessary expenditure.

Wolverhampton Water-Supply.

The available supply of water at Wolverhampton is at present about 4,000,000 gallons per day and the governing officials think it necessary to increase the supply in view of increasing necessities. It is proposed to sink a series of boreholes to a depth of 1000 feet in an area which has been explored, and to meet the expenses already incurred and those which erection of the required buildings, pumping stations, and reservoirs will entail it will be necessary to borrow £90,000. It is estimated that for this sum the water-supply will be increased by a million and a half gallons a day.

Jan. 22nd.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The City and the University of Liverpool.

THE accounts of the University for the year ending Sept. 30th, 1906, were passed at the annual meeting of the court of governors, and in themselves afford strong proof of the growth and strength of the University. From the balance-sheet it appeared that the total assets of the University were something over £735,000, represented very largely by the value of sites and buildings and investment of endowed chairs and laboratories. The receipts for the year were over £61,000, made up chiefly of grants from Government and public bodies, amounting altogether to £26,000, interest on investments £9500, and fees from students £15,500. On the expenditure side of the account the chief items were for salaries of professors, lecturers, and teachers £21,000, and general expenses (including salaries of office staff) £12,000 in each case ignoring odd figures. The balance

of income over expenditure was very small, but it should be pointed out that for the first time this year a substantial sum has been set apart for repairs and renewals of buildings, a very wise step which should lead to the gradual collection of an adequate reserve fund for those necessary expenses which will increase in the future as the buildings grow older. On the whole, the accounts may be considered extremely satisfactory and afford evidence of careful and business-like administration.

The Hospital Sunday Fund Collection.

Collections in aid of the medical charities of Liverpool were taken on Jan. 13th in the various places of worship throughout the city and suburbs. The largest sum collected was £590 at the Ullet-road Unitarian church. Sefton Park Presbyterian church came next with £559. The treasurer of the fund has just published the first list of collections, and it will be satisfactory to note that there is an increase of £627 over that of last year.

Liverpool Health Committee: Sterilised Milk and the Infantile Death rate.

For the past week the birth-rate was 41.2 per 1000 of the estimated population of 746,144 and the death-rate 22.7 per 1000, as compared with 21 per 1000 a year ago. The infectious cases in hospital comprised: small-pox, three; scarlet fever, 418; typhus fever, ten; typhoid fever, 36; measles, 24; diphtheria, 48; in isolation, 67; total, 606. Reference was made to the splendid results which had followed the use of sterilised milk in the city. It was stated that the death-rate of infants supplied with the milk by the corporation was something like 84 per 1000, whereas the rate of mortality amongst infants fed with ordinary milk was 158 per 1000.

The Duchess of Albany and the Liverpool School of Tropical Medicine.

Her Royal Highness the Duchess of Albany paid a private visit to the School of Tropical Medicine prior to the opening of the Children's Infirmary last week. She was accompanied by the Earl of Derby and her suite and was received at the University buildings by Vice-Chancellor Dale and other gentlemen. Upwards of an hour was spent in the laboratories of the school. Professor Ronald Ross acted as guide and expositor to Her Royal Highness, and Dr. A. Breinl and Dr. J. L. Todd assisted in exhibiting under the microscope the varied specimens of malarial which germinate and distribute the diseases of the tropics. The cancer research and experimental sections were also visited. This was the fourth occasion in which the School of Tropical Medicine has entertained royalty during the six years of its existence, other Royal personages who have honoured it by their presence being the Princess of Wales, Princess Christian, and Princess Victoria. Her Royal Highness's autograph was secured for the album of the Guild of University Undergraduates.

The Liverpool Royal Infirmary.

At a special meeting of the election committee held on Jan. 15th Dr. John Hay, honorary physician to the Stanley and Consumption Hospitals, was appointed assistant physician in the room of Dr. E. E. Glynn, who resigned that appointment upon his election to the post of deputy professor of pathology at the University of Liverpool, created by the illness of Professor Sir Robert Boyce. Dr. Hay formerly held the office of medical tutor at the Royal Infirmary.

The Founder of the Children's Infirmary.

It has been suggested that the memory of the founder of the Children's Infirmary (the late Dr. Alfred Stephens) should be perpetuated by placing an inscription or other suitable memorial in the new building.

Jan. 22nd.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

Statistics of the General Infirmary.

A TABULAR statement of the work done during the year ending Dec. 31st, 1906, shows an increase in most of the departments of the institution. The number of patients treated in the wards amounted to 7052, an increase of 287 as compared with the year 1905. The average number of in-patients was 365 and the fact that this number exceeds that for 1905 by only four is some indication of the fact that the pressure on the beds is considerable and that the infirmary is being worked

occasionally run dry. To lessen the frequency of such a contingency a small reservoir has been constructed and is placed on the top of a turret-like building. It is inside this building in immediate proximity to the water that the repugnant skinning of foetal lambs and calves takes place. One forgotten foetus was lying rotting outside the door at the moment of my visit. Inside I found a delicate-looking, fair young girl, perhaps 16 or 17 years old, wearing wooden clogs, dressed almost like a boy, and busy tearing the skins off a number of lambs that had been killed *in utero* by the slaughter of their mothers or that were stillborn. It seems to me that young women should not be employed on such work. This horrible proximity of girlhood with pre-natal death and destruction is most revolting. And just above was the reservoir of water which also should be kept pure.

It may be old-fashioned and unprogressive on my part, but I must confess that I was shocked at the work which women, and some quite young women, were allowed to do. One of the most repugnant sights, both on the south as well as the north side of the Seine, is the pig-bleeding room. At the Vaugirard slaughter-house, as well as at La Villette, women are employed to kill and to bleed the pigs. These animals are not thrown into boiling water, so that the bristles may be loosened by the scalding and then scraped off. As soon as they are killed and have bled sufficiently straw is piled around them and ignited. Thus the bristles are burnt off. This singeing process is often employed for bacon and not for pork. But it occasions a great deal of smoke and consequently the inside of the building where the pigs are killed is as black as a chimney, being covered throughout with a thick layer of soot. (See Fig. 2). This imparts a still more forbidding appearance to the whole place. The smell of burnt hair and flesh, the women collecting buckets full of blood, their blood bespattered clothes, their hands soaked and reeking with blood, the ear-piercing shrieks of the pigs, the steam from the hot blood, the sini-ter clatter of wooden clogs on the hard cemented floor, the callous if inevitable indifference to this daily massacre, all goes to make up a picture which is the very opposite of that which man is wont to associate with a reverent appreciation of the virtues of woman.

In the preparation of tripe, sheep and pigs' feet, &c., a large number of women are employed. At La Villette this is organised by private enterprise—that is to say, a syndicate of dealers in these by-products. They merely hire from the town of Paris and within the precincts of the abattoir buildings occupying 1200 square metres of land. In this restricted space they treat the edible by-products, tripe, calves' heads, &c., of some 2,000,000 animals per annum. This would not be possible but for the employment of very ingenious labour- and space-saving machinery. Nevertheless, there is much overcrowding which should not be allowed. Also a much stricter sanitary supervision is necessary. In the centre of a little hut where calves' and bullocks' feet were being prepared for culinary purposes there was an untrapped drain that gave forth a vile odour. This was a dark coachhouse-like structure in which nothing intended for human food should be permitted to enter. In another place I found that calves' heads were thrown on the floor; the dirt and grease aiding, they glided along and this was easier than carrying them from place to place. The skinning and then the packing of sheep's feet in bundles, like bundles of wood, were done in part by machinery and in part by the hand labour of women, who sat closely huddled together endeavouring to keep pace with the machinery. There was no systematic ventilation. The places were badly paved and in many instances the foul water could percolate into the subsoil. Above any amount of rafters preserved the dust and dirt of ages, occasionally allowing small particles thereof to fall on the food that accumulates below. Here was another excellent illustration of the fact so dramatically demonstrated at Chicago that, unless controlled by law, private enterprise makes no difference between what is to be eaten and other articles of industrial production. It is always a question of the economy of time, of space, and of labour—in other words, of the cheapness of production, without a single thought as to the safeguarding of the health of the workers and of the consumers.

Fortunately it is now fully recognised that the abattoir at La Villette no longer corresponds with modern requirements. Its days are numbered. Paris cannot afford to remain much longer behind Germany and Switzerland in regard to the sanitation of its meat-supply. The fact for instance, that men have to carry heavy portions of meat or carcasses on their backs is worthy only of the Middle Ages. At La

Villette there is but one really modern department. That is a large hall where the carcasses of the hogs are suspended and kept till the butchers fetch them away. Here there are the "omnibus" overhead rails so that the suspended carcasses are affixed to small wheels fitting to these rails and can be easily pushed along. Of course, these overhead rails are more needed for heavy horned cattle than for pigs, and should start from the slaughtering place. A carcass should be lifted up by pulleys and never carried. At La Villette, however, with the exception of the hogs, all are borne on the backs of the butchers, who, in such a dirty place, cannot possibly keep themselves clean. In the absence of mechanical appliances five men are employed to kill a bullock where in a slaughter-house with modern fittings three would suffice.

There should be no insurmountable financial difficulty in building new and model slaughter-houses for Paris. The abattoir of La Villette cost £1,200,000, which sum was repaid by yearly instalments, and the debt was liquidated long ago—namely, in the year 1887. At a congress of butchers held in Paris in 1894, the average cost and profit for the previous 13 years were given. Though there were somewhat ancient figures, I was led to infer that there had been no very material change since. If anything the profit must have increased, for there has been an increase in the number of animals slaughtered. The receipts were estimated as follows: 160,228,384 kilogrammes of meat at 2 per cent. on its sale price. This yielded an average annual income of 3,204,567 francs (£128,182). The rent paid by the dealers in tripe and other by products, and for the storage of meat, together with various small receipts, brought the total income up to 3,418,514 francs (£136,740). The working expenses were set down at an average of 699,283 francs, or £27,971, so that there remained a net annual profit of 2,719,232 francs, or £108,769. This is a sufficient income to guarantee a loan for building another and a better abattoir.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

THE spring term, which commenced last week, has started very favourably and the number of students at work is greater than in any previous term. By far the majority are studying applied sciences, but the numbers in the medical, arts, and commerce faculties are very satisfactory. In the medical faculty the work in the spring term is particularly heavy and no special lectures are to be delivered, but in the other faculties much additional work is to be done. The Social Study lectures have already recommenced and are to include Coöperation, Local Administration, and Public Health and Housing, which will be dealt with respectively by Professor A. Hley, Professor Masterman, and Dr. J. Robertson. On the 22nd of the month Professor Churton Collins recommenced his interpretative recitals, taking Shelley as his first subject. During the course of the term Mr. L. Doncaster will deliver a course of lectures on the Principles of Heredity and Variation in Animals and Plants, and on Wednesday evenings Mr. W. E. Collinge will lecture on Animal Pests of the Garden. There is therefore a very extensive series of lectures provided, which are open to all students of the University, either free or at a very small fee, and thus an excellent opportunity is afforded for them to step outside their own particular department and effectually to broaden their general outlook. In the Faculty of Commerce, which is pushing its way forward with no uncertain steps under Professor Ashley's able and energetic control, a new departure has been taken by the establishment of an advisory board of business men to coöperate with the professors in the Faculty. The step is a tentative one and is made with the object of gathering suggestions with regard to the training of students for business purposes from those who have practical experience of business demands, whilst at the same time it is hoped that the board will be able to bring the Faculty and its graduates to the notice of the business world.

The Housing Problem.

After a long discussion the city council decided to adopt the scheme of the housing committee for the disposal of the Bordesley Green site, to which attention was drawn in THE LANCET of Jan. 19th, p. 200. When

studies, and in the appointment of professorships, the adoption of which will modernise Trinity College and will give an immense stimulus to its energy and a vast extension to its intellectual outlook. 2. The commissioners gave their views as to how the vexed question of university education in Ireland is to be settled. Five different schemes to overcome the "religious difficulty" are discussed, and in the end the problem in Ireland was left as unsettled as is that of the English primary education question. The commissioners were unanimously of opinion that it was impossible to recommend any changes in the constitution of Trinity College which would make it acceptable to the Roman Catholic bishops, as the latter had assured them that they would not accept any scheme of mixed education in Trinity College and had disclaimed any desire to have changes made in the constitution of the College for their sakes. The *Times* in a leading article of Jan. 22nd remarks that the commission has left the main problem submitted very much as it was before. The problem is, of course, how to overcome the religious difficulty which obstructs the development of university education in Ireland. The commissioners, however, have with one dissentient recommended the establishment of a new college acceptable to Roman Catholics in Dublin. As regards the medical school, they recommend that effect should be given to the agreement embodied in the joint statement of the board of Trinity College and the President and Fellows of the Royal College of Physicians as submitted to the commission.

The Belfast Municipal Elections.

The remarkable result of the municipal elections held in Belfast on Jan. 15th, ending as they did in the return of all the candidates nominated by the Citizens' Association and pledged to economy, efficiency, and reform in civic administration, is an event unparalleled in our municipal history. Never before did such a large proportion of electors vote and the result has afforded the greatest satisfaction to all those who for the past year have pressed for a reform in the public health administration of the city. The uprising of the citizens was due in great measure to the controversy over the appointment of the medical officer of health. The action of the old corporation in this matter afforded the public an object-lesson in municipal tactics and the lesson has evidently been taken to heart. The Citizens' Association and the Ulster Medical Society have educated Belfast and have enabled the public to put on record their complete condemnation of a policy which, instead of grappling with the ominous condition of the health of the city, sought to minimise facts and to explain away statistics, while stigmatising the men who refused to shut their eyes and lips as slanderers. At the last meeting of the public health committee the following motion was carried:—

That a return be prepared and submitted by the medical superintendent officer of health of houses detrimental to the public health of the city or that are injurious to the health of the occupants, and also for maps showing the property already dealt with.

The public health committee is now awakened but the confidence of the citizens of Belfast has been shattered.

Belfast District Rural Council.

At a meeting of the Belfast district rural council held on Jan. 18th Mr. S. B. Coates submitted a report regarding different districts. 1. In the Whiteabbey district there has been an outbreak of typhoid fever caused by infected milk supplied by a dairy in the Larne union. 2. The Blackstaff river, which runs through the centre of Belfast, is being polluted by sewage contamination from several sources and its condition is becoming worse. The council decided to communicate with those causing this nuisance of the Blackstaff stream and also to adopt the Infectious Diseases (Notification) Act, 1877, and the Infectious Diseases (Prevention) Act, 1890, to come into operation on March 1st.

Epidemic Cerebro-spinal Meningitis in Belfast.

Those who wish to study fevers should come to Belfast, for now, in addition to almost every other type, we have an outbreak of that comparatively rare disease, cerebro-spinal meningitis. Five cases out of one family were sent to Pardysburn fever hospital where two have died. Unfortunately, one of the senior medical students of the Belfast Medical School sickened with symptoms of the disease on Jan. 13th and died on the 15th. Lumbar puncture revealed the presence of the specific diplococcus and in the fatal cases the organism was cultivated from the affected organs.

The Stoneyford Water-supply of Belfast.

At the quarterly meeting of the Lisburn rural council held on Jan. 19th Dr. R. Alexander of Knocknadona dispensary district and Dr. D. P. Gausson of Dunmurry reported very serious pollution of the Stoneyford catchment area (one of the sources of the Belfast water-supply) through surface water, liquid manure, &c., from farms in the catchment area getting into streams leading to the reservoir. It was resolved that the reports should be entered on the minutes and that copies should be sent to the authorities concerned in Belfast. There is no doubt that, if the water-supply at Stoneyford is to be above suspicion, the Belfast water commissioners must buy up all the farms in this catchment district.

Death of Mr. James C. McCleery, L.R.C.S. Irel.

Death removed on Jan. 19th, at his residence, Marsden Villa, Antrim-road, Belfast, the oldest member of the medical profession in Belfast, Mr. J. C. McCleery, at the advanced age of 83 years. Many years ago when he was a contemporary of the late Dr. James Smith, Dr. T. K. Wheeler, and Professor Cuning, Mr. McCleery, who lived then in the centre of the city of Belfast, had a very large and busy practice; about 20 years ago he retired from active work, but to the end he took the greatest interest in general affairs and preserved the genial spirit of his boyhood and youth. He was always pleasant and courteous, and was extremely popular with all who came in contact with him. His medical contemporaries had the highest opinion of his professional skill and ability. The utmost sympathy is felt with his widow and children.

Cork District Lunatic Asylum.

Dr. James J. Fitzgerald has been elected medical superintendent of the Cork District Asylum. The committee of management met on Jan. 14th, when Dr. Fitzgerald, formerly of Carlow, was unanimously elected. It will be remembered that Dr. J. P. Cashman was chosen some months ago by the casting vote of the chairman and that the Lord Lieutenant sent a letter stating that the appointment was illegal and that another election should take place. The result of the recent election is as above. The appointment is considered an important one in Cork and the election caused much interest.

Jan. 22nd.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Public Health.

THE excessive delay of the Direzione Generale di Statistica in publishing its reports prevents me from reviewing the public health, as a whole, for an earlier year than 1903. In that year the mean death-rate for the Italian kingdom was 22·25 per 1000. Taking the provinces first, the least healthy were those of Foggia and Bari, with a mortality of 30·7 for the former and 29·3 for the latter, while the most healthy were those of Treviso and Pisa, with a mean of 18 per 1000. Of the 69 capital cities of the provinces the maximum death-rate was reached at Catanzaro (Calabria), with a mortality of 32·4 per 1000; the minimum being that of Trapani (Sicily), with only 14·2. Of the great centres of population the healthiest were Turin, Rome, Genoa, Milan, and Palermo. While among the provinces those of the south showed the greatest mortality, among the cities there was no distinction between north and south as to salubrity—Bergamo, for example, in the Alta Italia, being little better than Catanzaro—a fact which shows how much leeway, in a sanitary sense, Italy has yet to make up. There is this grain of comfort, however, to be gathered from the report for 1903—namely, that among the healthiest provinces were Trapani, Grosseto, Rome, Cosenza, and Sassari, which but a few years ago were scourged with malaria, an endemic malady which all through Italy is gradually lessening in area and intensity. For 1903, as I have said, the mortality was 22·25 per 1000. In the next year it fell to 20·95. Unfortunately that advantage was not maintained and in 1905 it rose again to 21·73, although in that year small-pox had been virtually stamped out, malaria (thanks to the steadily progressive consumption of State-supplied quinine) had been much diminished, and other infective or contagious diseases had been in full defervescence. Italy, indeed, is a long way off the sanitary ideal contemplated by Agostino Bertani in his "Codice Igienico," and is

well up to its possible limits. The number of new patients admitted was 6760. Of these 1297 were medical, 3286 were surgical, exclusive of 804 accident cases, 722 and 301 were respectively eye cases and ear cases, and 350 were admitted into the gynaecological wards. The number of deaths was 489 and of these 148 occurred within 48 hours after admission. Calculating the death-rate on the remaining 341 it is found to be 4·8 per cent., a decrease of 0·21 per cent. In the out-patient department the number of new cases was 39,666. Of these 11,160 were medical, 4925 were surgical, 482 were gynaecological, 5102 were ophthalmic, and 2074 were aural. Casualties amounted to the large number of 11,254, an increase of 796 as compared with the previous year. Dental cases reached a total of 3558, skin cases and throat cases were respectively 147 and 873, while to the out-patient Finsen-lamp department and to the x-ray department there were admitted 27 and 63 new cases respectively. To the Ida and Robert Arthington Hospitals there were sent from the wards of the parent institution no less than 1247 cases, 341 in excess of the former year, and to other convalescent homes 249 patients were drafted. There is no doubt that the two special semi-convalescent homes above referred to, which are under the management of the infirmary board, are filling a very useful part in the work of the institution, providing accommodation as they do for patients who are not fit for being sent home or to the ordinary convalescent homes and who require skilled dressing or treatment. These two hospitals are under the care of the junior member of the honorary staff who, in so far as his infirmary duties are concerned, devotes all his time to the work. The quantity of stimulants—wine and spirits—consumed in the wards amounts this year to 109 gallons as compared with 85 gallons for 1905. The smaller figure works out to about one-tenth of an ounce per patient per day, so that the infirmary may fairly be regarded as an abstemious institution.

Jan. 22nd

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Scottish Students' Conference in Edinburgh.

THE annual conference between student representatives of the four Scottish universities was held in Edinburgh on Jan. 14th and 15th. Each university was represented by four members. On the second day of the conference various medical topics were discussed and voted upon. A motion to the effect that a lectureship on the History of Medicine should be instituted received an equal number of votes. The conference was also equally divided on a motion to the effect that class examinations should be taken in consideration in determining the results of degree examinations. The question of autonomy for the Scottish universities was also discussed but not voted upon; the opinion was expressed that if the universities obtained autonomy the student representative councils should be represented on the governing bodies. Principal Sir William Turner addressed the representatives on the training for public life. He pointed out that student life was a preparation for active life in the future; it was more than a mere living for the present. As educated men it was expected that they would hereafter take a part in the public life of the district of the country in which they lived and also in the public life of the State. Men of education, if they wanted to retain their proper position amongst their neighbours, must take an interest in public affairs. The interest consisted in being able to discuss the various questions affecting the life of the locality or of the State which might arise from time to time and of taking a broad view of them, not a mere narrow local view. He thought that such conferences gave a preparatory training for taking part in the discussion of public affairs.

Annual Report of the Chalmers' Hospital, Edinburgh.

During the year with which this report deals it is stated that the number of patients treated was 613, of whom 395 were in the public or free wards and 218 in the private or paying wards. The surgical cases numbered 348 and the medical 265. The daily average number of patients was 38 and 322 operations were performed. There was also a considerable number of out-patients treated. The ordinary expenditure amounted to £3435.

Death of Dr. Alexander Peddie.

On Jan. 19th Dr. Alexander Peddie died in Edinburgh at the age of 97 years. He graduated in 1835, was the oldest practitioner in Scotland, and was widely known as the friend of Dr. John Brown.¹

Bacteriological Diagnosis in Glasgow.

The health committee of Glasgow Corporation has issued a report on this subject which shows that during the year 1906 there were submitted for bacteriological diagnosis at the public health laboratory 1357 swabs from the throats of diphtheria patients, 663 tubes of blood from enteric fever patients, and the sputum of 1212 patients thought to be possibly suffering from pulmonary tuberculosis. According to the Glasgow Directory, there were 414 medical men in general practice within the city and 79·7 per cent. of these availed themselves of the laboratory for bacteriological diagnosis in these diseases. The total number of specimens submitted for examination during 1906 shows an increase of 457 over the previous year. The increase has been contributed from suspected cases of diphtheria and tuberculosis. During the past three years there has been a steady fall in the number of specimens from suspected cases of enteric fever and this is associated with a progressive diminution in the notification of this disease. Since the establishment of the laboratory it has frequently been found in connexion with outbreaks of diphtheria in households that bacteriological examination revealed the presence of the diphtheria bacillus in a percentage of those members of households who were apparently in good health. In March last this procedure was, as far as possible, adopted on systematic lines, and during the ten months 322 such "contacts" have been examined, with the result that the diphtheria bacillus was demonstrated in 34, representing 10·5 per cent. During the year 1032 rats—542 from the city and 490 from shipboard—were taken to the laboratory and examined for plague. No trace of this disease, however, was found in any of them.

Compliment to Professor J. G. McKendrick.

The business committee of Glasgow University General Council, of which Professor McKendrick was for some time convener, has resolved to initiate a movement to recognise in some way Professor McKendrick's long and distinguished connexion with the University and the city. It is intended that the movement shall be open to all who desire to testify their appreciation of Professor McKendrick and of his public and private services. A meeting will shortly be held to make arrangements, and meantime communications on the subject may be addressed to Mr. Archibald Craig, clerk of the general council.

New Joint Hospital at Duntocher.

The new joint hospital near Hardgate, Duntocher, was opened last week. The hospital occupies an ideal situation, the ground extending to fully three acres, upon which are six buildings in all. The administrative block, which has excellent accommodation, is in the centre of the site and to the east and west are the scarlet fever and the enteric fever pavilions respectively, the former having accommodation for 13 beds and the latter for nine beds. The hospital, which is built of red sandstone, will cost about £11,000. The population of the district to supply the hospital is about 20,000, but a little more accommodation has been provided than is likely to be required in the meantime.

Jan. 22nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Royal Commission on the University of Dublin and Trinity College.

THE report of the members of the Royal Commission on the University of Dublin and Trinity College appeared on Jan. 22nd. The document divides itself into two sections. 1. The commissioners recommend a series of reforms in the internal administration of Trinity College, as, for instance, the reconstruction of the governing board, which will give all the Fellows (junior as well as senior) and professors a voice in its management and a radical reform in the system of election to fellowships, as well as a vital change in the constitution of the College council, in the arrangement of

¹ We hope to publish an obituary notice in an early issue.—ED. L.

recorded only 16 times. The patient, who was 50 years of age, had been suffering from enlargement of the thyroid body, and seven months previously to the operation the gland became acutely inflamed, in consequence, as was supposed, of a slight injury. A sinus leading into the left half of the thyroid body formed after some time, and, as it was very unpleasant and inconvenient to the patient and formed a cause of frequent recurrences of the inflammation, it was decided to operate. The operation proved a very difficult one on account of the existence of very extensive adhesions between the thyroid body and the neighbouring tissues, including the trachea, the submaxillary gland, and the large vessels. As regards the cause of the inflammation, the injury referred to could not with certainty be held responsible for it. A much more plausible hypothesis was the immigration of micro-organisms from the trachea by means of the lymphatics. The etiology of thyroiditis is not definitely known and the pathological anatomy is also not very clear. The 16 cases observed hitherto have not been examined methodically. In the present case there was found granulation tissue corresponding to the parenchymatous investment of the cystic tumour. In the inflammatory tissue there were many giant cells, containing colloid substance and needles of cholesterol. Similar findings have been reported in cases of acute thyroiditis without suppuration and in a case of Basedow's disease.

Jubilee of Professor Winternitz.

Professor Winternitz, who has just completed his seventieth year, will shortly celebrate his golden jubilee as a member of the medical profession. When he began medical study students of 16 or 17 years of age were admitted to the anatomical lectures and after a curriculum of three years could obtain their diploma. Professor Winternitz was the first among the Austrian medical teachers to call attention to the importance of hydropathic procedures in the treatment of disorders of the nervous system and metabolism, and numerous pupils of his clinic are now the directors of clinics for, or teachers of, hydropathy in Austria as well as in Germany.

Jan. 21st.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Medical Events in 1906.

In Budapest the prominent event of the past year was the National Congress on Cancerous Diseases, the meetings of which were described in THE LANCET of Dec. 8th, 1906, p. 1626. The question of the third university in Hungary has been brought a step nearer to the realisation of the idea. Among topics of professional interest the most important feature of the year has been the movement for increasing the remuneration of the district and county medical officers. Their private fees are fixed by the State and these, together with their official salaries, are very low. The official salary of a district medical officer in the poorer parts of Erdély in Transylvania does not exceed £50 a year, and the fee for advice at the practitioner's house is fixed at 6d., while the fee for attendance at the patient's residence is 1s. There are districts where the private fees do not in a year amount to more than £40 or £50. These intolerable conditions will be altered now. The subject has come before Parliament and Count Andrássy, the Minister of the Interior, expects that the official salaries of county medical officers will be raised so as to range between a minimum of £100 and a maximum of £120.

The Prevention of Tuberculosis.

A sanatorium for tuberculosis will be erected in the near future for the workpeople of the State machine works in Algyó, a charming country place in Hungary, where fresh air, a fine river, and beautiful scenery supply the conditions suitable for a sanatorium. The initiator of this is Mr. Wekerle, the President of the Ministry, who when reading the mortality statistics of the men employed in the State machine works was struck by the high proportion (14 per cent.) of deaths caused by consumption.

The Spread of Venereal Diseases.

A census of venereal patients, be it made with ever so much care, is always incomplete, partly because many patients treat themselves and partly because of the great

number of irregular practitioners or quacks who compete with medical men in treating venereal diseases. Owing also to the long duration of venereal diseases patients often lose patience and go from one medical man to another, with the result that the same patient appears in the statistics several times. In the military statistics, however, all these difficulties of the enumeration are avoided and trustworthy data are obtained. According to the military statistics the prevalence of venereal diseases per 1000 men in the Austro-Hungarian army was as follows for the quinquennial periods from 1881 to 1900: 73.6 for the period 1881-86; 65.3 for the period 1886-91; 63.2 for the period 1891-94; 64.8 for the period 1894-95; and 61.0 for the period 1896-1900. The conclusion derived from these figures is that the incidence of syphilis is decreasing. An examination of the analogous statistics of other countries shows that the incidence of syphilis is highest in the English and Dutch armies. This is probably due to the large number of troops stationed in the colonies where venereal diseases are rife among the native population.

Jan. 19th.

Obituary.

THOMAS SAVAGE, M.D. ST. AND., F.R.C.S. ENG.

AMONG the numerous victims of the recent earthquake at Jamaica we greatly regret to find the name of Dr. Thomas Savage. Dr. Savage had made several trips to the West Indies and on this occasion sailed on Dec. 29th, 1906, with his nephew, Mr. O'Connell, and a lady friend of the family, Miss Hall, for the benefit of his health. The first report of the terrible event at Kingston caused considerable anxiety to his family; these fears for his safety were confirmed by the sad news of his death and of the death of those who accompanied him.

Dr. Savage was born at Wolverhampton in the year 1839. Destined at an early age for the medical profession he was apprenticed to Mr. Hadley of Ashted, Birmingham. He became a Member of the Royal College of Surgeons of England in 1860 and a Fellow in 1869; also in 1877 a Member of the Royal College of Physicians of London and M.D. of the University of St. Andrews in 1882. After his pupillage he was for two years house surgeon to the Eye Hospital, subsequently settling in general practice at Bordesley, a suburb of Birmingham. Dr. Savage was attached to Sydenham College—the then medical school—as lecturer on botany, and on the amalgamation of this institution with Queen's College he was appointed professor of comparative anatomy. In 1871 Dr. Savage was chosen as one of the four surgeons to the newly-founded Hospital for Women, where shortly after, on the resignation of one of the staff, he became senior surgeon, a position which he held until some ten years ago when he was appointed consulting surgeon. The circumstances attending his retirement were unfortunately due to the loss of one arm, disease in the elbow of which necessitated amputation. On his appointment to the Hospital for Women Dr. Savage devoted exceptional ability and energy to the work of that institution. He acquired considerable reputation as an operating surgeon and though the dominant power and personality of Mr. Lawson Tait on the same staff and in the same pursuit exercised much influence, Dr. Savage justly shared the fame which the hospital achieved in the impetus given to the position of gynaecology and in the extension of this knowledge to the profession. He subsequently became professor of midwifery at Queen's College, and on the merging of this school with the new University of Birmingham he was elected professor of midwifery. The chair was at this time divided between midwifery and gynaecology, and the latter was allotted to Mr. Lawson Tait. Professional success was attended with increased duties. Dr. Savage was appointed consulting surgeon to the Wolverhampton Hospital for Women, and to the Kidderminster Infirmary. He was at times also president of the British Gynaecological Society, of the Birmingham branch of the British Medical Association, and of the Medical Society in that city.

As a surgeon Dr. Savage was skilful, accurate, and careful. He enjoyed the confidence of his professional brethren as well as of a large circle of patients. He published the Ingleby lectures on Abdominal Section in 1881; also papers

not yet near the 15 per 1000 of other nations. Still she is on the progressive grade, "eppur si muove," and with her economic rehabilitation and the re-invigorated life of her academic and scientific institutions she must surely minimise the interval that divides her from the "Bertani goal" ere the twentieth century is many years older.

The Post-graduate Cliniques at Milan.

Jan. 11th was a medico-surgical festa at Milan, dedicated as it was to the opening of the Istituti Clinici di Perfezionamento the completion of which will ere long be an epoch-marking event in the Alta Italia. The Istituto Ostetrico-Ginecologico is already a *fait accompli*, the others will rapidly follow suit, while the post-graduate curriculum as a whole was appropriately initiated by an address on the History of Medicine by a master of the subject, Dr. Piero Giacosa, professor of materia medica in the University of Turin. That history will constitute of itself a special feature in the post-graduate curriculum, commencing with a survey of so-called "popular medicine," then settling down to the evolution of its first, rude pre-mature theories, contrasting the "dogmatic systems" characteristic of the peoples of the Far East with the "empirical systems" peculiar to those of the West. Then the course will take cognisance of medicine in its relation to philosophic speculation, to the religion, the customs, the commerce, and the social development of humanity. The influence of Christianity on theoretical and practical medicine will be duly considered, with full reference to the "monastic" and the "Saracenic" episodes in its history. Then, gradually working up to the epoch in which medicine assumes the form and substance of an independent science, the course will take in succession the various discoveries which have revolutionised theory and practice—by which time the student will be in a position to bring his critical faculties into play, so as to recognise the "traditional error" still nestling in current doctrine, and finally to reach the organic conception of health and its opposite made possible by "that magnificent ensemble of inductions which constitute the medicine and biology of to-day." The address in which this outline of the medico-historical course was adumbrated evoked repeated plaudits from the audience, professional and lay, which thronged the obstetrico-gynaecological pavilion and, in its published form, will find many to appreciate its conclusions, if not, indeed, to profit by the example it holds out to other "clinici di perfezionamento." The series of "courses" in post-graduate medicine will include one on the Physio-pathology, Theoretical and Clinical, of Social Maladies, by Dr. Edoardo Bonardi, professor of special pathology in the University of Pavia, in which cognisance will be taken of anæmia, rachitis, pellagra, malaria, typhoid fever, and the group of bacillary infections, alcoholism, uricæmia, diabetes, polysarcoma, and arterio-sclerosis. Another course, that of the epidemico-contagious diseases (scarlet fever, measles, small-pox, and diphtheria) will be given by Dr. Polverini, professor of "exotic medicine" in the Istituto di Studi Superiori in Florence; another on Clinical Orthopædia, by Dr. Galeazzi of the Institute for Rachitis in Milan; another on the Physio-pathology of Infective Diseases, by Dr. Belfanti, professor of bacteriology also in Milan; another on Traumatology, by Dr. Baldo Rossi; another on Ophthalmic Medicine and Surgery, by Dr. Ferri and Dr. Denti—to say nothing of the course on Clinical Obstetrics and Gynaecology, conducted by Porro's distinguished successor, the Senator Mangiagalli, and a fully equipped staff. Professor Mangiagalli, I may add, is the dean of this "new medical faculty," as the profession in Milan call it—a faculty which will reinforce itself from other schools (Turin, Florence, &c.) with eminent authorities in such subjects as Public Hygiene, Industrial and Commercial, and similar themes of universal interest.

Jan. 21st.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Radio-activity of Water from Springs.

THE inclusion of radium amongst the curative agents of health resorts and medicinal waters has naturally led to a search for this substance in all the so-called "indifferent" thermal waters, the notion of which could not be explained hitherto. A large number of the Austrian health resorts have

now been found to possess a more or less considerable quantity of radio-active substances in their springs, and the deposits of the hot sulphur springs in Baden near Vienna, in Mehadia, and in Pistyan are useful as a source of radium. The most important of all these places, however, is Joachimsthal, where the pitchblende is found from which M. and Madame Curie obtained the first samples of radium. The mines there are the property of the Austrian Government which has ordered that the radium extracted from 10 tons of the pitchblende shall be delivered to the Vienna Academy of Sciences for distribution amongst hospitals, physical laboratories, and similar institutions. In Joachimsthal the water from the mines will be made use of for bathing purposes, and the establishment of a "radium curhaus" for certain ailments is contemplated by the local authorities. It may be mentioned that the Joachimsthal mine water has already been employed by medical men in cases of neurasthenia and anæmia, and of prostatic enlargement. The latter method has been already tried in Bad Gastein with satisfactory results, but it was found that the water must be used cautiously, as general symptoms (from the disintegration of the prostatic tissue) made their appearance in one case.

A Proposed Increase of Medical Fees.

At a meeting of the Union of Medical Clubs, held recently in Vienna, a resolution was adopted in which all practitioners were asked to raise their fees uniformly. The present social and financial conditions of medical practice are disheartening, for the cost of food, lodging, and other necessities of existence have increased so much that very many medical men are unable to maintain the position required by their profession. One of the latest burdens laid upon the practitioner is the raising of the amount payable for using the telephone, which has become dearer by 50 per cent. since the new year. The making of a charge for consultations by telephone had for a long time been in contemplation but the Aerztokammer (Medical Council), while not exactly discouraging the proposal, was not much in favour of it. Now it has left the question quite open for the profession to deal with and a unanimous decision will be undoubtedly arrived at in all the clubs. As regards the new fees the Aerztokammer is of opinion that the rate of payment for medical assistance is a matter for private arrangement and cannot be fixed for all uniformly. But a new tariff, a so-called minimal tariff, has been worked out, below which no practitioner should go unless the patient be really indigent. This tariff provides a fee of three kronen (2s. 6d.) for advice at the practitioner's house during consulting hours and a fee of from four to six kronen (from 3s. to 5s.) for attendance at the patient's residence, with an addition of 50 per cent. for night visits. For obstetrical or surgical work special fees are to be charged with a specified lower limit. Altogether the present scale of fees (which is, however, not binding for all practitioners in Vienna) has been increased by about 50 per cent. The public has been informed unofficially, but still very distinctly, through the newspapers, of the reasons for the increase of medical fees. Naturally the public try to pay as little as possible for medical attendance, but with the aid of organisation and unanimity the objections will be overcome.

Vital Statistics.

The last week of the year 1936 showed a few remarkable figures as regards the mortality and morbidity of Vienna. The sudden change of the weather and the great difference of temperature between morning and afternoon on Dec. 25th (in the morning -7°C . and in the afternoon $+6^{\circ}\text{C}$.) caused a rapid increase of the diseases of the upper air passage, and the wet warm weather had a harmful effect on the spread of the wet warm weather had a harmful effect on the spread of the infectious exanthematic fevers. The rate of mortality was 19.7 per 1000 and 743 deaths were reported in this week, of which three were due to typhoid fever, nine to measles, eight to scarlet fever, and eight to diphtheria. Pulmonary tuberculosis caused 110 deaths, and neoplasms caused 50 deaths. No case of variola has been seen in Vienna since the beginning of 1905; this long absence of the disease supplies an excellent argument against the antivaccination agitators. The number of infectious diseases which must be notified has been increased, trachoma and leprosy being added to the list, so that now there are 25 diseases classified as *anzeigepflichtig* (compulsorily notifiable).

A Case of Fistula after Thyroiditis.

Dr. Paul Albrecht has recently had occasion to operate upon a woman for a condition which hitherto has been

to share its splendid library and the large balance standing to its credit at the bank. Dr. H. R. Spencer acknowledged the toast on behalf of the Obstetrical Society of London and said that he looked upon the union of the Obstetrical and Gynaecological Societies as only a stage towards another union which would take place some day—namely, the union of the Royal College of Physicians of London with the Royal College of Surgeons of England, for it was those Colleges which ought to form the Royal Academy of Medicine in this country. Dr. Clement Godson proposed "The Guests," which was acknowledged by Director-General H. M. Ellis, R.N., and Surgeon-General Sir Thomas J. Gallwey, A.M.S. The last speech of the evening was from the chairman who paid a graceful tribute of thanks to Dr. H. Overy for his valuable services as honorary secretary.

APPRECIATION OF THE SERVICES OF A POOR-LAW MEDICAL OFFICER.—At a recent meeting of the Macclesfield board of guardians the chairman referred in felicitous terms to Mr. James B. Hughes, M.R.O.S., who for 40 years has been medical officer of the Macclesfield union infirmary. The chairman, after dealing with the remarkable improvement which had taken place with regard to the care of the patients during Mr. Hughes's connexion with the infirmary, said it was not often that Plato was quoted in a board of guardians, but Plato's remark that "No physician considers his own good in what he prescribes, but the good of the patient," particularly applied to Mr. Hughes, who had given of himself and of his best for the benefit of the poor, and he therefore asked the board to join in congratulating him upon having fulfilled 40 years' service. A vote of congratulation was unanimously carried.

WHITBY COTTAGE HOSPITAL AND THE MEDICAL STAFF.—The abuse of the out-patient department of the Whitby Cottage Hospital has induced the whole of the honorary medical staff to resign, and the matters in dispute have not been settled yet. As recorded in THE LANCET of Dec. 22nd, 1906, p. 1760, the medical men in a body walked out of the room in which the annual meeting was proceeding. Various endeavours have been made in the interval to come to some arrangement with the medical staff but the deadlock still continues. An influential committee, consisting of the Rev. Canon the Marquess of Normanby, Major R. Bell Torton, J.P., County Alderman R. O. Yeoman, J.P., Mr. E. H. Chapman (barrister), and the Rev. T. Rethmell (superintendent Wesleyan minister), has been appointed to confer with the medical men and to make whatever arrangements seem feasible with a view to carry on the hospital. A meeting was arranged with a committee from the members of the Whitby Medical Society, of which Dr. W. E. F. Tinley is the secretary, but the medical men declined to discuss the hospital committee's two suggested amendments unless their proposed alteration of a rule affecting the out-patient department was accepted, viz.:—

That the out-patient department shall be limited to those who had been in-patients of the hospital and require further attendance, and to those who had not been in-patients, but who are recommended by a medical man, except in urgent accident cases.

The conference of the hospital sub-committee with the representative of the medical staff (Dr. G. B. Mitchell) was abortive and the deadlock continues, but it is hoped that a satisfactory *modus vivendi* will soon be attained.

LEPROSY IN BRITISH GUIANA.—Mr. G. D. Bayley, acting assistant Government Secretary of British Guiana, in his report in the Blue Book of the colony for the year 1905-06, mentions that the system of segregation of lepers continues to be enforced so far as possible. The total number of inmates in the Leper Asylum on March 31st, 1906, was 420. The deaths during the year had numbered 71 and the discharges 20. The indoor and outdoor work was carried on as usual. The net cost of the institution for the year was £4609, exclusive of the medical officer's salary. The colonial legislature has enacted an ordinance making further provision for the care of lepers and for the taking of precautions against the spread of leprosy which unfortunately is greatly on the increase in the colony. The ordinance provides that lepers wandering abroad, and others who cannot be properly isolated in their own homes, shall be sent to the leper asylum. Provision is made for householders and employers of labour reporting cases of leprosy to a medical officer.

Certain trades, in which articles of food or clothes have to be handled, are prohibited to lepers and precautions are authorised for preventing the landing of lepers in the colony. Power is also given to declare part of the leper asylum to be a prison, in which lepers sentenced to imprisonment may be confined, so as to avoid the risk of lepers carrying contagion to an ordinary prison. A similar provision is made for lunatic lepers so as to prevent the risk of contagion to persons in the ordinary lunatic asylums.

CENTRAL LONDON OPHTHALMIC HOSPITAL (GRAY'S INN-ROAD).—The new pathological, bacteriological, and x ray laboratories of this hospital, which were long felt to be a necessity, are now fully equipped for carrying on the work of the hospital. It is further proposed that they shall be open to students for research work in connexion with the pathology of the eye. Classes with lantern demonstrations have been arranged to begin in February. Special attention will be paid to the histology of the eye and to the more recent work on opsonins. The hospital affords ample material for the proper carrying on of research work in these subjects.

MEDICAL BARRISTERS.—Two medical men are to be "called" this Hilary term—namely, by Gray's Inn, Hedley Coward Bartlett, L.R.C.P. Lond., M.R.C.S. Eng., of Saffron Walden, Essex; and by the Middle Temple, Heinrich Oppenheimer, LL.B., M.D. Heidelb., M.R.C.P. Lond., M.R.C.S. Eng., of Hampstead.

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A Text-book of Pathology. By Alfred Stengel, M.D., Professor of Clinical Medicine, University of Pennsylvania; Physician to the Pennsylvania, University, and the Philadelphia Hospitals. Fifth edition, thoroughly revised. Price 21s. net.

The Technique of Operations upon the Intestines and Stomach. By Alfred H. Gould, M.D., of Boston. Price 21s. net.

Photography (Skiascopy or Retinoscopy). By Mark D. Stevenson, M.D., Ophthalmic Surgeon to the Akron City Hospital; Oculist to the Children's Home, Akron, Ohio; Ophthalmologist to the White Hospital, Ravenna, Ohio. Price cloth, 5s. net.

A Text-book on the Practice of Gynecology for Practitioners and Students. By William Easterly Ashton, M.D., LL.D., Fellow of the American Gynecological Society, Professor of Gynecology in the Medico-Chirurgical College, and Gynecologist to the Medico-Chirurgical Hospital, Philadelphia. Third edition, revised and enlarged. Price 27s. 6d. net.

WETHERILL, H. EMERSON, 3734, Walnut-street, Philadelphia, Pa., U.S.A.

Hygromedry. By Henry Emerson Wetherill, M.D., Lt., Jr. Grade, Surg., and A.I.R.P., S.F.Pa. Price £2.50.

WILEY, JOHN, AND SONS, New York. (CHAPMAN AND HALL, Limited, London.)

Physical Chemistry in the Service of Medicine. Seven Addresses. By Dr. Wolfgang Pauli, Privat-docent in Internal Medicine at the University of Vienna. Authorized translation by Dr. Martin H.

on Oophorectomy and on the Treatment of Uterine Myoma, and, in 1891, the presidential address to the branch entitled "Some Aspects of the Present State of Gynecology." Nor did his activity cease on his retirement from the work of his profession. After his illness he took a house in the country at Knowle in Warwickshire where he still continued to maintain an interest in many charitable and useful kinds of work. There he was appointed a magistrate for the county; he became also a county councillor, in which capacity he rendered valuable work as a member of the sanitary and education committee of the county council. His judgment was sound, his knowledge was widely varied, and his tastes were cultured. Added to a high sense of duty and steadfastness of purpose, he possessed settled principles of fairness and impartiality. His many qualities of character made him much respected as a citizen and valued with deep regard as a friend.

Dr. Savage married in 1864 Miss Gosling of Richmond, Surrey. He leaves his widow, one son (Dr. Smallwood Savage), and three daughters. One son, Dr. Arthur Savage, died a few years since on the threshold of a career full of bright prospects of success.

WALTER JOHN SYKES, M.D. EDIN., D.P.H. CAMB.,
F.I.C.

THE public analysts of this country have lost a great friend and a valued contributor to applied science by the death of Dr. Walter John Sykes, who was editor of the *Analyst* for the past 15 years. Dr. Sykes died suddenly at his residence in East Grinstead on Dec. 16th last. He was born at Wakefield in 1842 and was educated at the local grammar school. He chose medicine for his profession and graduated as M.D. in 1866 at the University of Edinburgh. He was house surgeon at Clayton Hospital, Wakefield, in which town he ultimately established a general medical practice, which after a few years he gave up and then went to Heckmondwike. He was subsequently appointed medical officer of health of the borough of Portsmouth, succeeding Dr. George Turner, now chief medical officer of the Orange River Colony. He gave up this appointment, which included that of public analyst, in 1886 and decided to take up the study of chemistry, chiefly from the analytical point of view. He devoted special attention to the chemistry of brewing and published several important papers on the subject and finally wrote a book of admitted practical value entitled "The Principles and Practice of Brewing," the second edition of which has only recently passed through the press. The current number of the *Analyst* contains an appreciative and feeling notice of Dr. Sykes's career and attractive personality by Mr. Otto Hehner and an excellent portrait.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced: Dr. A. E. Macdonald, formerly professor of mental diseases and of forensic medicine at the University and Bellevue Hospital, New York. Dr. W. J. Herdman, professor of neurology and psychiatry in the Ann Arbor University, Michigan. Dr. Dron, one of the senior surgeons in Lyons.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At the Congregation on Jan 17th the following degrees were conferred:—

M.D.—G. S. Keeling, Caius.
M.C.—E. C. Hughes, Clare.
M.B. and B.C.—O. May, St. John's; and P. R. Parkinson, Caius.
B.C.—G. W. Goodhart, Trinity; P. P. Laidlaw, St. John's; J. W. Linnell, St. John's; D. G. Pearson, Pembroke; N. Wilson, Pembroke; G. F. S. Bailey, Caius; J. H. Iles, Caius; D. K. Nutman, Jesus; F. P. Young, Christ's; F. A. Barker, Emmanuel; T. S. Hele, Emmanuel; S. L. Walker, Sidney Sussex; and W. H. R. Sutton, Downing.

UNIVERSITY OF OXFORD.—The following are the degree days in the present term:—Saturday, Feb. 16th, at 2.30 p.m.; and Thursday, March 14th, at 10 a.m.—The days fixed for the commencement of the B.M. examinations in 1907 are Thursday, June 20th, and Thursday, Dec. 5th. Names must be entered not later than 10.30 a.m. on Tuesday, June 4th, and Tuesday, Nov. 19th, respectively.—The day fixed for receiving names for the examination for the degree of Master of Surgery is June 7th.—

The examination for the Radcliffe Travelling Fellowship, already announced, will commence on Tuesday, Feb. 26th. The names are to be sent in to the Regius Professor of Medicine on or before Saturday, Feb. 9th. Full details are given in the *University Gazette* of Jan. 18th, 1907.—Examinations for scholarships in natural science are announced as follows: March 12th, Keble College; March 18th, Merton College and New College.—The Vice-Chancellor has appointed the Right Honourable Lord Curzon of Kedleston, M.A., Hon. D.O.L., of All Souls' College, G.O.S.I., G.C.I.E., F.R.S., who was appointed last year but was prevented from delivering the lecture, to be the Romanes Lecturer for 1907.—Mr. C. M. Burrell of the Merchant Taylors' School has been elected to a scholarship in natural science in University College.

MEDICAL MEN AND COMMISSIONS.—At the Bournemouth county court on Jan. 18th, before Judge Philbrick, K.C., Dr. G. E. J. Crallan sought, as secretary of the Association of Medical Men Receiving Resident Patients, to recover from Dr. T. C. Fisher, of Torquay, £6 11s. 3d. being 5 per cent. commission on the sum of £131 5s., the amount of fees received up to the end of 1906 from a patient alleged to have been introduced to the defendant through the medium of the association. In giving judgment, his honour said: "An association of professional gentlemen which by its rules stipulated for the payment of commission on sums received in respect of patients was somewhat of a novelty. It was not his duty to act as censor, but he was by no means convinced that such associations, or such stipulations, as these deserved encouragement, and as he did not believe that the patient was obtained through the association he gave judgment for defendant."

LITERARY INTELLIGENCE.—Among the additions to the "World's Classics" to be published immediately by the Oxford University Press are the evergreen works of Professor Oliver Wendell Holmes "The Poet" and "The Professor at the Breakfast Table." Scott's "Lives of the Novelists," with introduction by Mr. Austin Dobson; Thackeray's "Pendennis," with introduction by Mr. Edmund Gosse; and "Sheridan's Plays," with introduction by Mr. Joseph Knight, are also announced in the same series.—Two monographs of interest to aural surgeons are shortly to be published by Messrs. J. and A. Churchill. One is entitled "Some Points in the Surgical Anatomy of the Temporal Bone from Birth to Adult Life," by Mr. Arthur H. Obeath, F.R.C.S. Eng., aural surgeon to King's College Hospital. The work is illustrated with reproductions of photographs of specimens. The other work is upon "The Labyrinth of Animals," and contains 30 reproductions of stereoscopic photographs. The author is Mr. A. A. Gray, M.D. Glasg., F.R.S. Edin., aural surgeon to the Victoria Infirmary, Glasgow.

BRITISH GYNÆCOLOGICAL SOCIETY.—Mr. F. Bowreman Jessett, President of the society, took the chair at the annual dinner, which was held at the Monaco Restaurant, Regent-street, London, on Jan. 17th. Dr. F. H. Champneys, in submitting the toast of "The British Gynecological Society," said in regard to the amalgamation scheme of the medical societies that there were those who prophesied that new societies would be formed outside the main body as had happened abroad. But as far as related to the section which would be formed by the union of the Obstetrical and Gynecological Societies the amalgamation of those bodies would render it impossible for any successful opposition to be set up outside the section. The toast was replied to by the chairman. Mr. W. D. Spanton proposed the toast of "The Royal College of Physicians of London and the Royal College of Surgeons of England," which was acknowledged by Dr. Amand Routh, who, speaking on behalf of the Royal College of Physicians, declared that the work of the profession and from that point advantage and dignity of the profession and of the society of view it did not lose sight of gynecology. Mr. Henry Morris, President of the Royal College of Surgeons, who also replied to the toast, said that it must be admitted by all that the introduction of gynecology into surgery was a great advantage, for it without doubt led to the better understanding of the better treatment of a great number of maladies. "The Obstetrical Society of London" was the next toast, which was proposed by Dr. H. Macnaughton-Jones, who took the opportunity to bestow warm praise on that society for throwing itself in with the common lot in the amalgamation scheme of the societies, thereby enabling others

to share its splendid library and the large balance standing to its credit at the bank. Dr. H. R. Spencer acknowledged the toast on behalf of the Obstetrical Society of London and said that he looked upon the union of the Obstetrical and Gynaecological Societies as only a stage towards another union which would take place some day—namely, the union of the Royal College of Physicians of London with the Royal College of Surgeons of England, for it was those Colleges which ought to form the Royal Academy of Medicine in this country. Dr. Clement Godson proposed "The Guests," which was acknowledged by Director-General H. M. Ellis, R.N., and Surgeon-General Sir Thomas J. Gallwey, A.M.S. The last speech of the evening was from the chairman who paid a graceful tribute of thanks to Dr. H. Overy for his valuable services as honorary secretary.

APPRECIATION OF THE SERVICES OF A POOR-LAW MEDICAL OFFICER.—At a recent meeting of the Macclesfield board of guardians the chairman referred in felicitous terms to Mr. James B. Hughes, M.R.C.S., who for 40 years has been medical officer of the Macclesfield union infirmary. The chairman, after dealing with the remarkable improvement which had taken place with regard to the care of the patients during Mr. Hughes's connexion with the infirmary, said it was not often that Plato was quoted in a board of guardians, but Plato's remark that "No physician considers his own good in what he prescribes, but the good of the patient," particularly applied to Mr. Hughes, who had given of himself and of his best for the benefit of the poor, and he therefore asked the board to join in congratulating him upon having fulfilled 40 years' service. A vote of congratulation was unanimously carried.

WHITBY COTTAGE HOSPITAL AND THE MEDICAL STAFF.—The abuse of the out-patient department of the Whitby Cottage Hospital has induced the whole of the honorary medical staff to resign, and the matters in dispute have not been settled yet. As recorded in THE LANCET of Dec. 22nd, 1906, p. 1760, the medical men in a body walked out of the room in which the annual meeting was proceeding. Various endeavours have been made in the interval to come to some arrangement with the medical staff but the deadlock still continues. An influential committee, consisting of the Rev. Canon the Marquess of Normanby, Major R. Bell Turtton, J.P., County Alderman R. O. Yeoman, J.P., Mr. E. H. Chapman (barrister), and the Rev. T. Rathmell (superintendent Wesleyan minister), has been appointed to confer with the medical men and to make whatever arrangements seem feasible with a view to carry on the hospital. A meeting was arranged with a committee from the members of the Whitby Medical Society, of which Dr. W. E. F. Tinley is the secretary, but the medical men declined to discuss the hospital committee's two suggested amendments unless their proposed alteration of a rule affecting the out-patient department was accepted, viz.:—

That the out-patient department shall be limited to those who had been in-patients of the hospital and require further attendance, and to those who had not been in-patients, but who are recommended by a medical man, except in urgent accident cases.

The conference of the hospital sub-committee with the representative of the medical staff (Dr. G. B. Mitchell) was abortive and the deadlock continues, but it is hoped that a satisfactory *modus vivendi* will soon be attained.

LEPROSY IN BRITISH GUIANA.—Mr. G. D. Bayley, acting assistant Government Secretary of British Guiana, in his report in the Blue Book of the colony for the year 1905-06, mentions that the system of segregation of lepers continues to be enforced so far as possible. The total number of inmates in the Leper Asylum on March 31st, 1906, was 420. The deaths during the year had numbered 71 and the discharges 20. The indoor and outdoor work was carried on as usual. The net cost of the institution for the year was £4609, exclusive of the medical officer's salary. The colonial legislature has enacted an ordinance making further provision for the care of lepers and for the taking of precautions against the spread of leprosy which unfortunately is greatly on the increase in the colony. The ordinance provides that lepers wandering abroad, and others who cannot be properly isolated in their own homes, shall be sent to the leper asylum. It is made for householders and employers of labouring cases of leprosy to a medical officer.

Certain trades, in which articles of food or clothes have to be handled, are prohibited to lepers and precautions are authorised for preventing the landing of lepers in the colony. Power is also given to declare part of the leper asylum to be a prison, in which lepers sentenced to imprisonment may be confined, so as to avoid the risk of lepers carrying contagion to an ordinary prison. A similar provision is made for lunatic lepers so as to prevent the risk of contagion to persons in the ordinary lunatic asylums.

CENTRAL LONDON OPHTHALMIC HOSPITAL (GRAY'S INN-ROAD).—The new pathological, bacteriological, and x ray laboratories of this hospital, which were long felt to be a necessity, are now fully equipped for carrying on the work of the hospital. It is further proposed that they shall be open to students for research work in connexion with the pathology of the eye. Classes with lantern demonstrations have been arranged to begin in February. Special attention will be paid to the histology of the eye and to the more recent work on opsonins. The hospital affords ample material for the proper carrying on of research work in these subjects.

MEDICAL BARRISTERS.—Two medical men are to be "called" this Hilary term—namely, by Gray's Inn, Hedley Coward Bartlett, L.R.O.P. Lond., M.R.C.S. Eng., of Saffron Walden, Essex; and by the Middle Temple, Heinrich Oppenheimer, LL.B., M.D. Heidelb., M.R.C.P. Lond., M.R.C.S. Eng., of Hampstead.

BOOKS, ETC., RECEIVED.

SMITH, ELDER, AND CO., 15, Waterloo-place, London, S.W.

Climatotherapy and Balneotherapy. The Climates and Mineral Water Health Resorts (Spas) of Europe and North Africa. Including the General Principles of Climatotherapy and Balneotherapy, and Hints as to the Employment of Various Physical and Dietetic Methods. Being a third edition of "The Mineral Waters and Health Resorts of Europe," much enlarged in respect to Medical Climatology. By Sir Hermann Weber, M.D., F.R.C.P., Consulting Physician to the German Hospital, London, the Royal National Hospital for Consumption, Ventnor, and the Mount Vernon Hospital for Diseases of the Chest, Hampstead; Hon. President of the British Balneological and Climatological Society; and F. Parkes Weber, M.D., F.R.C.P., Physician to the German Hospital, London, and to the Mount Vernon Hospital for Diseases of the Chest, Hampstead. Member of the British Balneological and Climatological Society. Edited by F. Parkes Weber. Price 15s. net.

WATERLOW AND SONS, LIMITED, London Wall, London.

Lessons on Elementary Hygiene and Sanitation, with Special Reference to the Tropics. By W. T. Prout, O.M.G., M.B., C.M., Edin., Principal Medical Officer, Sierra Leone, Member of Legislative Council, Medical Officer of Health, City of Freetown, &c. Printed for the Colony of Sierra Leone. Price not stated.

W. B. SAUNDERS COMPANY, Philadelphia and London.

A Manual of Normal Histology and Organography. By Charles Hill, Ph.D., M.D., Assistant Professor of Histology and Embryology at the North-Western University Medical School, Chicago. Price 10s. net.

A Text-book of Obstetrics. By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania; Gynecologist to the Howard, the Orthopedic, and the Philadelphia Hospitals, &c. Fifth edition, revised and enlarged. Price 21s. net.

Surgery, its Principles and Practice. By Various Authors. Edited by William Williams Keen, M.D., LL.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Volume I. (to be completed in five volumes). Price, cloth, 30s. net.

Prevalent Diseases of the Eye. By Samuel Theobald, M.D., Clinical Professor of Ophthalmology and Otolaryngology in the Johns Hopkins University. Price 19s. net.

A Text-book of Pathology. By Alfred Stengel, M.D., Professor of Clinical Medicine, University of Pennsylvania; Physician to the Pennsylvania, University, and the Philadelphia Hospitals. Fifth edition, thoroughly revised. Price 21s. net.

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WETHERILL, H. EMERSON, 3734, Walnut-street, Philadelphia, Pa., U.S.A.

Hygromedry. By Henry Emerson Wetherill, M.D., LL., Jr. Grade, Surg., and A.L.H.P., N.F.P.A. Price \$2.50.

WILEY, JOHN, AND SONS, New York (CHAPMAN AND HALL, LIMITED, London.)

Physical Chemistry in the Service of Medicine. Seven Addresses. By Dr. Wolfgang Pauli, Privat-docent in Internal Medicine at the University of Vienna. Authorized translation by Dr. Martin H.

Fischer, Professor of Pathology at the Oakland College of Medicine. First edition. First thousand. Price, cloth, \$1.25 net, or 5s 6d. net.

The Toxins and Venoms and their Antibodies. By Em. Pozzessere. Authorised translation by Alfred I. Cohn, Ph.D. First edition. First thousand. Price, cloth, \$1.03 net; or 4s 6d. net.

WILLIAMS AND NORRIS, 14, Henrietta-street, Covent Garden, London, W.C.

Transactions of the Epidemiological Society of London. New Series. Vol. XXV. Session 1905-1906. Price 6s. net.

WRIGHT, JOHN, and Co., Bristol (SIMPSON, MARSHALL, HAMILTON, KENT and Co., LIMITED, London).

The Essential Similarity of Innocent and Malignant Tumours. A Study of Tumour Growth. By Charles W. Cathcart M.A., M.B., O.M. Edin., F.R.C.S. Eng. & Edin., Surgeon, Royal Infirmary, Edinburgh. Price 9s. 6d. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BIRT, A. C., M.R.C.S., L.R.O.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Wantage District of the county of Berks.

CULROSS, J., M.B., O.M. Glasg., has been re-appointed Honorary Medical Officer to the Newton Abbot Hospital.

DOUTY, EDWARD H., M.A., M.D., M.O. Cantab., F.R.C.S., M.R.C.P., M.D. Paris, &c., has been appointed Surgeon to the Queen Victoria Memorial Hospital, Nice.

GRIMBLEY, R. H., M.R.C.S., L.S.A., has been re-appointed Honorary Surgeon to the Newton Abbot Hospital.

HAYDON, E., M.B., O.M. Glasg., has been re-appointed Honorary Surgeon to the Newton Abbot Hospital.

HOSFORD, J. STROUD, F.R.C.S. Edin., has been appointed Honorary Assistant Surgeon to the Royal Eye Hospital, Southwark.

MARKS, URIAH, M.R.C.S., L.R.O.P. Lond., has been appointed House Physician at the Worcester Infirmary.

POLLARD, G. S., M.R.C.S., L.R.O.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Midmore Norton District of the county of Somerset.

ROSS, S. J., M.D. Vict., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Bedford District of the county of Bedford.

SHAW, W. F., M.D. Vict., has been re-appointed Resident Surgical Officer to the St. Mary's Hospitals, Manchester.

WATKIN, ARTHUR CHRISTOPHER, L.R.O.P. Lond., M.R.C.S., has been appointed House Surgeon at the Aberystwyth Infirmary.

YOUNG, J. STIRLING, M.B., Ch.B. Vict., has been appointed Fourth House Surgeon at St. Mary's Hospitals, Manchester.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANGOR, CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House Surgeon. Salary £20 per annum, with board, washing, and lodging.

BARROW-IN-FURNESS, NORTH LONDON HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodgings.

BEADFORD HOSPITAL AND WORKHOUSE.—Resident Assistant Medical Officer, unmarried. Salary £100, with rations, apartments, and washing.

BRISTOL DISPENSARY.—Medical Officer.

BRISTOL ROYAL INFIRMARY.—Resident Junior House Surgeon. Also Resident Casualty Officer. Both for six months. Salaries at rate of £50 per annum, with board, lodging, and washing. Also Resident Obstetric Officer. Salary £75 per annum, with board, lodging, and washing.

CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Surgeon for six months, renewable. Salary at rate of £60 per annum, with board, washing, and apartments.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road.—Registrar for in patients. Honorarium 20 guineas a year.

CHETSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Registrar. Honorarium £40 per annum.

CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—District Surgeon for Upper Holloway.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Resident Medical Officer. Salary £100 per annum, with board, residence, and laundry.

GLOUCESTER GENERAL INFIRMARY AND GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £30 per annum, with board, residence, and washing.

HAMPSTEAD GENERAL HOSPITAL.—Resident Medical Officer for eight months. Salary at rate of £50 per annum, with board and residence.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon for six months. Honorarium £20, with residence, board, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician also Assistant Casualty Medical Officer, both unmarried. Salary in each case 25 guineas for eight months, with board and residence.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium of £25. KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum and board.

KING EDWARD VII. SANATORIUM, Midhurst Sussex.—Junior Assistant Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and attendance.

LEEDS, HOSPITAL FOR WOMEN AND CHILDREN.—Resident Clinical Assistant.

LIVERPOOL STANLEY HOSPITAL.—Honorary Physician. Also House Surgeon. Salary £50 per annum, with board, residence, and washing.

LONDON COUNTY COUNCIL.—Lecturers to Evening Classes for Midwives and Maternity Nurses. Fee £22s. a lesson.

LONDON LOCK HOSPITAL.—House Surgeon to the Female Hospital. Salary £20 per annum, with board, lodging, and laundry. Also Surgeon to Out-patients.

MANCHESTER, ANCOATS HOSPITAL.—Resident House Physician. Salary £20 per annum, with board &c.

MENSTON, NEAR LEEDS, WEST RIDING ASYLUM.—Second Assistant Medical Officer. Salary £200, rising to £250, with board and apartments. Also Fourth Assistant Medical Officer. Salary £150, rising to £180, with board and apartments.

NEWCASTLE-UPON-TYNE AND NORTHUMBERLAND SANATORIUM FOR CONSUMPTION, Barrasford-on-Tyne.—Resident Medical Officer. Salary £120 per annum rising to £220, with board and laundry.

NEWPORT BOROUGH ASYLUM, Caerleon (Mon.).—Assistant Medical Officer, unmarried. Salary £170 per annum, with board, apartments, and attendance.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—Honorary Anaesthetist.

PADDINGTON INFIRMARY.—Second Assistant to the Medical Superintendent for six months. Salary at rate of £72 per annum, with board, lodging, and washing.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Assistant House Surgeon for six months, renewable. Salary £50, with board, residence, and washing.

REETH UNION DISTRICT AND WORKHOUSE, Yorkshire.—Medical Officer. Salary £37 10s.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Resident Medical Officer for six months. Salary at rate of £120 per annum, with apartments, board, and washing.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL.—Honorary Assistant Anaesthetist.

ROYAL PHILIPICO DISPENSARY, 104, Buckingham Palace-road, S.W.—Visiting Medical Officer.

SHEFFIELD, UNIVERSITY OF SHEFFIELD.—Chair of Pathology.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 a year, with board and apartments.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, apartments, &c.

VENTNOR, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Two Assistant Resident Medical Officers, unmarried. Salary £81, with board and lodging.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Honorary Surgeon.

Births, Marriages, and Deaths.

BIRTHS.

EDELSTEIN.—On Jan. 15th, at Brixton-road, S.W., the wife of Ernest A. Edelstein, M.B., M.A., of a son.
HODGSON.—On Jan. 18th, at Leyburn, Mitcham-lane, S.E., the wife of Charles Hodgson, L.R.O.P. Lond., M.R.C.S. Eng. of a son.
KEMPTHORNE.—On Jan. 9th, at Lahore Cantonments, India, the wife of Gerard Ainslie Kemplthorne, B.A. M.C., of a daughter.
RAMFORD.—On Jan. 19th, at Croxley Green, Herts, the wife of Alan C. Ramford, M.R.C.S., L.R.O.P., of a son.
RYALL.—On Jan. 19th, at 77, Harley-street, W., to Mr. and Mrs. Canny Ryall—a son.
TIBBITS.—On Jan. 18th, at Jury-street, Warwick, the wife of Hubert Tibbitts, M.B., of a daughter.

MARRIAGES.

AVELING-SHIMWELL.—On Jan. 23rd, at St. Wilfrid's Church, Northenden, by the Rev. Thomas Shimwell, M.A. (brother of the bride), assisted by the Rev. Lowrie Hamilton, M.A., Rector of the Parish, and the Rev. John Brunster, Vicar of Gately, Leslie Baldwin Aveling, B.A., M.B., B.C., of Park Lane House, Royston, to Dorothy, second daughter of William James Shimwell, of Gately, Cheshire.
SIMON-OLARKE.—On the 17th, at St. George's, Hanover-square, by the Rev. Canon Bristol, M.A., of Southwark Cathedral, assisted by the Rev. Daven Jones, D.A., Vicar of Kidwelly, and the Rev. David Anderson, M.A., Rector, Captain Harold Simon, R.A.M.C., third son of Thomas Simon of Blackheath, to Kate Litton, eldest daughter of Ernest Clarke, M.D., F.R.C.S., of Chandos-street, Cavendish-square.
THOMPSON-CLARKE.—On Jan. 15th, at St. Peter's Church, Morley, by the Rev. H. T. Robinson, B.A., assisted by the Rev. F. Eyles, M.A., the Rev. Andrew Douglas, M.B., Ch.B., Edin., fourth son of Alexander Thompson, Esq., Barmal, Wigtonshire, N.B., to Amy Winifred Thompson, second daughter of J. O. Clarke, M.R.C.S. and L.S.A., of Bank House, Morley, Yorks.—At home, Comberton House, Halesowen Feb. 17th and 18th.

DEATH.

PEDDIE.—On Jan. 19th, at Rutland-street, Edinburgh, from pneumonia, Alexander Peddie, M.D., F.R.C.P.E., &c., in his 97th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A GREAT ESTATE, ITS AGENT, AND THE MEDICAL PROFESSION.

WE refused recently to publish an advertisement sent to us by Mr. Henry Whitcomb in behalf of the Petworth Park Friendly Society, of which society he is secretary. We did this because we do not insert advertisements of vacancies for medical officers to such societies until we have seen the rules of the society, or until we have had an opportunity of learning the position enjoyed by the previous holder of the appointment if circumstances point to the advisability of obtaining the information. Mr. Whitcomb asked us to state our reasons "in common fairness to the committee and the president of the society, Lord Leconfield," whose estate, he informs us, "is one of the largest private estates in the South of England." We hasten to explain the situation quite clearly to Lord Leconfield and the committee. Firstly, we have never seen the rules of the Petworth Park Friendly Society. Mr. Whitcomb failed to send them to us, and a later communication from Mr. Herbert E. Watson, the chairman of the society, also failed to inclose them, though alluding to them as an inclosure. Secondly, the remuneration of the medical officer to the Petworth Friendly Society works out on the present terms at under 3s. per head per annum, for which sum he will be expected to attend in all directions of Petworth within a radius of seven miles, confinements and surgical cases included. We want Lord Leconfield to grasp the fact that this is extremely bad pay, and that we do not desire to help the society over which he presides in any intention which that society may have to continue to give such terms.

The decision that we were unable to insert the advertisement was strongly confirmed by the following letter which was later received by our manager:—

Jan. 22nd, 1907.

DEAR SIR,—The secretary of the Petworth Park Friendly Society has shown me the correspondence he has had with your paper in reference to this society. The Right Honourable Lord Leconfield is president of this society and as it appears to be one of your rules for advertisements that you should have a copy of the society's rules, I herewith enclose you one, but I gather from your letter that the real reason for not inserting the society's advertisement was that you had had an intimation from Petworth in reference to it. I quite anticipated that this was the case and therefore urged the secretary to write his letter of the 19th January.

For over 50 years this society has retained the services of a resident medical man in Petworth and increased the payment for attendance some ten or 12 years ago, so that for the last ten years it has averaged £75. As chairman, I called a meeting of the members to consider the resignation of their medical officer and put this question to them: "Are you prepared to pay a higher contribution for medical attendance?" They unanimously said, "No." I then put it to them: "Would you like to advertise for another doctor?" This they again unanimously answered in the affirmative.

There are two other doctors practising in this place and, before coming to the conclusion to advertise, the members offered these doctors the post at the same price as their late officer, but they declined it. The society therefore had no other alternative but to advertise for a doctor.

I must say that it is somewhat hard that a body of labouring men should thus be apparently boycotted by the doctors in the place and not even allowed to make their wants known through the ordinary channels of the medical profession. I most certainly shall, unless you are prepared to reconsider your determination not to insert this advertisement, make known as publicly as possible the tyranny of the medical profession, for I can call it by no other name. We hear of trades unionism amongst the working classes, but I do not think from my present experience of the medical profession that it is confined to one class.

Yours faithfully,

HERBERT E. WATSON,
Agent to the Lord Leconfield.

P.S.—There being three doctors in the place I think you are bound to give the name of your informant, otherwise you will be doing them an injustice.—H. E. W.

The agent to the Lord Leconfield has a few things to learn, as well as how to write a polite and coherent letter. Responsible journalists are not to be bounced into accepting advertisements because the "one of the largest private estates in the South of England" makes threats of letting the public know his disapproval of them if any other course is pursued. The demeanour assumed by Mr. Watson may prove efficacious when collecting the rents of the said l.p.c., &c., but off Lord Leconfield's soil he will find it futile. The fact that the medical men in the locality refused the post—we thank Mr. Watson for the information—sufficiently proves what the figures we have given indicate. The terms of the Petworth Park Friendly Society are unfair to their medical officer.

DENTISTRY BY LIMITED COMPANY.

WE have received the following letter which does not bear any address upon it. We do not know if the names which it contains are genuine or fictitious:—

Jany. 11th, 1907.

To the Editor of THE LANCET, London.

DEAR SIR,—An answer to the following queries in your next issue will oblige.

I carry on the business of chemist and druggist, &c., as a limited company and employ as manager of my extensive dental practice a gentleman to whom patients are referred for treatment under the style of *Doctor Henderson*. This gentleman also uses the initials D.D.S. after his name on cards, notepaper &c., and is advertised as, and calls himself, a Doctor of Dental Surgery. (Walter James Henderson, D.D.S., F.S.Sc. (London).) As he has never been to America it is illegal for him to use this title without having a diploma for it? simply as an advertisement for the good of the business, and can proceedings be taken against him as I know it is impossible to prosecute me for referring to him as such, being a limited company?

I suppose there can be no objection to him exhibiting a diploma such as the Society of Science, London, describing him as a D.D.S., as a harmless form of advertisement, and it is impossible to take any proceedings.

Although he holds no degree, &c., is there anything to prevent him taking apprentices to learn dentistry?

Your kind reply in an early issue will oblige, as I shall feel sure your replies will be legally correct, and I wish to keep within the law, and avoid losing money. Please reply to,

G. COVERDALE, LTD.

The Dentists Act of 1878 was passed for the purpose of protecting the public from irregular and unqualified dental practitioners. It is no part of the duty of a journal devoted to medical sciences to point out to correspondents the methods by which the legal provisions of the Act can be circumvented and irregular practice indulged in without incurring such penalties as are at present attached to it. We publish this letter because it is a good sample of the tactics to which the public is likely to become a prey owing to the unsatisfactory conditions of the Medical, Dental, and also the Pharmacy Acts.

LOATHSOME BED-STUFFING.

To the Editors of THE LANCET.

SIRS,—My attention has been called to a letter appearing in your paper on "Loathsome Bed-stuffing," and I am pleased to note that Mr. W. T. Ellery has had the courage to speak up to his conviction. Would that other manufacturers did the same.

Writing from an outside point of view, I do not think the manufacturers are altogether to blame, but I consider the makers of the beds and mattresses are at fault; they buy a common class shoddy—in fact, made from what Mr. Ellery describes to be "the commonest and dirtiest rags obtainable"; they stuff the bedding with and label it with such words as "sanitary" or "purified." Such words as these are misleading and beguile the public into buying a cheap article, leading them to think it is perfectly hygienic.

I am, Sirs, yours faithfully,

Jan. 19th, 1907.

SANTAS.

THE TREATMENT OF "NEURALGIA."

To the Editors of THE LANCET.

SIRS,—In answer to your correspondent who in your issue of Jan. 5th asked for suggestions as to the treatment of a case of brachial neuralgia, I would point out that certain cases of a similar condition have been reported as being relieved by the application of the cataplasms kaolin of the United States Pharmacopoeia. This, according to the sixth edition of Shoemaker's "Materia Medica and Therapeutics," contains kaolin with glycerine as an excipient and boric acid, methyl salicylate, and oil of peppermint. It should be applied warm and confined with a bandage. I am, Sirs, yours faithfully,

Jan. 19th, 1907.

M.R.C.S.

HUMMING AND SINGING.

At a recent meeting of the Bedford board of guardians the question of accepting the resignation of the head nurse at the workhouse infirmary came up. We cannot gather from the report what led to the nurse sending in her resignation, but it is clear that there was no serious cause. In the course of the discussion, however, Mr. Pettit, a guardian, is reported as saying: "The matron won't have the nurse singing or humming about her work. Now, I maintain that if any one is sick or dull and has a nurse about always humming and with a cheerful countenance it is better than medicine (hear, hear), and for any one to say another shall not sing or hum is to take the sunshine out of one's life, while to reprimand her about that is very, very, very—well, I'll leave off there" (laughter).

Now with all due respect to Mr. Pettit we quite agree that a cheerful nurse is much better than a gloomy one, but we cannot hold that when one is sick and dull a nurse who sings and hums is desirable. Anything more aggravating we cannot conceive. Mr. Pettit must have derived his ideas from that class of novel which describes the joy of hearing a young girl's voice about the house.

singing blithely over her work. A well-known physician, now dead, gave a description of the proper way to prepare a salad, which we recommend to Mr. Pettit's attention. "The salad ought to be dressed by one of the daughters of the house, after she herself was dressed for dinner, singing, if not with voice, with her clean cool fingers, sharp silver knife, and wooden spoon." The Italics are our own, and so we say that the cheerful nurse should sing "not with voice."

JERRY-BUILT DWELLINGS.

At a recent inquest in the Battersea coroner's court a bricklayer, whose little child had perished in the fire which burnt down the house in which he lived, said: "The place was so jerry built that when my fires have not been alight smoke has come through from the next door neighbour's." A fireman who found the little girl's body gave evidence that the lath and plaster was only one and a quarter inches thick and that the flooring was five-eighths of an inch in thickness. Further evidence showed that the house was built about 30 or 40 years ago and was of a stamp common in the locality. Presumably modern building Acts would prevent such a structure being put up at the present time, but the risk of accidental fire taking place in houses which have stood for 40 years is not one which can be established so as to enable them to be closed. It is at least a matter for congratulation that the efforts made to protect the poor against the jerry-builder are bearing some fruit in the shape of new houses of a better type than the old ones which they are gradually replacing.

Liverpool.—The strength of the solution mentioned by our correspondent is correct but he omits to mention what "indicator" he employs. If the soda solution contained carbonate the results would be misleading if an indicator sensitive to CO₂ were used. To be quite certain the best plan is to check the soda solution by running in decinormal acid, using the same indicator as in the experiment.

R. W. J.—We regret the delay in answering our correspondent's question, but it was necessary that we should make an inquiry. We understand that no discourtesy whatever was intended. The hospital in question was almost certainly following a rule which exists in other hospitals that such certificates should be filled up by someone appointed by the institution.

M.D.—We agree that the advertisements are disgraceful and have made reference to them. We understand that there is difficulty in the police taking action in the matter.

Kemel.—We have not under our hand the references which our correspondent asks for. We will, however, attempt to obtain them.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynaecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopaedic (4 P.M.), St. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (3 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

TUESDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (2.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central square (9.30 A.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (2 P.M.), Ophthalmic, 215 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (30th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopaedic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Free (2 P.M.), Royal Orthopaedic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

THURSDAY (31st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West (1.30 P.M.), Gt. Northern Central (Gynaecological, 2.30 P.M.), London (2 P.M.), Gt. Northern Central (Throat, 9.30 A.M.), Samaritan (2.30 P.M.), Metropolitan (2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopaedic (9.30 A.M.), Royal Free (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynaecological, 2.30 P.M.).

FRIDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopaedic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Dental, 2 P.M.), Tottenham (2.30 P.M.).

SATURDAY (2nd).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (28th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M.: Discussion on Some Points in the Diagnosis and Treatment of Laryngeal Cancer (introduced by Sir Felix Semon, C.V.O.).

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (20, Hanover-square, W.).—7 P.M.: Council Meeting. 8 P.M.: Casual Communications.—Dr. W. L. H. Duckworth: A Note on the Dentition of Some New Guinea Skulls.—Mr. H. B. Gardner: Continuous Nasal Administration of Nitrous Oxide with Oxygen. Paper.—Mr. P. Turner: Tumours of the Superior Maxilla (illustrated with microscopic sections and specimens).

WEDNESDAY (30th).—BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY (20, Hanover-square, W.).—5.30 P.M.: Discussion on the Influence of Climate upon Gout, Rheumatism, and Rheumatoid Arthritis (introduced by Dr. G. W. Buckley, Buxton). Dr. J. Groves (Isle of Wight), Dr. H. Cumming (Torquay), Dr. P. Lewis (Folkestone), and others hope to take part in the discussion.

THURSDAY (31st).—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.).—8 P.M.: Card Specimens. 8.30 P.M.: Papers.—Mr. S. Snell: (1) A Case of Tubercle of the Eyeball in which the Opsonic Index was regularly taken; (2) A Family Tree of Nyctalopia.—Mr. A. Lawson: Two Cases of Streptococcal Infection of the Conjunctiva.—Mr. G. B. James: Some Notes on Stereoscopic Vision.

FRIDAY (1st).—SOCIETY OF ANAESTHETISTS (20, Hanover-square, W.).—8.30 P.M.: Paper.—Dr. L. Guthrie: Poisonous After-effects of Chloroform and of Ether.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (28th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Dr. G. Little: Clinique. (Skin.) 5.15 P.M.: Lecture.—Dr. A. J. Whiting: Traumatic Neurosis.

POST-GRADUATE COLLEGE (West London Hospital, Hammermith-road, W.).—12 noon: Pathological Demonstration.—Dr. G. C. Low. 2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: X Rays Operations. Mr. Dunn: Diseases of the Eye. 5 P.M.: Clinical Lecture.—Dr. Saunders.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—9.30 A.M.: Clinique.—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Cliniques: Medical Out-patient (Dr. Whilpham), Throat, Nose, and Ear (Mr. Carson); X Ray Demonstration (Dr. Pirie).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Sir D. Duckworth: Medicine. 3.15 P.M.: Mr. W. Turner: Surgery. 4 P.M.: Dr. St. Clair Thomson: Diseases of the Throat, Nose, and Ear. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat. Special Lecture.—Dr. St. Clair Thomson: Nasal Suppuration.

TUESDAY (29th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Dr. B. Cautley: Clinique. (Medical.) 5.15 P.M.: Lecture.—Mr. A. H. Cheate: The Surgical Anatomy of the Temporal Bone, its Bearings on Suppuration (with lantern slides).

POST-GRADUATE COLLEGE (West London Hospital, Hammermith-road, W.).—10 A.M.: Dr. Moullin: Gynaecological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: X Rays. Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Lecture.—Dr. Low: Ankylostomiasis.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—10.30 A.M.: Clinique.—Medical Out-patient (Dr. Auld). 2.30 P.M.: Surgical Operations (Mr. Carson); Cliniques: Gynaecological Out-patient (Dr. Giles), Surgical Out-patient (Mr. Edmunds). 4.30 P.M.: Lecture Demonstration.—Mr. Cooper: Electro-diagnosis.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. E. T. Hewlett: Medicine. 3.15 P.M.: Mr. Carless: Surgery. 4 P.M.: Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen's square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture.—Dr. Tooth, O.M.G.: Cerebral Palates of Infancy.

CHARING CROSS HOSPITAL.—4 P.M.: Demonstration.—Dr. Murray: (Medical) (Post-Graduate Course).

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—3 P.M.: Prof. A. O. Seward: Survivals from the Past in the Plant World. (Lecture 1.)

WEDNESDAY (30th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Mr. P. L. Daniel: Clinique. (Surgical.) 5.15 P.M.: Lecture.—Dr. G. L. Jones: Cervical Ribs and Muscular Atrophy of the hands (with lantern slides).

POST-GRADUATE COLLEGE (West London Hospital, Hammermith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: X Rays. Operations. Dr. Robinson: Diseases of Women. 5 P.M.: Lecture of Stricture of the Urethra.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—2.30 P.M.: Cliniques.—Dermatological (Dr. Meacham), Ophthalmological (Mr. Brooks), Medical Out-patient (Dr. Whippleham).
LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. R. Wells: Medicine. 3.30 P.M.: Mr. Cargill: Ophthalmology. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 11 A.M.: Eye. Special Lecture: Mr. Cargill: Iritis.
CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.O.).—5 P.M.: Demonstration.—Mr. Stuart-Low: Middle Ear and Labyrinth.

THURSDAY (31st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.O.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M.: Lecture.—Mr. L. Mummery: Rectal Hemorrhage, its Causation and Treatment.
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: X Rays. Operations. Mr. Dunn: Diseases of the Eye. 5 P.M.: Lecture.—Mr. Baldwin: Practical Medicine.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—2.30 P.M.: Gynecological Operations (Dr. Giles). Cliniques.—Medical (Dr. Whitting), Surgical Out-patient (Mr. Carson). 3 P.M.: Clinique.—Medical In-patient (Dr. Chappel). 4.30 P.M.: Lecture.—Dr. Macdonald: The Pathology of the Pneumonia.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. G. Rankin: Medicine. 3.15 P.M.: Sir W. Bennett: Surgery. 4 P.M.: Dr. H. Cooper: Radiography. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat. Special Lecture.—Dr. Rankin: Angina Pectoris.

ST. JOE'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.O.).—6 P.M.: Chesterfield Lecture.—Dr. M. Dockrell: Treatment (Constitutional and Local in all its Forms).

CHANDLER CROSS HOSPITAL.—4 P.M.: Mr. Boyd: Demonstration (Surgical). (Post-Graduate Course.)

HOSPITAL FOR SICK CHILDREN (St. Ormond-street, W.O.).—4 P.M.: Lecture.—Mr. Fairbank: Hip Disease.

FRIDAY (1st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.O.).—4 P.M.: Dr. D. Grant: Clinique. (Ear.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moulin: Gynecological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. 3.30 P.M.: X Rays. Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Lecture.—Mr. C. William: X Rays, Diagnosis and Treatment (with lantern slides).

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—9.30 A.M.: Clinique.—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Surgical Operations (Mr. Edmunds). Cliniques.—Medical Out-patient (Dr. Auld), Ophthalmological (Mr. Brooks). 3 P.M.: Clinique.—Medical In-patient (Dr. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. R. Bradford: Medicine. 3.15 P.M.: Mr. McGavin: Surgery. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queens-square, Bloomsbury, W.O.).—3.30 P.M.: Clinical Lecture.—Dr. Ferrier: Cases from the Wards.

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—9 P.M.: Sir A. E. Wright: The Methods of Combating the Bacteria of Disease in the Interior of the Organism.

SATURDAY (2nd).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: X Rays. Operations. Dr. Robinson: Diseases of Women.
LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed exclusively "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Manager."

return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1906, which was completed with the issue of Dec. 29th, were given in THE LANCET of Jan. 5th, 1907.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1906 are now ready. Bound in cloth, gilt lettered, price 18s., carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2s., by post 2s. 3d.

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan 24th, 1907.

Date.	Barometer reduced to Sea Level and 59° F.	Direction of Wind.	State of Sky.	Solar Radiation in Vacuum.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 18	30.740	E.	...	45	41	37	38	38	Foggy
" 19	30.620	E.	...	33	37	35	36	36	Foggy
" 21	30.640	E.	...	41	40	36	37	39	Overcast
" 21	30.560	S.W.	0.02	63	46	39	39	40	Overcast
" 22	30.344	S.E.	...	40	39	37	38	39	Overcast
" 23	30.204	E.	...	37	30	26	...	26	Overcast
" 24	30.530	E.	...	36	28	24	...	25	Cloudy

During the week marked copies of the following newspapers have been received Daily Chronicle, Liverpool Courier, Daily Telegraph Birmingham Post, Dublin Times, Hereford Times, Surrey Advertiser, Dublin Independent, Sheffield Independent, Westminster Gazette, Daily News, Cardiff Evening Express, Belfast Whig, Isle of Wight County Press, Times of India, Northampton Mercury, &c.

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A Post-Graduate Lecture

CONCERNING

PAIN IN THE GROIN,

Delivered at the London Clinical School of Medicine (Seamen's Hospital), on Jan. 24th, 1907.

By SIR WILLIAM BENNETT, K.C.V.O.,
F.R.C.S. ENG.,

CONSULTING SURGEON TO ST. GEORGE'S HOSPITAL; SENIOR SURGEON
TO THE SEAMEN'S HOSPITAL, ETC.

GENTLEMEN,—Several years ago, by one of those coincidences which are not rare in practice, I was consulted within 48 hours by three patients solely on account of pain in the fold of the groin, without swelling, tenderness, or any other objective symptom within the immediate neighbourhood. Pain in the groin was the trouble complained of and pain in the groin was the only thing from which relief was sought. The cases proved interesting; they had already been treated by others without benefit and they served the useful purpose of leading me to investigate rather more carefully than, I believe, I had hitherto done cases in which the only cause for seeking advice was pain in the groin. I have now got together sufficient memoranda of cases of the same type which have since come under my notice and it is with this series that I propose to deal to-day. The cases had the following points in common. 1. Pain continuous or intermittent in the fold of the groin without swelling, tenderness, or any other sign of lesion near the seat of pain. 2. An impression on the part of the patient that the cause of the pain was above or below the groin, as the case may have been, without being able to locate it. On analysis, however, in a considerable number of the cases this impression was very vague and the patients were obliged to admit that they could not tell whether the incidence of the pain was from above or from below. The primary impression, however, proved, as a rule, to be correct. In the majority of the cases movements of the hip-joint, however free, whether passive or voluntary, had no effect upon the pain, but in some the pain was either produced or increased by extreme flexion or by forced extension. In no case was there any restriction in the normal movements of the hip-joint so far as the patient was aware. The table gives a general idea of the cases so far as diagnosis was practicable:—

54 Cases in which Pain in the Fold of the Groin was the only Symptom complained of. (Recent injuries are not included.)

Incidence of pain apparently from above.	Cases.	Incidence of pain apparently from below.	Cases.
Prolapse of the ovary ...	1	Small omental femoral hernia ...	1
Omentalumbilical hernia ...	1	Small femoral hernial sac ...	1
Tumour of the pelvis ...	1	Obturator hernia ...	1
Malignant disease of the rectum ...	1	Saphenous varix ...	4
Stone in the bladder ...	1	Osteoma of the tibia ...	1
Stone in the ureter ...	3	Femoral atheroma ...	2
Stricture of the urethra ...	2	Osteo-arthritis ...	1
Movable kidney ...	1	Rider's sprain ...	4
Cyst of the testicle ...	2	Polypus of the rectum ...	2
Retained testicles ...	3	Piles ...	2
Intestinal diverticulum ...	1	Flat foot ...	1
Incomplete inguinal hernia ...	2	Popliteal sarcoma ...	1
Traumatic lumbar hernia ...	1	Old fractured tibia ...	2
Varicocele ...	3	Melanotic mole on the sole of the foot ...	1
Lateral curvature of the spine ...	2	Varicocele ...	2
Spinal abscess ...	1		
Undetermined ...	2		
Totals ...	23		25

The right groin was concerned more frequently than the left but I have no record of the exact proportion. The large majority of cases were in males; those in women did not patients who first attracted my stated, been variously treated

without benefit; in one the cause of the pain was found to be an irritated, completely retained (abdominal) testis, in another there was a small omental femoral hernia, and in a third a stone in the ureter accounted for the solitary symptom. Although in a few of the cases the diagnosis was not absolutely certain, in the large majority it was undeniably accurate. In the course of the investigation of the cases it was clear that pain localised in a curiously limited area could be produced by conditions sometimes so remote that I confess I should have previously been sceptical as to the possibility of the causation.

A point of some interest, having regard to subsequent experience, was elicited whilst investigating the cases—viz., that in a minority only of the patients who had previously been under treatment had any careful examination of the gluteal and perineal region or of the lower limb below the middle of the thigh been made, although in all cases abdominal examination seemed to have been thorough—a capital example of the predominance of abdominal considerations in the minds of practitioners at the present time. A considerable number of the patients had undergone “cures” at continental and other watering places frequently upon the advice of friends and on the chance apparently of gout or rheumatism being at the bottom of their troubles. It is obviously in the time at our disposal as impossible as it is unnecessary to deal with all the cases tabulated. In some the relation of the groin pain to its causative disease is obvious; of the remainder, it is only possible to call your attention to the most interesting.

CASES IN WHICH THE INCIDENCE OF THE PAIN SEEMED TO THE PATIENT TO BE FROM ABOVE.

Small umbilical hernia.—A man, 33 years old, suffered from continual discomfort in the right groin, which sometimes during defecation became acute, and was always intensified when the arms were extended about the head and in hyper-extension of the lower limbs. Nothing abnormal could be felt at the seat of pain and a careful search in all directions failed to detect anything unnatural excepting a minute omental protrusion by the side of the umbilicus. No connexion could at the time of this discovery be made out between the little hernia and the pain, but subsequently the patient became convinced in his own mind that the two were associated and the protruding lump was removed. No further pain in the groin was felt.

The case of malignant disease of the rectum was very instructive as no suspicion of its existence had previously arisen. The patient was a man, about 50 years of age, who complained merely of a continual aching pain in the right groin, which was always to some extent increased in the standing position; there was no tenderness or other sign of disease; the patient seemed in perfect health. A question about the action of his bowels led him to say that everything was natural but that occasionally he had noticed that the groin pain became rather acute during defecation. A rectal examination revealed as high as the finger tip could reach a small hard nodule the touching of which increased the pain in the groin.

Stone of the bladder.—The patient was a man advanced in years, singularly hale and well preserved. The attacks of pain in the groin were acute and intermittent, the intervals between the attacks varying from hours to days; the left groin was concerned as a rule, but sometimes the right was affected; the attacks generally occurred upon rising from bed in the morning, and at times were so acute that he had to lie down again until they passed off. Nothing abnormal could be discovered. The urine was normal and the vesical functions were natural. Finally, an attack of pain of the usual kind was followed by acute retention of urine from impaction of a calculus in the urethra. This was passed spontaneously before surgical aid was forthcoming. No further attacks of the pain occurred. It is possible, of course, that the stone had previously been lying in the ureter, but the bladder seemed to be its more likely situation.

Stone in the ureter.—In these cases the left ureter was concerned in two, and the right in one. All the stones were diagnosed and located by the x rays. Three stones were present in one case; in the others the stone was single. The only symptoms complained of were continual pain and discomfort in the corresponding groin. Nothing abnormal could be seen or felt until the x rays showed the stones. There were no urinary symptoms of any kind. In two cases the stones were small and were finally passed, after which all pain disappeared. The third case was the following.

A man about 40 years old had suffered for years from a more

or less constant pain in the right groin; it was never acute and rarely entirely absent. As a rule, it was worse in the morning on leaving his bed and again towards evening. The patient thought it was a little increased when the bladder was full but he was rather vague on the subject. No objective signs of lesion could be made out. The bladder and bowel functions were normal excepting a rather hesitating act of micturition which he said was natural to him. The x rays showed a stone of considerable size at the extreme vesical end of the ureter. Removal of this by suprapubic cystotomy entirely relieved the groin pain. Apart from the question now under discussion these cases are particularly useful in showing the value of the x rays in vague pain and in demonstrating how greatly the actual symptoms sometimes caused by stone in the ureter differ from those described in books.

Stricture of the urethra.—In neither of these cases was stricture suspected. Pain in the groin was the only trouble. The most striking case was as follows. A man, aged 30 years, had suffered from continual aching pain in both groins for nearly two years. He had suffered from slight gonorrhoea when very young which was cured without complications. His symptoms had been regarded as rheumatic, the usual remedies having been used without benefit. In passing a sound in order to eliminate the remote possibility of a vesical cause for the pain a stricture was found in the usual situation which admitted a No. 7 bougie with slight difficulty. During the passage of the bougie through the stricture the pain in the groins became acute, especially on the left side. This, of course, gave the clue to the cause of the pain. Full dilatation of the stricture was followed by complete disappearance of the groin pain which had shown no sign of reappearance a year later. On passing a bougie through the stricture after an interval of three months from the time of full dilatation the pain in the left groin was temporarily reproduced, subsiding in a few hours.

In the cases of *retained testicles* the cause of the pain was self-evident when the condition of the testicles had been ascertained. It was, however, a remarkable fact that in two of the cases in which both testicles were in the abdomen and entirely impalpable, the scrotum being rudimentary, neither patient (both were grown men, one being married) had the least idea that he was the subject of any abnormality, a misapprehension which might have been accounted for by the abundantly developed penis which was present in each instance.

The *tumour of the pelvis* was discovered by the x rays. The pain was of the type under notice, but was somewhat increased by hyper-extension of the thigh. Nothing abnormal was perceptible to the touch. The growth was somewhat pedunculated and situated at the junction of the horizontal ramus of the pubic bone with the ilium on the right side. When discovered it had the appearance of an osteoma but subsequent events showed that it was sarcomatous.

The case in which a *Meckel's diverticulum* accounted for the pain was very interesting. The symptom which led to advice being sought was merely pain in the right groin which at times was acute and was always exaggerated by exercise. Nothing abnormal could be detected by the x rays or by any other means. Upon subsequent careful questioning it was, however, elicited that when the pain was excessive the patient invariably felt "blown up" and the abdomen became hard, walking being then only possible in a rather bent attitude. That this statement was correct was verified by observation. Constipation habitually existed but seemed to have no relation to the pain. (The only other case in the series in which somewhat similar symptoms occurred is the next following.) I thought in the present instance that some adhesions or, perhaps, a small omental hernia in the inguinal canal might have caused the trouble. The pain increased so much that radical measures became necessary with the result that a Meckel's diverticulum was found adherent by its apex and providing all the conditions for potential "strangulation by band"; it was divided and the symptom ceased.

The symptom again in the two cases of *irreducible incomplete inguinal hernia* was merely pain in the fold of the groin; in one, occurring in a man, no other symptom could be detected on palpation, but coughing caused a distinct increase in the pain, as did also lying on the opposite side of the body; when the pain was at its worst some abdominal distension was said to occur but it was not verified by observation. The symptom became so distressing that the patient begged for something to be done which might give relief. The lower end of the inguinal canal was therefore

internal ring was found to be blocked by a mass which proved to be an omental hernia. In the woman the symptom was less severe. An examination made whilst the patient was lying down revealed nothing abnormal but in the standing position there was sufficient fulness over the region of the canal to show that abnormality existed. She did not think it worth while to submit to operation.

The *spinal abscess* was interesting because it was one of those unassociated with spinal pain, tenderness, or rigidity. The only symptom complained of was pain in the groin. The movements of the hip were quite free but forcible extension of the thigh not only increased the pain in the groin but caused pain over the area supplied by the anterior crural nerve about the front aspect of the thigh. These symptoms, with much exaggerated knee-jerks, made the case pretty certainly one of very early psoas abscess, a diagnosis which was subsequently confirmed.

Two cases were quite *undiagnosable* so far as I am concerned, one being a very remarkable one. A healthy man approaching 50 years of age contracted what was at first thought to be influenza, the effects of which passed off in three or four days. Then, after an interval of 48 hours, rigors and high fever were followed by acute cystitis of a hemorrhagic type. The necessary catheterisation was followed by acute epididymitis. Ultimately, after some weeks, he made what seemed to be a perfect recovery, but upon getting about his affairs as usual for three weeks or thereabouts he began to suffer from a deep-seated feeling of pain in the fold of the groin on the opposite side to that of the testicle which had been involved. There was no tenderness or other abnormality, only this perpetual feeling of deep pain. The bladder and rectum were quite normal; the seminal vesicles were not tender or large. This pain persisted for about 18 months without much alteration, there having been during that time three or four nocturnal emissions which consisted apparently of little more than blood in considerable amount. At the end of the time mentioned the pain began to increase without any other abnormal development until it became intolerable; nothing gave relief. Finally, the patient being in the country decided to come to London to see a surgeon and left his house in acute pain to drive to the station, a distance of four miles; before half the distance had been traversed the pain suddenly disappeared, leaving neither tenderness nor discomfort of any kind, and I understand that although five months have elapsed there has been no sign of recurrence. I am bound to admit that I do not know what the lesion was nor do I in any way understand the case.

CASES IN WHICH THE INCIDENCE OF THE PAIN SEEMED TO BE FROM BELOW.

The two cases in which the pain in the groin appeared to be due to some abnormal condition in the crural canal occurred in women. In the first, in which the fault proved to be a very small irreducible omental tag, no symptom other than pain in the groin fold could be elicited, but this was increased by coughing although no unnatural impulse was noticeable, and by forcible extension of the thigh. In the other case the pain was not increased by coughing or hyper-extension, but in the erect position there was a very slight fulness over the saphenial end of the canal which was nonexistent on the opposite side. It was so slight that in ordinary circumstances it would probably have escaped notice, but being at the time much on the alert in cases of this kind it was sufficiently pronounced. The condition was found to be a minute empty hernial sac, having a very small accumulation of fluid in the sac as the day went on.

In another case I diagnosed an *obturator hernia* but no opportunity of verifying the diagnosis was offered. The patient was a woman who complained of pain immediately below Poupart's ligament occurring only occasionally, but when it occurred it was very acute. Nothing abnormal could be seen or felt nor was there any tenderness. On careful inquiry it transpired that coughing increased the pain and on occasions there had been a feeling of nausea which nearly ended in vomiting; moreover, if the pain continued for some hours it seemed to extend down the inner side of the thigh to the knee and it always disappeared suddenly, complete comfort immediately following. It had hitherto been thought to be a neurotic trouble, but I have no doubt that this impression was at all events wrong.

In the cases of groin pain in which marked *saphenous varix* was present the cause was obvious, i

thing being that the cause did not seem to have been previously recognised, probably, I fancy, because, judging from what the patients said, the only examination made had been in the recumbent position when, of course, the varices were not obtrusive. In the standing position they were very obvious. Three of the cases were operated upon with complete relief.

The *osteoma of the tibia* was a remarkable case. A man, aged 25 years, who came over from South Africa during the Boer War, complained of frequent attacks of extremely acute pain in the left groin rather to the inner side. The attacks appeared to occur only when the limb was being flexed whilst it was rotated outwards as, for an example, when he crossed the limb over the opposite thigh; on a few occasions it had occurred during some action, such as kicking; once it had been produced in a most acute form by accidentally knocking the leg against the step of a cab. In the groin there was absolutely nothing abnormal to be detected; there was no "click" or other sign of mechanical trouble in the hip-joint. He described the pain as giving him an impression of being "hit from below." Whilst examining the lower part of the leg for a possible, though unlikely, cause he cried out that I had started the pain, which was obvious from the expression of suffering in his face; the pain rapidly passed off and was reproduced by manipulation of the same part. Ultimately I found a small hard tumour which the x rays showed to be very spiky in shape (*osteoma*?) springing from the inner side of the tibia about four inches from its lower end; pressure upon this in certain positions of the limb always produced the pain. I suppose some filament of the saphenous nerve must have been involved. Arrangements were made for the removal of the offending lump, but something led to the patient postponing operation and I never saw him again.

In connexion with the above case the following is worthy of mention, although the pain was located over the knee, because it not only shows how remote the cause of a local pain may be, but how a well-recognised condition may be mimicked in a most unlikely way. A well-known London medical man had for some time suffered from sudden attacks of pain which he attributed to recurrent displacement of a semilunar cartilage in the knee. The attacks seized him suddenly, as a rule, whilst turning quickly round in walking or when walking upon uneven or sloping ground. So acute were the attacks that they "stopped" him for a few minutes and then rapidly disappeared. No effusion into the joint had been noticed and no positive mechanical "locking" had happened. Such arrest in the movements of the joint as had occurred seemed to be due solely to the acuteness of the pain. So crippling had the symptoms become that he consulted me with a view to consider the desirability of having the defective cartilage removed. Although the history related would fairly fit certain cases of knee-joint derangement I was rather sceptical about the existence of this because the knee appeared to be altogether normal, showing none of the signs of laxity or "wobbling" which, so far as I know, is always present in cases of recurrent attacks of derangement. Some further inquiries elicited the fact that the attacks of pain occurred only whilst boots or shoes were being worn—rather a suggestive fact seeing the frequency with which the attacks occurred. Following upon this an examination of the foot revealed a sensitive corn, pressure upon which produced an attack of pain like those described. Modification of boot pressure resulted in a disappearance of the deceptive symptoms of derangement of the knee-joint. This is an admirable case to demonstrate the soundness of what I am very fond of teaching—viz., that the true attitude of the diagnostician is that of a "detective," which is essentially one of suspicion even when things seem obvious. Had I been less wary and had I failed to appreciate the bearing of the evidence of the boot, which was, of course, the clue to the case, it is not unlikely that I might have seriously considered the question of exploration of the knee-joint. It would be exceedingly interesting if it were possible to ascertain the number of joints and other cavities which have been explored in search of faults of which they are entirely innocent.

A further excellent example of a remote cause for pain in the groin is afforded by the case of a *melanotic mole* in the sole of the foot. The patient, a woman of an admitted highly strung and neurotic type, complained of repeated attacks of acute pain in the groin whilst walking which occurred with distressing frequency. No explanation could be advanced for the oncoming of these attacks beyond the

belief of the patient that she was gouty which had led her to seek relief at watering places without success. As to the reality of the pain there was no doubt it had none of the characteristics of "neurotic" pain as commonly met with. It always occurred when stepping in a certain way but she had no knowledge of any tender spot on the foot. The pain, however, which was felt upon the "front of the hip" could be avoided by walking as much as possible on the outer side of the foot. Upon examination there was found at the inner side of the sole a flat black mole of the size of a threepenny-piece, deep pressure upon which produced a pain in the groin similar to that sometimes felt in walking. Removal of the mole was followed by entire disappearance of the pain complained of.

Of a similar type was the case in which pain in the groin arose in connexion with *flat foot*. The patient was a boy 14 years old, and although the existence of the valgus was known it had received no attention as it had, so far as those concerned could tell, given rise to no inconvenience. The provision of an appropriate brace and the use of rational exercise rapidly improved the condition of the foot and were followed by the disappearance of the pain in the groin.

Of the two cases of *old fracture of the tibia*, one was the result of a gun-shot wound, the other being an oblique fracture below the middle of the tibia, the upper end of the lower fragment projecting inwards in a very exaggerated way. The pain in the groin in each case occurred when rapid flexion of the knee or hip took place; the same movement slowly and carefully performed caused no pain. In neither case did the patient connect the pain in any way with the old injury. The long saphenous nerve was, I suppose, in some way involved in the parts about the breaks. The removal of an irregular piece of bone which projected under the skin in the first case was followed by disappearance of the groin pain; in the other instance when the patient realised that the pain was probably associated with the old fracture he did not think it of sufficient importance to submit to any operation for its relief.

The cases of *polypus of the rectum* and of *piles* may be taken together. In each case the patient was led to seek advice solely on account of pain in the groin, a fact all the more remarkable because those who were suffering from piles knew of their existence but attached no importance to them, and, indeed, would not have mentioned their existence had they not been questioned on the subject; one patient had, in fact, been referred to me by a practitioner on account of the groin pain, no mention having been made of the existence of piles to him. The groin pain in all these cases was localised at a spot above the saphenous opening; it became worse as the day advanced and was increased by acute flexion of the thigh upon the abdomen. In the hæmorrhoidal cases the cause of the pain seemed obvious; in the others the polypi were discovered only upon examining the rectum on the remote chance of finding a reason for the trouble. In both of these cases, however, rectal discomfort had been felt and in one bleeding had occurred, but the symptoms were not thought of sufficient importance to merit notice. One case of each kind was operated upon with entire success; in the other cases the patients did not think the matter of sufficient importance to submit to the inconvenience of operation.

In the cases of *varicocele*, of which there were five, it was curious that in three the pain seemed to the patient to come from above, whilst in the remaining two it seemed to originate below the level of the pain area. Those in which the pain seemed to originate above were comparatively unnoticeable and were probably of the kind I have described elsewhere in which the most marked dilatation was high up in the inguinal canal.

The two cases of *testicular cysts* (encysted hydrocele of the testicle) are useful in showing how an entirely unsuspected congenital condition may cause trouble without attracting attention to the part at fault. These cysts situated close to the top of the testicle are very common, generally bilateral and quite painless unless by chance they receive some slight injury when they invariably cause discomfort, usually in the groin, which is often very persistent. In each of the two cases included in the table a slight injury to the scrotum had happened years before and had been forgotten; the cysts were of the size of a small cherry, tender on manipulation, after which the pain in the groin was much increased temporarily; both patients were unconscious of the existence of the cysts. In passing it is worth noting that the pain complained of in varicocele is not infrequently due to one of these cysts. I saw within the past 24 hours a case of apparently painful varicocele in which the discomfort was

clearly due to a cyst of this kind on the opposite side; the importance of such a condition in relation to operations for varicocele is obvious.

Although the remaining cases for the most part speak for themselves, some interesting point was associated with each, but your patience and the time at my disposal are alike exhausted.

Collectively this series is, I hope, instructive enough to warrant my having called your attention to it; at all events, it seems to me to justify the following deductions: 1. That pain in the groin as an isolated symptom may arise from causes either so remote or unlikely that their existence would at first sight seem hardly worth consideration. 2. That no examination in a case of pain in the groin can be effective unless it is made in the erect as well as in the horizontal position of the patient. 3. That distinctly localised pain in the presence of obvious organic disease of which the patient is aware may so assert itself as to lead to the gross condition being considered of little or no importance. 4. That the belief in a "functional" or "psychic" pain would be greatly diminished if in all cases of apparently unexplainable pain a more comprehensive search in a detective spirit were made for a cause than is sometimes done.

IDIOPATHIC CYANOSIS DUE TO SULPH-HÆMOGLOBINÆMIA:

(ENTEROGENOUS CYANOSIS).¹

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AND

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FOR our knowledge of the peculiar forms of cyanosis with which this paper deals we are indebted almost entirely to the work of a few observers in Holland. The first case was recorded by Stokvis of Rotterdam in 1902, under the title of "Antotoxic Enterogenous Cyanosis (Methæmoglobinæmia?)." He showed the presence of the methæmoglobin spectrum-band in the blood. He also found that the urine contained a substance which gave a red colour with hydrochloric and other acids and transformed oxyhæmoglobin into methæmoglobin. He referred the condition to absorption of a toxic substance, produced by putrefactive changes in the intestines. Talma of Utrecht in the same year reported three cases and showed that the methæmoglobin was intracorpuscular and not, as in cases of drug-poisoning, in the blood plasma. Van der Bergh of Rotterdam, in 1905, showed that Stokvis's substance in the urine was nitrites and a decomposition product of normal urine. He showed also that the band in his own patient's blood was not that of methæmoglobin, but corresponded with that of sulph-hæmoglobin. He referred to a simple means of distinguishing readily between the two by the addition to the blood of sulphide of ammonium.² This caused the immediate disappearance of the methæmoglobin band but not that of sulph-hæmoglobin. He concluded that the condition was due to H₂S absorbed from the intestines, but he was unable to show the presence of H₂S in the blood. He also isolated H₂S-forming organisms from the stools, but attached no value to it, as this could be easily done with normal stools. In the same paper he also recorded a case of methæmoglobinæmia and noted that this condition cleared up in from 24 to 48 hours upon a milk diet but returned in four hours after an ordinary meal. In his next paper he reported that after an operation for stricture of the rectum the patient who was the subject of the first case recovered completely. He also briefly described three other cases of sulph-hæmoglobinæmia, all associated with obstinate constipation and recovering completely when the constipation was cured. In two cases of methæmoglobinæmia also mentioned in the same paper he proved the presence of nitrites in the patient's blood. Douglas and Gibson in July, 1906, recorded a case of methæmoglobinæmia from whose blood they stated that they isolated the bacillus coli communis, and they entitled their paper "Microbic Cyanosis."

The following is the account of the present case. A female, aged 37 years, unmarried, was admitted into St. Bartholomew's Hospital for debility and cyanosis. Although extremely feeble she was able to walk into the ward. The most striking feature in the case was the colour of the skin, which was of a leaden hue, resembling in tint that of silver staining, which made her look when asleep as if she was moribund. The cyanosis was universal, well marked in the face, cheeks, lips, ears, and nose, and under the finger- and toe-nails. The tongue, too, showed the purple colour well. In all parts it was easy to demonstrate that the colour was due to the blood and not to the pigmentation, as pressure with the finger or by bending the nails showed the skin when emptied of blood to be of the normal yellow hue. The fingers were not clubbed. The pulse was regular, feeble, not rapid, and of low tension. The respirations were 20, regular, and quiet. Physical examination revealed nothing. The cardiac dulness was normal. There were no cardiac murmurs. The lungs expanded well, were of normal size, and neither they nor the mediastinum presented any abnormal physical signs. The abdomen was normal and the spleen was not enlarged. The urine had a specific gravity of 1015, contained neither albumin nor sugar, and was of the ordinary colour. The appetite was fair and digestion good; the bowels were habitually constipated, but were kept open daily with medicine. The patient slept well. The only objective sign about the patient, except her feebleness, was the cyanosis, and nothing had been discovered so far which would explain it. There was no sign of congenital morbus cordis or of emphysema. The absence of dyspnoea put out of court any pulmonary disease or mediastinal pressure.

A preliminary examination of the blood in the wards showed the number of red cells to be 4,800,000 per cubic millimetre, of the white 3800, while the hæmoglobin was 90 per cent. The case was therefore not one of polycythæmia, which was on general grounds unlikely because of the patient's pallor. To confirm the results another examination was made a few days later in the pathological laboratory by Dr. F. W. Andrewes, who reported the red blood cells to number 5,050,000 per cubic millimetre, the white cells 3400, and the hæmoglobin percentage to be 115. The differential count was normal—viz., polymorphonuclears 72 per cent., lymphocytes 24 per cent., large mononuclears 4 per cent., and eosinophiles none. The red cells were normal in size and shape and there were no nucleated red cells to be seen.

For a spectroscopic examination the patient was taken into the physiological laboratory and there, with the help of a strong arc light, a spectrum was obtained by Dr. J. S. Edkins through the web of the thumb. This showed what appeared to be the spectrum of methæmoglobin. Subsequent examination by Dr. W. Langdon Brown confirmed this, and the spectrum was easily demonstrated in the blood placed in a microscope cell, so as to obtain films of varying thickness, the two oxyhæmoglobin bands in the green being easily seen in thin films and the band in the red being best seen in a thicker one. By regulating the thickness of the film the three bands could be easily demonstrated in the same specimen.

The presence of methæmoglobin in the blood led to a more careful examination of the urine. Its colour, as stated, was not abnormal, and Dr. Hurtle and Dr. Garrod pronounced the methæmoglobin spectrum completely absent from it. Some blood was now drawn from the patient and centrifuged, so as to separate the serum and cells. Spectroscopically the serum showed no trace of methæmoglobin bands, but they were distinct in the portion containing the red cells. So far, then, the case appeared to be one of intracorpuscular methæmoglobinæmia. Most of the cases of methæmoglobinæmia recorded have occurred as the result of the action of certain drugs—chlorate of potassium, nitrite of amyl, permanganate of potassium, phenacetin, antipyrin, sulphonal, veronal, trional, and others. Consequently the sisters and nurses were ordered to watch the patient and her friends closely, but nothing was discovered. The patient herself denied absolutely that she had ever taken any medicines except what the medical man had prescribed, and the medical attendant stated that except for occasional doses of bromide and iodide he had given nothing for a long time more than a tonic of iron with arsenic. As the patient lived in an isolated part of the country, from which the nearest druggist's shop was some miles away, drugs must have been sent by post if they were to reach her privately. No evidence, however, of the

¹ A paper read at a meeting of the Royal Medical and Chirurgical Society on Jan. 22nd, 1907.

² This is an old test and is mentioned by MacMunn.

frequent receipt of letters or packets by the patient could be obtained either from the family or from the postman. So that all evidence of the obtaining and taking of drugs was lacking. During her stay in the hospital she certainly had no such drugs and her condition after some weeks was not materially changed. Drugs were therefore dismissed as the cause of the condition.

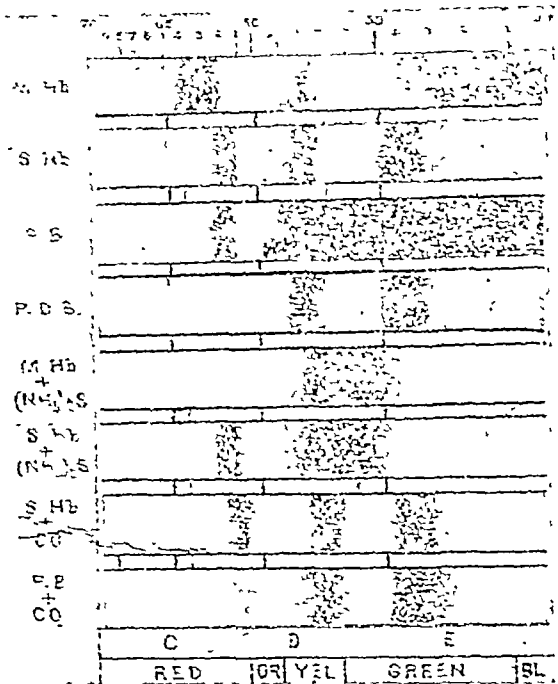
The following history of the case was furnished by Mr. H. F. Steele of Stoke-Ferry:—"The patient has been an invalid for ten years or more. She was very neurotic and suffered chiefly from neuralgia and sleeplessness, with dyspepsia and constipation, and, as a consequence, she became anemic. Her first illness began in July, 1904, when she had a curious nervous attack with delirium and severe pain in the left side of the chest. Previously to this attack she had had bromide of potassium and chloral (20 grains of each) occasionally at night to relieve the pain in the chest and secure sleep. The attack came on suddenly without any apparent cause. There were no rise of temperature and no paralysis. She used to see objects (animals, &c.) in the room, and was at times semi-comatose, though she could always be roused. The attack was not alcoholic. She had for a time hypodermic injections of morphine frequently to give sleep, but after a time the morphine lost effect and was given up. She was ill for about two months and then gradually improved. When convalescent from this attack she was in much the same condition of health as before it. The present illness was of a different character altogether, and commenced in August, 1905, when she became cyanosed gradually and lost strength; the cyanosis at first was observed only during exertion, but gradually became persistent. The weakness slowly increased until she was quite unable to exert herself at all. She became an in-patient for a time in the Lynn Hospital, where the diagnosis, she says, was made of thoracic aneurysm. No drugs appeared to do any permanent good. Iron in various forms, as well as iodides, bromides, and arsenic, were all tried at different times. The only combination that seemed to benefit her at all was iron, digitalis, and strychnine."

In October, 1905, Dr. West saw her when happening to be making a visit in Norfolk. The cyanosis was considerable. She was so feeble and ill that it seemed unwise to disturb her by much examination, for she looked almost as if moribund. The visit was a casual and hurried one and no diagnosis could be made. She looked as if she would die shortly, and when Mr. Steele wrote a year later saying that she was still in exactly the same condition the case was evidently one of great interest and she was readily admitted into the hospital.

Dr. Wood Clarke now undertook to make some further examination of the urine and blood and succeeded in showing that what appeared to be the spectrum of methæmoglobin was not that of met- but of sulph-hæmoglobin, and that the case, therefore, was one of intracorpuscular sulph-hæmoglobinæmia. The following is Dr. Wood Clarke's account of his investigations. The laboratory investigations were directed to the blood, the urine, and the faeces. As cyanosis had been described in connexion with two different forms of hæmoglobin—viz., met- and sulph-hæmoglobin—a preliminary study of them seemed desirable before starting upon investigations into the present case. Accordingly a preparation of methæmoglobin was made by treating a few cubic centimetres of defibrinated ox-blood with potassium ferricyanide, and others of sulph-hæmoglobin by bubbling H_2S through portions of blood for a time or by adding a weak, watery solution of H_2S directly to them. Accurate spectroscopic examination of each was now made. Each showed a dark band in the red, but their positions were different. The methæmoglobin band extended from $\lambda 620$ to $\lambda 645$ on the scale, shading off to $\lambda 615$ on the one side to $\lambda 650$ on the other. The sulph-hæmoglobin band extended from $\lambda 610$ to $\lambda 625$ and in concentrated solution to $\lambda 630$. On Dec. 22nd, and again on the 29th, specimens of the patient's blood were obtained—on the first day from the finger-tip and on the second from a vein in the arm. A few drops were diluted with water and filtered. Each gave a definite band in the red, ranging in the one case from $\lambda 613$ to $\lambda 629$, in the other from $\lambda 612$ to $\lambda 628$. In both cases the band was faint, so that it was necessary to use a solution of such strength that the oxyhæmoglobin bands were blotted out. This made it clear that

the patient's blood contained not met- but sulph-hæmoglobin. This was confirmed by the test referred to by van der Bergh, which consists in the addition to the blood of a little ammonium sulphide; in the case of methæmoglobin the band in the red disappeared immediately, while with sulph-hæmoglobin it persisted, and was indeed somewhat intensified; in both cases the oxyhæmoglobin bands slowly merged to form the band of reduced hæmoglobin.

During the course of the investigation it was noticed that the passage of CO through sulph-hæmoglobin solutions, provided the gas was free from acids, caused a definite change in the spectrum, all the bands being shifted slightly towards the violet end of the spectrum. The two oxyhæmoglobin bands are replaced by those of carbon-monoxide



MHb, Methæmoglobin. SHb, Sulph-hæmoglobin. P.B., Patient's blood. P.D.B., Patient's dilute blood.

hæmoglobin, while the band in the red changed from $\lambda 610$ — $\lambda 625$ to $\lambda 605$ — $\lambda 620$. This test was applied to the patient's blood and the typical change in the bands was noted. The passage of CO through methæmoglobin causes no change in the spectrum. Further investigations upon this property of sulph hæmoglobin are at present being carried on in this laboratory.

An attempt was now made to ascertain if there were any free H_2S in the patient's blood. For this purpose a modification of the method used by van der Bergh was employed. Two wash-bottles were so connected with a suction pump that air could be passed through the solution they contained in series. In the first bottle was placed the solution to be tested for H_2S , and in the second some distilled water containing ammonia. After air had been drawn through the solution for ten minutes the ammonia solution was tested with sodium nitro-prusside. By this means as little as 0.0002 gramme of H_2S could be detected with ease from a watery solution, and it was found that in the ten minutes all the H_2S in the water in the first bottle had been carried over into the second. Five cubic centimetres of ox-blood were now taken; to it was added 0.0002 gramme of H_2S and the test repeated. The presence of free H_2S was easily proved, but the spectroscope showed no sulph hæmoglobin band. To another five cubic centimetres of blood a much stronger solution of H_2S was added; the blood then showed the typical band and continued to do so after all free H_2S had been drawn off. This band was still distinct after the blood had been exposed (a) for 18 hours to the air and (b) for half an hour to CO. Some blood was now treated with H_2S and kept for some hours in a stoppered bottle. From this no H_2S could be obtained. Lastly, it was found that on the addition of a strong solution of H_2S to the blood the

sulph-hæmoglobin band did not appear immediately but only after standing for five minutes. The observations show that the combination of H_2S with hæmoglobin occurs rather slowly, that before the combination has taken place the free H_2S can be removed by a stream of air, but not afterwards. This test tried on the patient's blood gave negative results, from which it may be inferred that if there was any free H_2S at all in the blood, it must have been in extremely minute quantities.

It now seemed desirable to obtain some idea as to the quantity of H_2S required in order to form sulph-hæmoglobin in sufficient quantity to be detected by the spectroscope. A fresh aqueous solution of H_2S was therefore titrated and found to contain 2.856 grammes per litre; 10 cubic centimetres of this solution were repeatedly diluted by halving and replacing with water until a series of solutions was obtained, which represented from 0.01428 to 0.0003 gramme per five cubic centimetres. Ten cubic centimetres of blood were added to each tube, the mixture shaken and divided into two equal portions; one set of tubes was placed in the incubator at $37^\circ C.$ and the other left in the cold room. After 24 hours the specimens of blood were examined with the spectroscope. It was then found that in the blood left in the cold room the band was not visible in the tubes of the fifth dilution, which represented 0.0009 H_2S , while it was clear, though faint, up to the last dilution in the tubes which had been placed in the incubator, representing a dilution of $\frac{1}{10}$ or less than 0.00003 H_2S in the 10 cubic centimetres of mixed blood and water. From these experiments it will be seen that the amount of H_2S required to cause an appreciable change in the blood pigment at body temperature is far below that which can be detected by any chemical means, and consequently that it is no wonder it cannot be demonstrated in the patient's blood.

Blood culture.—Blood was taken from a vein in the patient's arm by Mr. R. C. Emslie on Dec. 29th; with this various media were inoculated but no organism grew.

The urine.—The urine was carefully examined on several occasions. There was never either albumin or sugar present. Indol, by the colorimetric methods of Jaffe and Bouma, was decreased. Ferric chloride gave no reaction. The urine was acid when passed and gave a negative reaction with HCl . Nitrites were present as an extremely faint trace when the urine was acid and in considerable amounts when alkaline. The ethereal sulphates were greatly reduced below the normal, the ratio between these and the mineral sulphates on three separate days being 1:24, 1:35, and 1:26. The total sulphates were normal in quantity. An amyl alcohol extract after the addition of acetic acid showed that there was no increase of hæmatoporphyrin and only the faintest possible band of urobilin. No blood pigments were present. Benzoylation of a litre of fresh urine gave no precipitate.

The stools.—On Dec. 23rd the patient was placed on the Adolf Schmidt test-diet for examination of the stools. At this time the constipation suddenly ceased, and under the influence of magnesium sulphate the stools became copious and watery. It seemed that during this period the cyanosis became less marked. The stool obtained, which probably also contained urine, was large and fluid, and had a decidedly offensive odour. It was slightly alkaline in reaction. On being rubbed in a mortar and examined on a black plate a few small shreds of connective tissue and mucus were found. Meat digestion was complete. On treating with Lugol's solution no undigested starch granules were to be found. The addition of 30 per cent. acetic acid and heat demonstrated that there was no excess of fat in the stools. No fatty acids were seen. A few grammes of stool placed in a Straßburger fermentation apparatus and left in an incubator at $37^\circ C.$ did not develop an appreciable amount of gas in 48 hours. At the end of this time the reaction was about as strongly alkaline as at the beginning. Testing the stool after 48 hours with ammonia and sodium nitro-prusside only a slight pink colour was obtained, while the water in the collecting tube of the apparatus was quite free from H_2S . A second specimen of stools obtained on Jan. 5th was soft, dark green in colour, and of unpleasant odour. Microscopic examination showed the same findings as before, except for a few undigested starch granules. A faint trace of H_2S was proved after fermentation.

In the attempt to determine whether there were an increase in the sulphuretted-hydrogen-forming organisms in the

patient's intestines the following method was used at the suggestion of Dr. Andrewes and under his direction. One gramme of solid stool was weighed in a sterile watch glass, thoroughly ground up in a sterile mortar, and washed into a flask containing 99 cubic centimetres of sterile water. This was then diluted decimally through ten flasks and one cubic centimetre of the fluid in each was added to a bouillon tube containing 0.5 per cent. lead acetate. The cultures were grown at $37^\circ C.$ for 48 hours anaerobically and 48 hours aerobically. With one patient's stool blackening from lead sulphur appeared up to a dilution of 1:10,000,000—i.e., one cubic centimetre of the fluid contained 0.000001 gramme of stool—while with four controls taken from other patients on the same diet and drugs it varied from 1:10,000 to 1:1,000,000,000. The experiments were too few to be conclusive, but they suggest that in this patient there was no increase of H_2S -forming organisms in the intestines at the time of the examination.

The accompanying table gives an analysis of 13 cases, eight of methæmoglobinæmia and five of sulph-hæmoglobinæmia. In the first four cases recorded of methæmoglobinæmia the exact nature of the condition is a little uncertain, as at that time the distinction between met- and sulph-hæmoglobinæmia was not recognised. Taking the two groups together, we find that eight of the patients were men and five were women, but of the five sulph-hæmoglobinæmic cases four were women and only one was a man. All the cases were adults except two, a boy, aged nine years, and a girl, aged 17 years. With these exceptions the ages ranged from 29 to 67.

The chief symptoms beside the cyanosis were headache and general weakness. The weakness was often extreme and in two cases was described as a "feeling of paralysis of the arms and legs." The cyanosis was general but especially conspicuous in the mucous membranes. There were no respiratory or cardiac symptoms other than the weakness would account for. Clubbing of the fingers was observed in two cases. The symptoms were usually of gradual onset, but occasionally developed very suddenly.

The duration of the cases varied from six months to eight years. Of six cases in which the result is recorded five got well and one died. In the fatal case the only lesions discovered at the necropsy were ulcerative enteritis and chronic parenchymatous nephritis.

The blood count is given in five cases. In four the red cells were 5,000,000 per cubic millimetre or slightly more, in one 3,360,000, so that in spite of the pallor there was no real anæmia; the white cells were 7900 per cubic millimetre in two cases, 10,000 in one, 20,000 in one, and 3400 in another. The hæmoglobin percentage was given in four cases as 90, 96, 70, and 115. The differential blood-count in one case was normal.

The urine showed the presence of albumin in three cases as a trace only except in the fatal case, in which chronic parenchymatous nephritis was found post mortem. Indol was in excess in four cases and in defect in two cases. The ethereal sulphates were increased in one case and diminished in one case. The pigments were not abnormal either in amount or nature.

Contrasting the two groups, it would appear that the methæmoglobin cases were associated with diarrhoea and improved greatly on a milk diet, while the sulph-hæmoglobin cases were associated with constipation and did not improve till this was relieved. In van der Bergh's first case of sulph-hæmoglobinæmia, that of a boy, aged nine years, the constipation depended on a rectal stricture which resulted from an operation for imperforate anus. A second operation, which relieved the stricture and constipation, was followed by recovery.

A SUMMARY OF PREVIOUS INVESTIGATIONS.

The first case recorded by Stokvis was that of a soldier who had been cyanotic for five years, the condition being associated with chronic diarrhoea. The patient died, but the necropsy showed only ulcerative enteritis and chronic parenchymatous nephritis. Spectroscopic examination of the patient's hand and tongue showed distinctly the band of methæmoglobin. As the action of drugs could be excluded, Stokvis concluded that the condition was due to intestinal absorption, and he turned his attention to the urine as the most likely source of information as to the etiology of the methæmoglobin-forming substance. On adding 1 cubic centimetre of defibrinated ox-blood to 25 cubic centimetres of the patient's urine he was able to obtain methæmoglobin

TABLE GIVING AN ANALYSIS OF 13 CASES—EIGHT OF METHÆMOGLOBINÆMIA AND FIVE OF SULPH-HÆMOGLOBINÆMIA.

Case.	Author.	Sex.	Age.	Symptoms.	Duration of cyanosis.	Bowels.	Stools.	Blood.						Urine.				Result.
								Red cells.	White cells.	Fer cent. Hb.	Spectrum.	Nitrites.	Culture.	Albumin.	Indol.	Mineral sulphates.	—	
1	Stokvis.	M.	33	Diarrhoea 6 years; sudden collapse, cyanosis, clubbed fingers, heart and lungs normal.	4 years.	Diarrhoea	Fluid, acid, odorous, flagellata.	—	—	—	MHb*	—	—	+	—	++	Red with acids.	Died
2	Talma.	M.	41	Headache, dizziness, cyanosis, oedema, systolic murmur at apex, palpitation and dyspnoea, diarrhoea.	1 year.	"	Fluid, odorous.	5,000,000	7900	90	MHb*	—	—	—	++	—	—	Unimproved.
"	"	M.	29	Dysentery, cyanosis, swelling of glands, heart enlarged, sounds weak.	—	"	—	—	—	—	MHb*	—	—	—	++	—	—	Cured.
4	"	M.	30	Headache, weakness, cyanosis, backache, glands enlarged.	½ year.	Retention and diarrhoea.	—	—	—	—	MHb*	—	—	—	++	—	—	—
5	Van der Bergh.	M.	9	Cyanosis, rectal stricture, urethro-rectal fistula, tympanites, clubbed fingers and toes, heart and lungs normal.	2 years.	Retention.	Fluid, alkaline, stinking.	5,200,000	22,000	—	SHb	—	—	—	++	—	—	Cured.
6	"	M.	25	Sudden weakness, oedema, cyanosis, heart and lungs normal.	7 years.	Diarrhoea and retention.	Normal.	—	—	—	MHb	—	—	+	—	—	—	—
7	Van der Bergh and Guterink.	F.	67	Exudative pleuritis, obstinate constipation.	—	Constipation.	—	—	—	—	SBb	—	—	—	—	—	—	Cured.
8	"	F.	60	Post-apoplectic hemiplegia, constipation.	—	"	—	—	—	—	SHb	—	—	—	—	—	—	"
9	"	F.	17	Retro-peritoneal tuberculosis, constipation.	—	"	—	—	—	—	SHb	—	—	—	—	—	—	"
10	"	M.	51	Diarrhoea 4 years, headache, feeling of paralysis, collapse.	4 years.	Diarrhoea	Fluid, odorous, acid.	5,200,000	7900	95	MHb	+	—	+	—	—	—	—
11	"	M.	31	Dysentery, headache, feeling of paralysis of legs and arms, cyanosis, heart and lungs normal.	8 years.	"	Fluid, odour of butyric acid, anguillula sterco-ralls.	—	—	—	MHb	+	—	—	—	—	—	—
12	Gibson and Douglas.	F.	36	Weakness, headaches, cyanosis, diarrhoea.	3 years.	"	Offensive, nitrites.	3,360,000	10,000	70	MHb	+	Bacillus coli communis.	Trace.	—	—	—	—
13	West and Clarke.	F.	37	Headache, weakness, cyanosis, constipation.	1½ years.	Constipation.	Offensive.	5,050,000	3400	115	SHb	—	Sterile.	—	—	—	—	—

* Cases 1, 2, 3, and 4 are entered as MHb cases, though the fact that sulph-hæmoglobinæmia had at that time not been described makes it possible that they were the latter condition.

REMARKS.—Case 1: Necropsy.—Ulcerative enteritis; chronic parenchymatous nephritis. Case 5: Operation on rectal stricture. Case 6: Condition cleared up temporarily on milk diet. Cases 7, 8, and 9: Cleared up as soon as the bowels were kept open. Case 10: Condition cleared up temporarily on milk diet. Case 11: Condition cleared up temporarily on milk diet. Case 12: Previous history of the use of aniline drug.

in ten minutes. He further found that the addition of hydrochloric, phosphoric, sulphuric, and nitric acids to the urine produced a deep red colour. These two reactions occurred only when the urine was alkaline. An examination of the ethereal and mineral sulphates showed that the former were greatly increased over the normal, the average ratio being 1:2.79. The amount of indican was in excess. From these findings he concluded that the substance in the urine which gave the red colour with acids was a product of intestinal putrefaction and was the toxic material which caused the change of oxyhæmoglobin to methæmoglobin in the blood. Repeated efforts to isolate this substance failed completely.

Talma's three cases of methæmoglobinæmic cyanosis were associated with long-standing diarrhoea. He added to our knowledge of the condition by proving that the methæmoglobin was in the blood corpuscles and not in the plasma, as is usually the case in drug-poisoning. As in the urine of all

his cases he found an increase of indol and skatol he accepted Stokvis's opinion as to the cause of the disease.

By Hijmans van der Bergh's researches considerable light was thrown on the subject. In his first paper he reports two cases. The first was that of a boy, aged nine years, who suffered from a rectal stricture and urethro-rectal fistula following on early operation for imperforate anus. After proving that the altered blood pigment was intracorporeal he turned his attention to the urine. Referring to recent work of Steensma and older work of Schönbein and Röhmman, he showed that normal urine in the process of putrefaction gives off nitrites—powerful methæmoglobin-forming substances—and is turned red by the addition of strong hydrochloric acid, and that, furthermore, the addition of a small amount of sodium nitrite to a normal acid urine gives it the property of being turned red by acids. He therefore concluded that the substance which Stokvis put forward as the cause of the

are often preceded for 10 or 20 minutes by some interference with vision. This in many cases amounts to no more than a sudden diminution of visual acuity, with a sensation of blackness or dancing specks before the eyes. Others have a more fully developed visual spectrum with partial blindness to one side, with the well-known fortification spectrum in the blind field. In others, again, there may occur a sudden hemianopia, a complete blindness to one side, so that the patient sees only half of the object directly looked at, so that if he looks into a mirror he can see only one half of his face. In a few patients there may be noticed also tingling of the fingers and of one side of the face, with perhaps aphasia, lasting for a few minutes. The usual course of these headaches is well known, lasting usually during the whole of the day, prostrating the patient completely, until vomiting brings relief. The cessation of the headache is probably not dependent directly upon the vomiting, for in a certain number of cases vomiting occurs quite early after the commencement of the headache and may be repeated several times, with no amelioration of the headache until many hours after. On the other hand, the vomiting in migraine is more probably the result of the headache, inasmuch as both are the result of increased intracranial pressure due to the vascular engorgement. When the headache has already lasted several hours and the vaso-motor derangement is beginning to subside, then the act of vomiting does no doubt contribute towards the cessation of the headache, on account of the powerful effect that vomiting produces of general vaso-dilatation, thus relieving the cerebral arterial pressure.

True migrainous headaches very commonly commence in early childhood and last until well past middle life, recurring at varying intervals, but usually diminishing in severity as the years pass. If gout, tuberculosis, or other cause of frequent pyrexia supervene, the headaches as a rule disappear. Probably the beneficial action of a seton in the back of the neck, an old remedy which often gave very good results, is due to the slight amount of chronic suppuration and consequent pyrexia that it produces. If the sick headaches increase in severity and frequency in middle age probably there is present some additional factor, as chronic Bright's disease or arterio-sclerosis, which is very prone to develop insidiously and aggravate a symptom, such as periodic headache, that is already present.

Migrainous attacks often come on without any previous warning, just as epileptic attacks so often do, the patient being apparently in his usual health or even conscious of an excessive sense of well-being. The attacks are, moreover, frequently precipitated by the same causes that are liable to bring on a fit in an epileptic subject—viz., great excitement, late hours, a crowded room, a bout of drinking, or, in women, the menstrual period. Constipation is by no means always present, and the tongue is often clean at the commencement of the attack, and there is no reason to ascribe this class of case to a toxæmia of intestinal origin. Very occasionally there may be loss of consciousness, or, more commonly, the sufferer from migraine has a typical epileptic fit. More rarely cases are met with in which epileptic fits are regularly preceded by a hemianopic scotoma or visual spectrum indistinguishable from that met with in migraine. Rarely of all are epileptic attacks which are followed by hemianopia, which is transitory and clears up entirely in 24 hours. Such varied forms of transitory cerebral disorder show clearly that migraine and epilepsy are closely allied, and that the same pathological process is probably concerned in the production of both. If the periodic headaches are of frequent recurrence, they are treated best between the attacks with bromides on the same lines as a case of epilepsy would be treated. Perhaps the three bromides of ammonium, sodium, and potassium answer somewhat better than potassium or sodium bromide alone. The actual headache is often relieved best, if taken sufficiently early, by a stiff dose of butyl chloral hydrate and phenazone, but if it is not given quite early in the headache, or preferably during the preliminary stage of scintillating scotoma, the dose is likely to lie in the stomach unabsorbed, perhaps for hours, and finally to be vomited unchanged. Another drug that may often bring almost immediate relief is nitro-glycerine, which by its vaso-dilator effect lowers the blood pressure in the peripheral vessels and so reduces the cerebral arterial pressure. This effect of vaso-dilatation in true migraine is of some help in understanding the pathology of the condition. Probably what takes place is an initial vaso-motor spasm affecting

more particularly the territory of one posterior cerebral artery. During this stage the visual phenomena are produced by anæmia of the half-vision centre in the occipital lobe. The primary stage of arterial spasm is succeeded by vascular engorgement, thus directly producing the headache which, like the vaso-motor disorder, is often unilateral. In a few cases the primary spasm is very slowly relaxed, with no succeeding state of engorgement, as in a case I have now under observation of a woman, aged 35 years, who has for many years been subject to attacks of temporary blindness lasting one or more hours, the sight gradually returning, and as a rule little or no headache following. This theory of a primary spasm of the arterial supply in the region of the half-vision centre in the occipital lobe is strongly supported by the following case. A young woman who for many years had been subject to infrequent attacks of migraine, after one attack developed hemianopia. In this case no doubt, the primary spasm precipitated a thrombosis in the branch of the posterior cerebral artery supplying the half-vision centre in the calcarine cortex of one side. Hers was a family type of migraine, her brother occasionally suffering with very severe attacks. Another woman, a hospital out-patient, aged 48 years had been subject to severe periodic headaches from early childhood recurring about once a fortnight, and followed by sickness and disorder of vision. These recurrent attacks became less frequent after she reached the age of 30 years, occurring after that only once in six months until five years ago when she was operated on for enlarged glands of the neck. Since that time the attacks completely ceased, but three years ago she had a stroke followed by slight left hemiplegia. Six months later she had a slight fit with twitching of the right side of the face without loss of consciousness, but right hemianopia developed, which has remained permanent. These two strokes were undoubtedly thrombotic and are additional evidence of the liability to vascular derangements in the region of the calcarine cortex in these cases. Her visual symptoms in the migrainous attacks were not, however, hemianopic, but merely progressive disturbance of vision to the point of complete inability to distinguish objects, increasing with the continuance of the headache up to the period of vomiting. This is a not uncommon form of visual disturbance to meet with in that form of migraine which does not begin with the characteristic hemianopia or scintillating scotoma.

Next I wish to refer to periodic headaches which may resemble true migraine somewhat closely and yet are less dependent upon an hereditary neurosis and paroxysmal vaso-motor spasm than upon some peripheral cause which by its local irritant effects may set up reflexly a migrainous attack. These cases, pathologically speaking, would be strictly analogous to reflex epilepsy, such as convulsions dependent upon the peripheral irritation of worms, the irritation of a scar, &c. They are, of course, more likely to occur in patients with a neurotic family history, but the point I wish to make is that although the attack of migraine resembles true migraine, yet the peripheral cause in these cases is the most important element in their causation, and the removal of this may be followed by complete cure of the periodic headaches. A typical example of this form is ophthalmoplegic migraine, sometimes known as recurrent third-nerve paralysis. In this disease the third cranial nerve on one side has been damaged in some way, as by a small hemorrhage from a severe blow on the head or fall in infancy, leaving behind a patch of meningeal thickening. At intervals the patient is attacked by severe headache which lasts for a day or two, and at the same time the third nerve becomes completely paralysed, though it recovers slowly during the succeeding weeks. This type rarely, if ever, develops a visual spectrum, which is a much rarer symptom in reflex than in hereditary migraine. Typical periodic headache resembling migraine I have known to follow an injury to the skull, causing a fracture of the base. The man recovered apparently from his injury but became subject to fortnightly headaches which prostrated him for the whole day. A year later he died from cerebral abscess. Other peripheral causes that not uncommonly give rise to this type of periodic headache are visceral lesions, such as chronic appendicitis, gall-stones, chronic gastric and other intestinal derangements. The onset of the menstrual period, too, in women is a frequent determining cause of reflex headache, especially if there be any chronic uterine disorder. The following case is interesting

on account of its suggestive analogy between reflex epilepsy and a reflex migraine. A boy, aged 14 years, had numerous convulsions in infancy; at the age of two years he was deeply jaundiced and ever since that time has been subject to recurring "bilious attacks." These occur every two or three weeks and commence with pain round the right side, being followed by severe headache which completely prostrates him for several hours, the attacks ending with vomiting. Occasionally in the course of an attack he becomes convulsed, with complete loss of consciousness—that is to say, an epileptic fit sometimes alternates with a migrainous headache, whereas the preliminary aura of pain round the right side and the history of the case dating from jaundice at the age of two years suggest that the attacks are of the reflex type and are perhaps dependent in part upon some lesion in the neighbourhood of the liver acquired at that early age, such as adhesions around the gall-bladder. The case is now under observation and the question as to the possible relief of the symptoms by an exploratory laparotomy in the region of the right hypochondrium is being considered.

The assertion has been made by some ophthalmic surgeons and others that the large majority of, if not all, migraines are due to errors of refraction, and that the sole remedy necessary which will provide an infallible cure is a pair of proper spectacles. This is a most pernicious way of explaining the condition because of its apparent simplicity and because of its striking success in a certain proportion of cases. Ocular headache, in which the pain is usually situated over one or both eyebrows and is due to errors of refraction, especially astigmatism, is not uncommon. Every now and then the pain may be more periodic in some patients and may exhibit the course of symptoms familiar to us as migraine. In these cases we have to do with a reflex migraine the peripheral exciting cause of which is the visual defect and constant unequal strain upon the ciliary muscle, and these patients will probably get much relief from proper correcting glasses. I have recently had under treatment a medical student for severe migraine, preceded by scintillating scotoma, whose first attack occurred two years ago while recovering from ulceration of both cornea. In this case undoubtedly the peripheral exciting cause was the astigmatism produced by the scarring of the ulcers on the cornea. For several weeks the attacks were frequent and severe, but they have now practically disappeared with the improvement in his vision.

After what I have previously said on the subject of hereditary and reflex migraine it would be manifestly absurd to ascribe all migrainous headaches to errors of refraction and the lack of proper correcting glasses. This is only one of the many peripheral organic defects which may reflexly induce the attacks. The reflex migraines differ from the true hereditary migraine in that they may start later in life, being dependent upon a peripheral cause in large part which is not hereditary. I have, however, known this form which had been present from early childhood disappear after a diseased appendix had been removed. The treatment of these reflex headaches is, therefore, obviously to remove if possible the peripheral irritant cause, whereas phenacetin and other analgesic powders are mere attempts at palliation of the periodic symptoms.

Constipation is an extremely common cause of headache and though it may accompany migraine and may even determine its onset it is one of the less frequent causes of periodic headache resembling migraine, but rather of toxæmic headache, which is more constant, often daily in its occurrence. A very definite type of recurrent toxæmic headache, which may easily be mistaken for migraine, is that associated with sluggish liver and habitual constipation. The pain in the head, as in migraine, is extremely severe, prostrating the patient completely for about 24 hours, and the tendency to these headaches may run in families, increasing the liability to confusion with migraine; but they differ from this neurosis in the following important particulars. There is no evidence of neuroses in the family; the periodic headaches get worse in middle life instead of better; there is no preliminary visual spectrum, though the patient may complain of a certain amount of dimness of vision; there is the close association of the headaches with constipation, furred tongue, foul breath, sallow skin and conjunctivæ, while the headaches may be warded off by a cholagogue and saline aperients and are not influenced by phenacetone, phenacetin, bromides, or the usual headache powders.

There is no arterio-sclerotic factor in this type of headache, the pulse remaining quite soft, and there is no albuminuria. The sluggish liver action and the constipation are the key to the treatment, yet there is a curious cycle of symptoms. The headache will pass off in about 24 hours or so, even though the bowels be not relieved, and the patient then feels quite bright and clear-headed. After one or two days a slight dull frontal headache returns, especially in the morning, and after an interval varying in different persons, but often fairly constant for the same individual, the severe headache recurs. This recurrent cycle of symptoms ending in the explosion of headache is apparently due in large part to a functional disturbance of the liver, the periodicity of the symptoms suggesting some derangement of its nervous control.

Toxæmic headaches are due to a circulating blood poison which may be introduced into the blood from without, such as alcohol, lead, iron, or ether, or the poison may be manufactured within the body either as the result of some acute microbic infection as pneumonia, typhoid fever, influenza, or small-pox, or as the result of some chronic morbid process as chronic gastritis, chronic Bright's disease, gout, diabetes, or cirrhosis of the liver. Gout and arterio-sclerosis are both very common causes of chronic headache, the high arterial tension in the latter being a most important contributory cause. The headache in arterio-sclerosis may be most persistent and resistant to ordinary treatment, though it may at once yield to nitroglycerine or one of the other nitrites, through the resulting lowering of blood pressure. In chronic Bright's disease, especially the contracted granular variety with hard arteries, the headache is equally severe and persistent, in part due to the high blood pressure and partly due to a toxæmia secondary to the kidney disease. Indeed, there are only two other causes of headache so severe and persistent as that of chronic Bright's disease with arterio-sclerosis—namely, cerebral tumour and cerebral syphilis. The headache associated with gout is not always associated with high arterial tension, but is often due to a toxæmia dependent upon a faulty metabolism and appears to be caused by the circulation in the blood of purins and other uric acid antecedents derived from a diet containing an excess of these bodies. These uric acid antecedents are chiefly derived from an excessive meaty diet, though they are also contained in tea and coffee. For persons, especially those of sedentary habits, with large appetites who are complaining of frequent morning headache it will be well in certain cases to insist on a rigid purin-free diet of milk, eggs, cheese, butter, cream, bread, nuts, macaroni, potatoes, and green vegetables. Such patients should drink a small tumblerful of some good laxative saline, taken hot the last thing before going to bed. With a weekly dose of calomel or blue pill and a short walk before breakfast every morning relief may often thus be obtained from the persistent distracting pain at the top and back of the head which, in men over 40 years of age, is frequently the result of long-continued excess of proteid constituents in the diet. It is possible that excess of the other constituents of food besides proteid—namely, the fats and carbohydrates—may, as Hare has suggested, be responsible for a similar process of toxæmia, which he has named "hyperpyræmia." Thus excess of all forms of food, not only proteid but fats and carbohydrates also, is likely to lead to overloading of the liver, and finally of the excretory organs, the kidneys. The postulate that the large majority of people habitually eat too much may be taken as in a fair way of being proved, since the researches of Chittenden on metabolism and the calorific values of diet, on the lines preached by Fletcher, have shown that the average individual can maintain perfect health and strength, while doing fair muscular work, on a diet the calorific value of which is not more than from one-half to two thirds of that usually accepted as the irreducible minimum. Lastly, the effect of an open-air life has scarcely received sufficient prominence in the treatment of many forms of toxæmic headache. Persons who are subject to chronic headaches should cultivate the habit of keeping their windows widely open, and the hardening process thus slowly applied will not only render the individual far less susceptible to catching ordinary colds but his tendency to frequent headaches will often completely disappear, and from a listless valetudinarian with always something wrong with him he will become brisk and healthy in mind and body.

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ON OPSONINS AND THE OPSONIC INDEX
AND THEIR PRACTICAL VALUE IN
THE TREATMENT OF DISEASE,ESPECIALLY WITH REGARD TO PULMONARY TUBERCULOSIS
IN SANATORIUM PATIENTS.¹

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THE human body is subject to infection by the micro-organisms of many diseases, but of the multitude of organisms which affect man there is scarcely one which is more common than the tubercle bacillus, and because my work brings me almost solely into contact with patients suffering from pulmonary tuberculosis I propose to base my remarks chiefly on work that has been done in connexion with the tubercle bacillus and on the efforts that have been, and are being, made to combat its ravages.

As is well known, tuberculosis may be acute or chronic, and I use these terms rather than "general" or "local," because though general tuberculosis is practically always acute, yet local tuberculosis may be acute (as tuberculous meningitis, &c.), or it may be chronic (as in ordinary pulmonary tuberculosis, tuberculous glands, &c.). Now, in all the common general infections the disease, as a rule, only lasts a short time and if the patient's strength can be maintained for this short time recovery takes place, because the presence of the toxins in the blood leads to the corresponding formation of antitoxins which are incompatible with the life of the infecting microbe. If, however, the patient's strength cannot be maintained we believe that there is not time for a sufficient production of antitoxins to neutralise the toxins and so death ensues. In the local infections, however, the disease as a rule lasts a long time for, owing to the circumstances of the case, there is only a small production of toxins with a corresponding small absorption into the blood and hence there is only a limited production of antitoxins because the blood and tissues are not stimulated to produce them. It follows then that in the treatment of acute or general infections we must adopt chiefly the expectant attitude and maintain the patient's strength and trust that the infected organism may be able to produce sufficient antitoxins to neutralise the toxins, though in a few cases—e.g., diphtheria and septicæmia—we can produce the antitoxins externally to the organism and by inoculating them into the patient increase his available resources for fighting the disease. In the treatment of the chronic or local infections, however, we must stimulate the organism to produce its own antitoxins, and one of the readiest methods of doing this is by the introduction into the tissues of the toxins of the disease in question. Now at present it is difficult to separate the toxins from the micro-organism producing them and we accordingly must make use of a sterilised suspension of the micro-organisms themselves which contain the toxins. If we can safely do this we give the patient a better chance of recovery, because we can regulate the dose of toxin employed without running the risk of overwhelming his powers of resistance as so often happens in the case of an acute general infection. But to do this we must be able to estimate the power of resistance of a particular patient to a particular disease, and this is what Sir A. E. Wright has enabled us to do by his process of estimating the opsonic index. Metchnikoff believed that the phagocyte was the all-important factor in enabling an infected organism to combat any disease, but Wright has shown that the phagocyte is practically useless without the presence of a certain substance in the serum to alter in some way the pathogenic microbe. He calls this substance "opsonin" and terms the amount present in any blood the "opsonic index" of the blood.

Apparently there are opsonins for every microbic disease present in the blood and only the opsonin for the particular disease is affected by the presence of the toxins of the infecting microbe, the others remaining about normal. This statement requires a little qualification, as Dr. T. R. Bradshaw of Liverpool found that inoculations of anti-diphtheritic and antitetanic sera caused a depression of the tuberculo-opsonic index which lasted for some months. He was inclined to assume that it was "due to some property

inherent in the blood of the horse and has nothing to do with the specific antitoxins."²

At present we cannot measure the amount of opsonin quantitatively but only qualitatively as follows, and I shall describe the process very briefly. We must prepare (1) a solution of white blood corpuscles by centrifuging a mixture of a few drops of any human blood in a small quantity of normal saline solution to which has been added 1 per cent. sodium citrate. The supernatant fluid is syphoned off and the corpuscles are then washed in normal saline solution alone and centrifuged and the supernatant fluid is syphoned off, leaving only blood corpuscles, chiefly red with leucocytes in the upper layers. 2. An emulsion of the microbe towards which the opsonic index is to be estimated. This is made by rubbing up a culture (or in the case of tubercle bacilli the dried bacilli) in saline solution of 1.5 per cent., to form an emulsion, which is then diluted to the proper strength, which can only be learnt by practice. 3. Some of the patient's serum is obtained by allowing a few drops of his blood to clot in one of Wright's capsules. Equal volumes of these three are fixed in a capillary pipette and incubated at blood heat for from 10 to 15 minutes, then mixed on a slide, and an ordinary blood film is made on a glass slide which has been rubbed over with finest emery paper. The film is fixed in saturated mercuric perchloride solution, washed, stained in carbol-fuchsin, decolourised in 2 per cent. sulphuric acid, washed in water and then in 0.1 per cent. sodium carbonate, and counterstained in methylene blue. The leucocytes are found at the edge of the film and the number of micro-organisms in 50 of the polynuclear cells is counted under the microscope. An exactly similar proceeding is adopted, only using the serum of a normal man in the place of that of the patient. The opsonic index is obtained by dividing the number of engulfed organisms in the patient's slide by the number in the normal slide.

It has been found that the opsonic index in normal healthy people (who are apparently free from tuberculous infection) varies between definite limits, and Bulloch,³ who examined many cases, put these limits as from 0.8 to 1.2. Urwick confirmed this in about 20 cases and I have found practically the same figures correct in seven persons and all except one are well within these limits. In one case where at two days' interval it was 1.3 I cannot find any satisfactory explanation as the man is apparently quite healthy without any predisposition to tuberculosis. Urwick⁴ in 33 cases of all stages of pulmonary tuberculosis found that the opsonic index was usually higher than normal, and this is probably owing to auto-inoculation from injudicious exercise and work, and with auto-inoculation we probably get a high index when the immunising machinery is strong and a low one when it is weak.

I do not know of any estimations of the opsonic index in persons predisposed to tuberculosis because I suppose that such cases are not easy to obtain with a subsequent confirmation of the diagnosis by actual development of the disease, but we may almost certainly presume that the opsonic index in such persons is low—i.e., that their resistance to the disease is feeble, and hence they sooner or later fall victims to it.

With regard to our sanatorium cases I have divided them into several classes and I shall deal with each in turn.

1. In ten early cases with a small amount of mischief only, whose indices I have estimated as soon as they came. I have found that six of them have an index which is normal or above and four have an index below normal. In all except one case the index is within the normal limits (0.8-1.2) and I do not see that the estimations would have been of much service in diagnosis. Of course, if the index is above or below these limits or varies from day to day I think that the diagnosis of tuberculosis is practically certain, though in the series of normal persons mentioned I had one with an index of 1.3. So far as I have yet observed this difference in the opsonic index does not seem to make any difference in prognosis, as all these cases have done, or are doing, well with ordinary sanatorium treatment. After treatment by sanatorium methods for varying periods (without any inoculations of tuberculin) the index has risen in three cases and fallen in three, though in three of them the disease was not arrested when the patients

¹ A paper read before the Manchester Medical Society.

² THE LANCET, May 19th, 1906, p. 1357.

³ THE LANCET, Dec. 2nd, 1905, p. 1623.

⁴ Brit. Med. Jour., July 22nd, 1905.

left the sanatorium. In the case of the other indices they are about equally divided—above and below normal—but I do not know what they were when the patients came. From these figures it is difficult to say what effect sanatorium treatment has on the opsonic index, for it probably depends on the index on arrival and this, again, depends on the amount of auto inoculation from exercise, work, &c., that the patient has undergone before coming to the sanatorium.

2. In acute pulmonary tuberculosis where there is a high temperature and the patient is apparently going downhill rapidly we get an index which varies from day to day. This variability is due to auto-inoculation which causes not only a fluctuating index but also a high temperature, but because a patient has a high temperature one cannot assume a fluctuating index, as we have a case at present where the temperature is high while the tuberculo-opsonic index is steady, the temperature being possibly due to staphylococcal infection. We have had three of these acute cases where we have been able to estimate the indices. In the first case we were only able to make a few estimations as we sent the patient home because he was rapidly losing ground. In the second there was extensive mischief in both lungs with high temperature and the index fluctuated greatly. He left us after four months to go to a sanatorium in the south of England where it was warmer, but just before he left his temperature showed signs of falling. At the other sanatorium his temperature continued to fall and he was soon on exercise and gradually improved. He returned to us in July with his lungs much quieter, a good temperature, and a lower and steadier index. Two months' later his lungs were quieter still, his temperature was better, and his index was keeping steady. In the third case there was a history of irregular life and much alcohol with extensive acute mischief of short duration with cavitation, high temperature, and an irregular fluctuating index. With two months' rest in bed and three months' further rest on a couch in the garden the lungs quietened considerably, the temperature fell to normal, and the index became steadier. These cases, then, seem to show that a fluctuating index is a sign of acute mischief and that as the case improves and the mischief quietsens the index becomes steadier and tends to approach the normal line. They also show to a certain degree that the ordinary fluctuations of temperature have nothing to do with variations in the opsonic index, as already shown by Urwick, Lawson, and others.

3. In ordinary sanatorium cases where there is a fair amount of disease in a subacute state we get an index which is usually about normal. Lawson and Stewart⁵ found in 24 out of 25 cases that the index was low but we have usually found that it is just above normal—i.e., above in 14 cases and below in seven—and, so far as I can see, this difference in indices does not correspond to a difference in the acuteness of the case. In these cases there may be an absence of stimuli from auto-inoculation or the immunising machinery may be worn out, but I think that the former is the correct cause, because if these cases are inoculated with tuberculin the opsonic index usually rises and by suitably spaced inoculations can be kept raised.

4. In the class of cases called "sanatorium cures," more properly arrested cases, Bulloch⁶ found the index depressed in 13 out of 14, while Lawson and Stewart⁷ found in 30 cases cured in a sanatorium without inoculation that the index varied from 0.5 to 2.1, 17 being 1.0 or above. In four old cases I have found the index above normal in three and below in one, the latter having been well since 1900 and possibly approximating to a normal person. This question of the index in a "cured" patient is important because if it be more usually found low it seems as if the patient's resistance was not permanently affected by treatment, and that he therefore runs a risk of further infection, but before accepting this as a definite statement we want to know if the cases were truly arrested and not simply patched up temporarily, and also what their index was before they started treatment—a point that cannot be settled yet as the method of estimating the opsonic index has not been in existence long enough to secure any results.

5. In cases of tuberculous glands Wright has, so far as I know, invariably found the index to be low, and Bulloch⁸

in two cases found it to be 0.3 and 0.6. In one case of tuberculous cervical glands and in one of tuberculous mesenteric glands we found the index low, though in neither case was it as low as Wright and Bulloch seem to have obtained.

6. In one case of tuberculous enteritis (apparently), where there is a very little subacute lung mischief, we obtained an index below normal at first, but there seems to have been auto-inoculation at short intervals because the index has fluctuated and these fluctuations correspond more or less closely with attacks of acute abdominal pain, slight diarrhoea, and a rise in temperature.

Of course, there are other tuberculous affections, such as lupus, disease of the joints, larynx, genito-urinary system, and also diseases due to infections by other organisms, but as I have had very little practical experience of these cases I do not propose to say more than a few words about them incidentally later, but shall leave them in the hope that others may tell of their experience.

Now having shown what the opsonic index is and how it varies in different cases of tuberculous disease, I must pass to the practical bearing on the treatment of such cases and I must deal with each of these classes in turn and show how estimations of the opsonic index may help us. It must be obvious to everyone that it is desirable to raise the opsonic index to normal or above, especially in those cases where it is low, for as the plasma is the fluid which bathes all the tissues of the body and as the opsonin exists in the plasma and is the means of altering the invading micro-organisms so that they can be taken up by the phagocytes, it follows that a plasma rich in opsonins will be a powerful means of enabling the organism to resist the ravages of the micro-organisms, and therefore we may safely say that a high opsonic index is of undoubted value if it can be maintained for any length of time.

Wright⁹ has shown that the opsonic index can be altered in either direction by an appropriate dose of the appropriate vaccine. He defines a vaccine as "a sterilised and standardised suspension of micro-organisms" and it is made as follows: The micro-organism, be it staphylococcus, tubercle, or any other kind, which is found in the blood or tissues of the patient, is grown until a pure culture is obtained. Then a small quantity of the growth is rubbed up with normal saline solution to which 0.25 per cent. of lysol is added and the whole is heated to 60° C. for an hour to make sure that all the micro-organisms are killed. This is then standardised by counting it against a small quantity of blood where the number of red blood cells is approximately known. In the case of tubercle bacilli Koch's T.R. practically corresponds to this description as it consists of finely ground-up bodies of dead bacilli and hence it is used as the vaccine in tuberculous diseases after appropriate dilution.

When a patient is inoculated with a vaccine there is almost invariably at first a drop in the opsonic index (negative phase) which lasts from a few hours to 14 days, but this is followed by a rise in the index (positive phase), usually to a higher level than it formerly stood at, and this is maintained for a varying time, being succeeded by a gradual fall back to about the original, though often there is a slight permanent increase. Wright found that it was possible to accumulate negative phases and is inclined to attribute the unfortunate results that occurred when Koch's T.R. was first introduced to the large doses frequently employed, causing an accumulation of negative phases. So far it has not been found possible to accumulate positive phases, but by the use of judicious inoculations and frequent estimations of the opsonic index one positive phase can be followed by another with only a short slight negative phase in between. If we wish, therefore, to get the best results from our inoculations we must estimate the index frequently and use appropriate doses of vaccine. For the first condition we must have our patient under constant observation, so that the index may be estimated daily, if necessary, and so that auto-inoculation due to injudicious exercise may be avoided. Exercise undoubtedly affects the opsonic index, for Ellett¹⁰ showed that in men training for a boat race there was a considerable fall of the index when they finished their day's outing as compared with that before they went out. Then, again, Meakin and Wheeler¹¹ showed that in sanatorium patients exercise is followed by auto-inoculation causing

⁵ THE LANCET, Dec. 9th 1905, p. 1679.

⁶ THE LANCET, Dec. 2nd, 1905, p. 1633.

⁷ THE LANCET, Dec. 9th 1905 p. 1679.

⁸ THE LANCET, Dec. 2nd, 1906, p. 1603.

⁹ THE LANCET, Dec. 2nd, 1905, p. 1593.

¹⁰ Brit. Med. Jour., July 21st, 1906.

¹¹ Ibid., Nov. 25th, 1905.

negative and positive phases and I have confirmed this in a few cases.

As regards the appropriate dose of vaccine, this can only be learnt by experiment and repeated estimations of the index, but it has been proved that the large doses (i.e., $\frac{1}{10}$ of a milligramme and upwards) recommended in the directions given with Koch's tuberculin are too big and that very good results can be obtained with a very much smaller dose, and we have had a patient whose index responds readily with a dose of $\frac{1}{100}$ of a milligramme, though the more general dose that we use is $\frac{1}{10}$ of a milligramme. With small doses such as these the negative phase is absent (or more probably very short) and there is, as a general rule, no rise of temperature. In one case after the first inoculation of $\frac{1}{10}$ of a milligramme there was a good rise of temperature which, however, did not occur after the next inoculation of $\frac{1}{10}$ of a milligramme, but then this patient was an extremely nervous individual who had been imagining all sorts of horrors as to the process and results of inoculation. In another case several inoculations were followed by no rise of temperature and I believe that this is the more usual course of events. Auto-inoculation, too, probably occurs without any rise in temperature except when it is due to a fresh infection.

As regards the frequency of inoculation, this depends on the length of time that the positive phase lasts, and we usually find that at first we have to inoculate at about from seven to ten days' interval, while as the number of inoculations increases the frequency is diminished, until we have had a positive phase lasting two months after an inoculation of $\frac{1}{10}$ of a milligramme.

If we now consider the various classes of case in turn we come first to that of persons *predisposed* to tuberculosis. In these cases, after due estimation of the opsonic index, it might be quite worth while to give a few inoculations of T.R., so as to raise their index to normal or higher, for it has been found that even in healthy people the tuberculo-opsonic index rises rapidly after a dose of T.R. Of course the treatment might have to be repeated several times, but even then I think that it would be quite worth while if it procured immunity from the disease. In the *early* cases of pulmonary tuberculosis I do not think that there is much object in inoculating as practically all these patients do well with ordinary sanatorium treatment, though Trudeau seems to have found at the Adirondack Sanatorium that he gets a better percentage of "cures" in those cases which have been inoculated than in those which have not. So far I have not used inoculations in any of these cases and cannot therefore speak from experience. If, however, I found that an early case was not getting well with ordinary sanatorium methods I should certainly advise inoculations. In cases of *acute* pulmonary tuberculosis I do not consider that it would be advisable to inoculate, because if the index naturally fluctuates rapidly from day to day it is quite conceivable that—in spite of the utmost care in estimating the index—one might chance on a negative phase, which would only be increased by that due to the inoculation, and harm might be done. In these cases I think that our only chance lies in absolute rest and feeding as much as possible in the hope that the disease may be arrested as in the cases that I have mentioned before. Then later, when the lungs are quieter and the index has become steady, inoculations might do good and help towards completing the so-called cure.

In the ordinary sanatorium cases where the mischief is in a subacute state and where the patient does not seem to be making the progress that we can reasonably expect, I think that inoculations of tuberculin, controlled by the opsonic index, may do a considerable amount of good. In these cases there is probably an absence of stimuli to the immunising machinery and there is accordingly no corresponding production of antitoxins. If, now, by inoculating we give the necessary stimulus we should get a corresponding production of antitoxins accompanied by a rise in the opsonic index and improvement in the lung condition. The index does not, however, always respond, for in one case a fair amount of improvement was found in the lung condition without really much effect on the opsonic index. So far we have not had a large number of cases inoculated because we always first try what ordinary sanatorium methods will do, but if we find that the patient is not progressing satisfactorily we advise inoculations in the hope that the extra stimulus will help on to a "cure." Out of seven cases of this class that we have inoculated, one patient left after three inoculations before

there had been time to obtain any effect, three patients have left much improved, and three are still under treatment.

Of the three which have left much improved I will give brief details. The first patient had subacute mischief in the upper half of each lung of about one year's standing. We began inoculating him fairly early and when he left eight months later the disease had quite cleared up and there were only the signs of healed lung present. The mischief certainly disappeared in a more complete and rapid fashion than I remember to have seen with sanatorium treatment alone. After each inoculation there was a negative phase, followed by a considerable rise in the index—on one occasion to 2.1. At first, when we were having the indices estimated by Dr. R. H. Urwick, they were only done before and after each inoculation and hence there were recorded only sharp ups and downs, but later, when we were doing the estimation ourselves more frequently, we got more gradual fluctuations. At first we were using doses of $\frac{1}{10}$ of a milligramme (which Sir A. E. Wright at that time recommended), but later we used only $\frac{1}{100}$ of a milligramme, and though the index did not rise as high, still it remained up for a considerable time—in one case it did so for nearly two months. The last two estimations which were made three months after he left the sanatorium and had been carrying on treatment at home without any inoculations for four months show that the index has dropped below normal.

The second patient had considerable mischief in the left lung with a right lung collapsed by old pleural effusion and we did not begin inoculating until the lung condition seemed to have become stationary under treatment. After two or three inoculations he seemed to go ahead again and the lung condition improved considerably before he left, three months later. His index from being chiefly subnormal rose to above normal and kept almost entirely above it. It dropped again after he left.

In the case of the third patient, as in that of the preceding one, we noted that after a few inoculations the bacilli in the sputum had clumped, and if clumping is a sign that the bacilli are finding the conditions adverse to them it shows that the inoculations are undoubtedly doing good. This patient had been undergoing sanatorium treatment for some years and had a fair amount of chronic mischief in each lung. After the inoculations this condition improved considerably but his opsonic index made very little response to the inoculations and remained about constant, though very frequently estimated.

Of the three patients whom we are at present (November, 1906) inoculating the first had the whole of the right lung and half of the left affected with mischief in a subacute state, and as after six months' sanatorium treatment her progress—which had been very good—had apparently come to a standstill we advised her to try inoculations. Her index responds fairly well to small doses of tuberculin and the lung condition is again improving. The next patient had moderately acute mischief in the upper lobe of the left lung with some infiltration of the apex of the lower lobe. Since we began inoculating him a month ago the lung condition has improved and there are much less cough and expectoration. Both he and the last patient report also an improvement in the appetite since beginning inoculations. The last patient of this class had rather acute mischief in the left upper lobe, with a large cavity, some scattered mischief in the right lung, a small ulcer on her right vocal cord, a high temperature ranging from 101° to 103° F., a very feeble general condition, and a weight of only 4 stones 11 pounds. Sir A. E. Wright began inoculating her and then sent her on to us for sanatorium treatment. She responded readily to inoculations of $\frac{1}{100}$ of a milligramme of T.R. and her lung and throat condition had improved somewhat, but the great difficulty in her case was the poor general condition, combined with low weight and extremely small appetite. From her opsonic chart there appeared to be no auto-inoculation of tuberculin, for her index rose and fell regularly after each inoculation, and therefore I am inclined to think that her temperature was not due to the tubercle bacillus but possibly to staphylococcus or pneumococcus, both of which were found in her sputum.

We have had two cases of tuberculous glands. In the first the patient had had a slight attack of pulmonary tuberculosis but had got quite well. In December, 1905, he began to have acute abdominal pain, chiefly in the right side of the abdomen, and two irregular painful swellings could

be detected on palpation, one near the umbilicus and the other external and higher up. Owing to the severe pain, which I thought to be due to a local peritonitis, I kept him quiet in bed for nearly five months without much, if any, improvement, often having to use large doses of morphine to check the pain. Then I began inoculating him with a tubercle vaccine. After five inoculations he could walk a little, and after two or three more he could walk fairly well and he went home. He came back a little later with a return of pain which subsided after an inoculation or two, and a short time later he climbed Moel Famman (1800 feet) without more than temporary discomfort. He has now, except for a very few occasional attacks, been practically free from pain for a year, but has come back recently for a few inoculations to try to get rid of the pain altogether. I believe that he has had tuberculous mesenteric glands, causing a local peritonitis, and that the inoculations have caused the glands to decrease in size and to become much quieter and have also abolished the peritonitis, leaving only adhesions from which he occasionally gets pain. This patient also had a form of acne all over his back which no treatment seemed to clear up, but it all disappeared after a few of the T.R. inoculations however, possibly proving that it was tuberculous in origin.

In the second gland case there were tuberculous cervical glands in a patient who had been operated on for them about a year ago. When he came to us the glands were all round the angle and ramus of the inferior maxilla on the left side and he had an erratic high temperature. We began inoculating him after a month's rest in bed, and a month later the temperature had fallen considerably and the weight had gone up while the glands had decreased in size. Two months later the temperature had fallen quite to normal, the weight had increased about a stone, and the glands were much diminished. Then a sinus formed and a fair amount of discharge came away and several of the glands got much smaller. Since then they have continued to decrease with more inoculations, but the sinus has persisted and we are now using a staphylococcal vaccine and the amount of discharge is perhaps slightly less already.

Of course, inoculations of tuberculin will not cause absorption of chalky or caseous material, but I am sure that if these stages have not been reached they will cause absorption of much, if not all, of the inflammatory material of the glands, whilst probably rendering a subsequent operation smaller, easier, and more likely to heal perfectly, as Gray¹² of Aberdeen has already found.

We have one case of tuberculous laryngitis which is being inoculated and so far as the case has gone I think that the inoculations have done good, but it is too soon to speak with certainty yet. Apart from tuberculous cases we have had one case of farunculosis in which the boils disappeared after two inoculations of a staphylococcal vaccine, and in this case it is interesting to note that the staphylococcal index responded well to the inoculations whilst the tuberculous index remained stationary.

Before closing there are one or two points that I should like to mention with regard to the inoculations. At present we confine our inoculations to those subacute cases which do not seem to be progressing as satisfactorily as we could wish, but there is no reason why all cases, except perhaps acute ones, should not be so treated, and even the acute ones might be inoculated provided that very small doses were used so as to produce a very transitory negative phase. These acute cases are at present our most hopeless ones, and if we can get anything that may do them good I think that it will be worth trying. We always estimate the opsonic index several times before beginning to inoculate so as to make sure that there is no auto-inoculation, because one does not wish to add even a small negative phase to one already present from natural occurrences. Again, in order to avoid auto-inoculation from exercise we always rest our patients for one day before and two or three days after an inoculation. We usually start with a small dose, such as $\frac{1}{100}$ th of a milligramme or $\frac{1}{10}$ th of a milligramme of tuberculin, and it is wonderful what an effect such a dose has on the index besides being practically without any risk or negative phase.

Of course, in cases of pulmonary tuberculosis there is usually a mixed infection, and after, or while, using tuberculin it may be necessary to give inoculations of a staphylococcal or pneumococcal vaccine before the patient will get

well. Gray of Aberdeen noted this in connexion with cases of local tuberculosis, and he also found that patients who were subsequently operated upon healed more rapidly and perfectly and were less liable to sinus formation than those who were not previously inoculated.

Before beginning to inoculate it is necessary to make sure that the vaccine corresponds exactly to the micro-organism with which the patient is affected, and in most cases it is necessary to make a vaccine from a culture of the particular germ which is causing the disease. In the case of tubercle this is almost impossible owing to the difficulty of culture, but if it could be done the results might be even better. We have not yet had any untoward effects from inoculations, though on two occasions the temperature has risen afterwards for a day or two. The good effects are a lessening of activity—as shown by improvement in the physical signs and lessening of the amount of sputum—and improved appetite and increase of weight.

I am afraid that I have dealt with this great subject very imperfectly but it has proved a most difficult task to be brief and at the same time to say exactly the right thing to make myself clear. I have dealt almost entirely with the tuberculo-opsonic index, because it is the one with which I am best acquainted; but Sir A. E. Wright and others have proved that the principle of vaccine inoculation is available in many other germ diseases. The great drawback at present is the length of the processes which render the method difficult of general application, but to get the best results I feel sure that one must make use of the opsonic index and not give inoculations without any guide. Whether Sir A. E. Wright will add to his already brilliant researches and devise a shorter method of controlling the inoculations I cannot say, but there is no doubt in my own mind that by the present method he has made a most valuable addition to our available resources for combating disease.

Ruthin.

A REVIEW OF THE PRESENT MEANS OF COMBATING SLEEPING SICKNESS.

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THE recent public confirmation by Koch [1]* of the value of gland palpation and puncture in the diagnosis of human trypanosomiasis and of atoxyl in its treatment has once more attracted considerable interest to the existing means of combating sleeping sickness. In diseases of this type, like malaria, in which the specific parasite is carried from vertebrate host to vertebrate host by an invertebrate intermediary, prophylactic measures designed for the protection of the vertebrate host may be directed either against the parasite or against its transmitting agent. It is possible that *Trypanosoma gambiense* may be parasitic in other vertebrate hosts than man and that it may be transmitted by insects other than tsetse flies (*Glossina palpalis*), but so far as is at present known it occurs only in man and can be carried from man to man only by those insects. In practice efforts to check this disease will therefore be directed (1) against its transmitting agent—the flies—(a) by destroying them or (b) by preventing them from reaching and biting men; and (2) against the causative parasite—the trypanosome—(a) by the treatment of persons already infected and (b) by their isolation in order that they may not constitute foci of infection for other individuals.

(1 a).—Comparatively little is known of the bionomics of the tsetse flies and at present there seems to be no weak point in their life-cycle at which they may be easily destroyed. Their greatest weakness seems to lie in the fact that the females deposit only one living larva at a time, and this (*Glossina fuscus* [2]) only at intervals of from two to three days. The larva is placed on the ground, becomes a puparium almost immediately, and in from five to six weeks

* The figures within brackets occurring throughout this article refer to the bibliography at the end.

the fly hatches out [3]. It has been suggested that fly-infested areas should be frequently fired for the purpose of destroying the fly while it is at this stage. In this connexion it is important to note that *Glossina palpalis* has been reported to deposit its larvæ about the roots of banana trees [4].

(1 b).—It is certain that the existence of an area 300 yards in width, free from rank undergrowth or grass, around a residence will do a very great deal to keep it free from tsetse [1, 2, 5]. The flies prefer rank vegetation near water; native villages and European settlements should, therefore, be placed as far as possible from such localities or, if this is impossible, they should be kept clear of undergrowth. The use of wire gauze and netting—often advisable, particularly when travelling by canoe—will be matters for personal care.

(2 a).—Very, very many drugs have been used in the treatment of human trypanosomiasis. The one which, so far, has given the best results is that preparation of arsenic—"atoxyl"—first recommended by Thomas and Breinl [6]. Their work has recently been confirmed by Kopke, van Campenhout, Broden and Rodhain, and Koch, all of whom have had a certain amount of success in the treatment of patients [7]. Koch, in particular, warmly advocates its use. Trypanosomiasis is a very chronic disease. It is well known that persons, always considered healthy, may die from the disease after a residence of from seven to 10 years in a country where sleeping sickness does not exist. When this is remembered the question must arise whether the "cures" recently reported will prove to be permanent. A very marked improvement almost immediately follows the administration of atoxyl [8 (p. 60)], but the experiments on animals made by Thomas and Breinl conclusively show that in spite of continual treatment there is frequently a recurrence of the disease and that death may finally follow, just as in an untreated trypanosome infection. The disease has unfortunately taken this course in some of Kopke's patients [15]. In our opinion the exact value of "atoxyl" in sleeping sickness is still problematical. That it has a considerable beneficial effect is certain; to obtain the greatest benefit from its use it must be given continuously and regularly [8]. It is only by the careful work along these lines of observers who have an opportunity of treating cases of human trypanosomiasis and who are prepared to keep records of their patients for several years that it will eventually be possible to determine the exact therapeutic value of this drug in human trypanosomiasis. In the meantime, however, its use is certainly strongly indicated, together with the employment of every aid to the general building-up of the patient's system [8 (p. 51)].

(2 b).—The means by which infected persons are to be prevented from becoming dangerous to those who are still healthy will, of course, vary as the disease is endemic or not in the district under consideration. In some districts the percentage of infected persons is so large that attempts to segregate them would certainly fail. In such localities, as well as in slightly affected ones, every effort should be made to persuade the natives to place their villages in cleared areas as far as possible from tsetse flies.¹ It will occasionally be practicable to establish villages of treatment and detention in districts in which the disease has only recently appeared. Such villages should be situated in places free from tsetse flies. In them would be isolated all local cases of sleeping sickness, whether indigenous or introduced.

Considerable success is anticipated from the application of quarantine measures designed to arrest the spread of human trypanosomiasis by preventing the entrance of persons infected with the disease into districts where it does not already exist [8]. The epidemiology of sleeping sickness shows that, as a rule, it spreads but slowly from a given centre but that it may be rapidly carried from infected to uninfected districts by the advent of persons suffering from it. Now, the individual African does not travel long distances alone; long journeys are made in caravans either purely native or under the control of Europeans or Arabs. Traffic of this sort, whether for trading or labour purposes, is comparatively easily controlled; therefore, it will be possible to prevent infected natives travelling in this way from entering uninfected districts.

It is well known that persons infected with trypanosomes

may appear to be well and may work like healthy individuals. It was previously impossible to diagnose such cases, save by tedious examinations of their blood. Greig and Gray [9] showed that trypanosomes could easily be found in the juice aspirated with a hypodermic syringe from the enlarged lymph glands of such cases. This observation was confirmed in the Congo, and it was found that in practice every negro who has enlarged cervical glands must, other causes being absent, be considered to be a case of trypanosomiasis until the contrary can be proved [8, 10]. This conclusion is supported by the results of further work in Uganda [1, 11] and in Sierra Leone [12] and Central Africa (private communication). We have therefore an exceedingly simple method of detecting early cases of human trypanosomiasis which may be applied by almost any intelligent person. That it is an efficient method has been shown in the Congo [8] by the examination of over 6000 natives inhabiting both infected and uninfected districts.

The way in which the above diagnostic method is to be applied to the protection of threatened areas in which sleeping sickness is not yet endemic is briefly as follows. To prevent infected persons from entering such districts, posts of inspection, under the control of medical officers, are to be placed at suitable points on the main caravan routes and all travellers will be examined. To obtain the expulsion of imported cases already introduced it will be made an offence for any employer or director of labour in an uninfected district to have under his control any person with enlarged glands.² All suspected persons will be sent towards an infected district to the nearest post of inspection, where the resident medical officer will confirm the diagnosis and will send the patient to one of the villages of detention where the case will receive treatment. It is superfluous to say that these villages should only be established in districts where sleeping sickness is already endemic. The difficulties of enforcing such measures are doubtless enormous but they will at all events put a stop to the importation by Europeans or Arabs of negroes—labourers or soldiers and their women—suffering from trypanosomiasis into districts where the disease was previously unknown. Much of the spread of human trypanosomiasis in the Congo basin is certainly due to this factor [8].

Natives of many parts of Africa already know and realise that enlarged glands mean sleeping sickness [13]. Many tribes have the conception of quarantine since they isolate their sick, and, if the matter be properly handled, it will not be difficult, in the Congo Free State at least, to obtain the eager co-operation of some of the more intelligent chiefs, who know what the disease means, in applying a measure which promises to check the advance of sleeping sickness.

In conclusion, it must be insisted that even if a drug be found "specific for trypanosomiasis as quinine is for malaria," every other means of fighting the disease must still be employed—mosquito destruction and segregation are much-employed methods of public malarial prophylaxis. As has been already said, we have no means of destroying tsetse flies in large numbers. Therefore those who have the direction of affairs in Africa should, by enforcing quarantine and isolation measures, do all in their power to prevent the further spread of human trypanosomiasis. The need for such preventive measures is immediate and urgent, since it is only too apparent that the disease is rapidly spreading southwards. One of us published a few months ago in THE LANCET [14] a map taken from Memoir XVIII. of the Liverpool School of Tropical Medicine, which indicated the distribution of sleeping sickness in the Congo Free State in 1905. The disease now extends much further to the south. In the east the disease is actually endemic along the shores of Lake Tanganyika between about 4° and 7° South of the equator. Imported cases have been reported from Moliro, at the southern end of the lake, as well as from Kasenga, and from another point equally far south (10° 30') two degrees further west. In the west, in Portuguese West Africa, cases have been reported from equally far south.

Just at present new mining fields are being opened, and new railroads are being built in the south of the Congo Free State. Labourers will be brought to these works from considerable distances, and unless the greatest care be taken in their recruitment, their camps will become centres for the

¹ It must be remembered that a place cannot be said to be free from tsetse flies until after a careful search extending over a considerable period of time has been made [2].

² In the Congo Free State this is now an offence punishable by a fine of 200 francs with, in the case of an official of the Free State, such additional punishment as seems advisable.

dissemination of human trypanosomiasis in a district at present uninfected by that disease.³

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PARATYPHOID FEVER IN THE TROPICS: CASES OF MIXED INFECTION.

PARATYPHOID FEVER AND MALARIA; PARATYPHOID FEVER
AND STAPHYLOCOCCÆMIA; PARATYPHOID FEVER AND
PNEUMOCOCCÆMIA; PARATYPHOID FEVER AND
TYPHOID FEVER.

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As a small addition to our knowledge of the occurrence of paratyphoid fever in the tropics, it may be desirable to put on record the cases which I have observed in Ceylon, where the presence of the disease was hitherto not recognised. In the years 1904 and 1905 four cases came under my notice, and during the severe prevalence of typhoid fever in Colombo during the months of March, April, and May, 1906, I examined five other cases. Besides these nine cases of simple paratyphoid infection, I have met with four cases of mixed infection.

The cases of simple paratyphoid infection examined by me could not be clinically differentiated from typhoid fever, of which disease five presented all the classical symptoms: gradual onset, typical temperature chart, and enlargement of the spleen. In the remaining cases the disease began suddenly with shivering and rheumatoid pains, the temperature rising very high immediately. In the tropics, however, typhoid fever may not rarely present these atypical symptoms. The Widal reaction performed several times was negative in all. The stools and urine were investigated repeatedly, using MacConkey's media for plating. The bacillus typhosus was never isolated. In five cases a bacillus was isolated with the characters of the bacillus paratyphosus A (Brian and Kayser): actively motile; no liquefaction of gelatine, very slight production of indol; milk acid, but unclotted; acid and gas in dextrose, levulose, maltose, and mannite; no change in saccharose and lactose. In four cases a bacillus was grown with the same cultural characters, the only difference being that it produced a little more indol, and that in litmus milk it induced a slight initial acidity soon followed by a well-defined and permanent alkalinity (bacillus paratyphosus B, Shotmüller). The two types were further determined by agglutination tests, using also some sera of known origin. All the cases ran a mild course with the exception of one which ended fatally. This case has some interest from a pathological aspect. It is generally admitted (Lucksh, Wells, Scott) that in paratyphoid fever there is, as a rule, absence of intestinal ulceration. In my case, however, the lower part of the ileum showed several ulcerations absolutely identical with typhoid ulcers. The mesenteric glands were much enlarged.

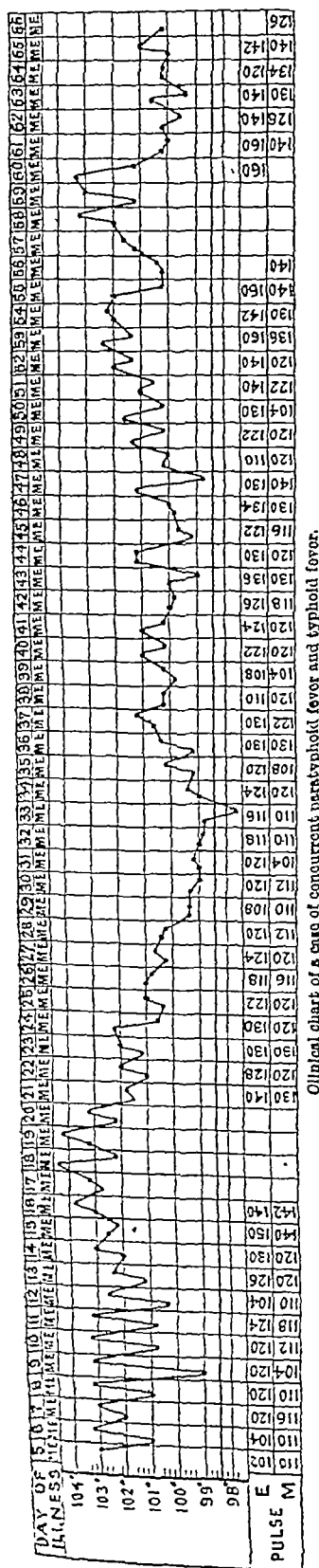
and spleen were examined bacteriologically. The bacillus typhosus was not found. The bacillus paratyphosus A was found to be present in pure culture in the spleen and mesenteric glands; in the ulcers it was mixed with the bacillus coli and other organisms.

CASE 1. Paratyphoid fever and malaria.—The patient was a man, aged 24 years. There was no previous history of malaria or of any other illness. In April, 1905, a few days after he had returned from a malarial district, where he had only been for a short time, he was taken suddenly ill with severe shivering, the temperature rising to 104.2° F. The blood contained numerous parasites of benign tertian. On the second day the temperature was 99.4° in the morning and 101° in the evening; on the third day the patient had shivering again, and the temperature rose to 103.6°. On the fourth day the temperature was 101° in the morning and 102.2° in the evening. On the fifth day it was 100.8° in the morning and 101.4° in the evening. By that time the malaria parasites had completely disappeared from the blood. The temperature, however, continued for nine days more, varying from 99° to 102°. From the fifteenth to the twentieth day it varied from 98.6° to 100.8°. The spleen could never be palpated; there were no roseola spots. There was marked constipation. The patient received 30 grains of eucaline daily during the first week and 15 grains afterwards. On the seventh day of the disease the stools were examined bacteriologically and a bacillus paratyphosus B (Shotmüller) was grown. On the tenth day the same organism was grown from the urine. The blood of the patient agglutinated this germ in a dilution of 1 in 500, while it never influenced the typhoid bacillus. The patient remained in good health for three months, when he again had an attack of fever, the temperature rising to 103.6°; the blood contained some parasites of benign tertian. Eucaline was given. On the third day the temperature rose to 99.4° only and afterwards remained normal. The stools were examined, but only bacilli coli were grown. This second attack was simply of malarial origin.

CASE 2. Paratyphoid fever and staphylococciemia.—The patient was a young German, 26 years of age. There was no history of any disease of importance. He had been for three years in Ceylon and had lived in the bungalow where the case of paratyphoid fever and typhoid fever, described later, occurred. At the end of June, 1906, he had complained of vague malaise and headache. He had pyrexia which never rose above 102.2° F., of rather irregular type. Widal's reaction was negative. The blood was investigated bacteriologically, using my dilution method. A staphylococcus albus was grown. From the stools a bacillus paratyphosus A (Brian and Kayser) was isolated. The blood agglutinated this germ in a dilution of 1 in 800. About a week after the staphylococcus had been grown from the blood the patient developed numerous boils all over the body, some of them rather large. The pus of these boils was examined bacteriologically and the staphylococcus pyogenes albus and aureus were grown. The fever lasted altogether 14 days.

CASE 3.—Paratyphoid fever and pneumococciemia.—The patient was a married woman with nothing of importance in her history. In April, 1905, shortly after having returned to Colombo from the hills, she complained suddenly of sore-throat and of difficulty in swallowing; she had shivering and the temperature rose in a few hours to 103.4° F. When I saw her both tonsils were covered with whitish exudation, the submaxillary glands being enlarged. The lungs were clear and nothing abnormal was to be noticed at the examination of the heart. The spleen was not enlarged. There was a trace of albumin in the urine. Two swabs were taken and were examined bacteriologically, films and cultures being made. In the films extremely numerous diplococci not decolourised by Gram's method were present. Culturally, the search for the diphtheria bacillus was negative; a diplococcus was grown with all the characters of the pneumococcus. The throat symptoms disappeared in four days, but the fever, varying from 100° to 102.4°, did not leave the patient till much later. Her blood was then examined for Widal's reaction with negative results. The blood was also examined for bacteria, using the dilution method. A coccus with the characteristics of the pneumococcus was grown. As at that time a slight diarrhoea had set in the stools were examined bacteriologically; a paratyphoid bacillus of the type B was isolated. The blood agglutinated the bacillus, using a dilution of 1 in 300. The blood had for the pneumococcus grown fr

³ Private information indicates the great probability that labourers from the thickly populated but infected areas to the south of Lusambo and from Cabinda will go south to work on the railroads. If such an unfortunate occurrence is to be prevented action must be immediate.



Five days later the bacteriological investigation of the blood was repeated, the patient having no objection. Four cubic centimetres of blood were distributed in five flasks, each containing 300 cubic centimetres of pepton-broth. Two of the flasks remained sterile; three became turbid; of these, two contained in pure culture a motile bacillus which further investigation proved to be identical with the one isolated from the stools—viz., the bacillus paratyphosus B. The third flask contained in pure culture a coccus with the characters of the pneumococcus. This case is very similar to those described by Baduel of mixed infection of pneumococcus and bacillus typhosus.

CASE 4. *Paratyphoid fever and typhoid fever.*—The patient was a man, aged 36 years, of German nationality. He had lived in Ceylon for 15 years. There had been no previous illness of importance. At the end of May, 1906, he began to complain of lassitude, headache, and loss of appetite. I saw him on the 28th. His tongue was fairly clean and the spleen was slightly enlarged; there were no roseola spots. On the following day I examined his blood for Widal's reaction with negative results; having, however, little doubt that it was a case of typhoid fever, I had him removed to a nursing home. The course of the fever is shown in the accompanying temperature chart. The disproportion between the pulse-rate and the temperature will be noticed at once; even when after three weeks the temperature dropped to nearly normal, the pulse remained very frequent. In my experience this sign renders the prognosis much less favourable. The patient had two very serious intestinal hemorrhages in the third week. He died in coma after a prolonged illness.

The first bacteriological examination was made on the seventh day of the disease. The stools were collected in a large sterile Petri dish and plated, using the MacConkey medium. All the white colonies which developed were further investigated. The bacillus typhosus and the bacillus paratyphosus B were isolated. The examination of the faeces was repeated twice—once in the third week and once three days before death. The result was the same. On one occasion two strains of the bacillus typhosus were grown: one rendered litmus milk alkaline after 36 hours; the other rendered the medium strongly acid permanently; as regards other culture characters and agglutination tests both strains were identical. The urine was examined bacteriologically twice, on the twelfth and fiftieth days of the illness; on both occasions the bacillus paratyphosus B was grown.

Agglutination tests of the blood gave the following results. On the seventh day of the disease: bacillus typhosus, dilution 1 in 10 negative; bacillus paratyphosus B, dilution 1 in 10 negative. On the seventeenth day of the disease: bacillus typhosus, agglutination limit 200; bacillus paratyphosus B, agglutination limit 300. On the forty-sixth day of the disease: bacillus typhosus, agglutination limit 800; bacillus paratyphosus B, agglutination limit 1000.

The results of the absorption tests carried out according to my method¹ on the forty-sixth day of the illness are collected in the following table:—

	Agglutination limits before absorption.	Agglutination limits after absorption of the typhoid agglutinins.	Agglutination limits after absorption of the paratyphoid agglutinins.
Bacillus typhosus	800	nfl.	800
Bacillus para-typhosus B ...	1000	1000	nfl.

The result of the absorption test clearly shows that the blood contained *specific* agglutinins for each bacterium and excludes the possibility of the case being one of typhoid fever with the presence of the bacillus paratyphosus B as a mere saprophyte. Both germs had part in the etiology of the infection and the case is to be considered, therefore, a mixed infection of paratyphoid and typhoid fevers similar to the cases recorded in Europe by Wagner and Conradi, Boycott and Gachtgens.

Conclusions.—1. Ceylon must be included among the countries where paratyphoid fever is endemic; both types

¹ The technique to be followed in performing the test may be found in my original paper (Zeitschrift für Hygiene, 1902, p. 1), or in the publications of Kolle and Heich (Die experimentelle Bakteriologie, 1905), or Boycott (Journal of Hygiene, 1905), &c.

of the disease, paratyphoid A (Brian and Kayser) and paratyphoid B (Shotmüller), are met with. 2. The disease is clinically indistinguishable from typhoid fever, though generally it runs a milder course. 3. In the case of paratyphoid A, which ended fatally, intestinal ulcers were found identical with typhoid ulcerations. 4. Cases of mixed infection are apparently not rare.

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A CASE OF TRANSPOSITION OF THE VISCERA.

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SINCE 1643 only about 200 cases of this interesting condition have been reported, so that the following case may be said to possess the virtue of comparative rarity.

The patient, an infant, aged 12 months, was admitted to the Hospital for Sick Children, Newcastle-on-Tyne, under the care of Mr. T. G. Ouston, suffering from a mastoiditis which proved to be of a chronic tuberculous type and associated with other tuberculous lesions in one leg and both arms. The condition of the child prevented any treatment beyond temporising and death ensued later from tuberculous meningitis.

At the post-mortem examination the following interesting condition was able to be investigated. The heart, of about normal size, lay in the centre inclining to the right, with its apex one inch from the middle line. The right ventricle had hypertrophied walls, simulating those of an ordinary left ventricle. The left ventricle was smaller than an ordinary right ventricle. The organ being kept for hardening as a permanent specimen was therefore not opened so that the condition of the interior was not ascertained. As regards the lungs, that on the right side possessed two lobes, the anterior border having the usual outline of the left. The lung on the left side, with three well-marked lobes, had an uninterrupted anterior border. The oesophagus lay to the left of the aorta in the posterior mediastinum till near the diaphragm, where it crossed that vessel and was then situated to the right of the middle line. The stomach occupied the right hypochondrium and the duodenum proceeding to the left and being reflected round the head of the pancreas turned back towards the right. The vermiform appendix was situated in the left iliac fossa, the ascending colon necessarily being on the left side; the descending colon on the right; the sigmoid flexure in the right iliac fossa, and the rectum commencing from the right side. The foramen of Winslow was on the left side. The liver was normal but was situated on the left side. The spleen was also normal but on the right side. The pancreas was reversed, with its head on the left side and its tail on the right. The left crus of the diaphragm was longer than the right and inserted lower. The kidneys were both normal but the right one was higher than the left. The left suprarenal gland was triangular in shape and the right one was filiform; both were about normal in size for the age of the subject. The arteries and veins showed complete transposition in every detail. The aorta arose from the right ventricle, arched round to the right, and extended down the right side of the vertebral column. The innominate artery was on the left side, having the left recurrent laryngeal nerve reflected round it. On the right side was a common carotid and subclavian artery. The recurrent laryngeal nerve on the right side was unfortunately cut, so that it could not be traced. The long renal artery and intercostals were, of course, on the left side. The pulmonary artery came off the left ventricle and gave three branches to the left lung and two to the right. The veins were correspondingly transposed. The right innominate vein crossed over to the left side where, joining the short left innominate, it formed the superior vena cava, which entered the left auricle. The right renal vein was the longer of the two and into it

emptied the right spermatic vein. The left spermatic vein entered the inferior vena cava at the point just below the junction with it of the left renal vein. The thoracic duct was on the right side.

On consulting the literature available on the subject all the cases published up to 1895 amounted to 190, which number was collected by Pic. The earliest reported case was in 1643, occurring at Rome. Complete transposition is the rule, and usually with no other malformations present. Males figure more largely than females in the cases reported. The unusual condition does not in any way inconvenience those affected, few of them being aware of its existence.

The causes of *situs inversus* I do not intend to go into but would refer anyone who is interested in the subject to a very excellent *résumé* of the opinions of different authorities in an article by Arnell in the *American Journal of the Medical Sciences*, Vol. OXXIV., 1902.

I should like to take this opportunity of thanking both Mr. Ouston and Dr. R. A. Bolam for permitting me to publish the case.

Leith.

THE VISUAL EFFICIENCY OF THE UN-CORRECTED MYOPE.

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VISUAL acuity, in the generally accepted sense of the term—i.e., the acuity of central or foveal vision—is only one out of many factors which must be taken into consideration in determining the visual efficiency of a given patient, meaning by the latter term the efficiency of the individual from the point of view of sight to perform the various acts and functions of life. In the majority of cases visual acuity is the most important factor, but circumstances may be such as to relegate it to an inferior position. Of the well-nigh innumerable factors which play a part in visual efficiency, many, and amongst them visual acuity, must be regarded from two standpoints, the physical or optical and the physiological. Much misapprehension and extremely erroneous deductions have arisen from ignoring this essential fact. The optical problem itself is much more complex than is often suspected and seeing that it is fundamental, being conditional to many factors in the physiological problem, it is the more necessary that it should be rightly apprehended. It will be well, therefore, to discuss the visual efficiency of the uncorrected myope by the enumeration and valuation of the various physical or optical and physiological (and pathological) conditions of his vision.

Taking as an example a person with myopia of 9 D. the optical conditions will vary according to the nature of the myopia. It is usual to regard such myopia as being invariably due to elongation of the eye, axial myopia, as it is called. Though stretching of the posterior segment of the globe is undoubtedly the most prominent feature in these cases it is probably more frequently than is generally thought, accompanied by some flattening of the cornea, slight displacement of the lens, and possibly some abnormality in the curvature of the lens surfaces. The condition may, indeed, be a complicated one anatomically, resulting in a combination of axial myopia and of curvature myopia, the latter itself made up of complex components. We are at once brought face to face with the intricacy of the problem and the danger of theoretical deductions, for the optical conditions of axial and curvature myopia—to leave out of the question the possible displacement of the lens—are quite different.

Bearing in mind the possibility of error from this source we will consider that the myopia is purely axial. With an axial myopia of 9 D. the posterior wall of the globe is stretched, so that the retina is displaced backwards to the extent of three millimetres as compared with the normal emmetropic eye—i.e., the antero-posterior diameter of the eye measured from the surface of the cornea is 26 millimetres instead of 23 millimetres. Under the conditions which have been accepted the anterior segment of the eye-ball is normal in every respect. Consequently, parallel rays of light falling upon the cornea

23 millimetres behind it. They will then cross and continue to diverge from each other until they fall upon the retina three millimetres farther back. Hence the image of a distant object, more than six metres away for example, which would have been a sharp inverted image at 23 millimetres, is now blurred owing to the divergence of the rays. Thus far the conditions may be fairly well simulated by a photographic camera. If a distant object is photographed on a sensitised plate situated slightly behind the position of the principal focus of the lens an inverted blurred image results, which is not unlike the retinal image formed in an axially myopic eye. It is by no means justifiable to regard this as other than a very imperfect analogy. It must be remembered that the conditions of magnification are totally different, all the refracting media are different, and the screen is flat instead of being approximately spherical.

Two factors enter into the consideration of the amount of blurring in the myopic eye—viz., the degree of myopia or excess of the axial measurement of the eye over 23 millimetres and the size of the pupil. The image of a spot of light is a diffusion circle, the diameter of which varies with the diameter of the pupil in accordance with the rules which obtain in all optical instruments. In the myope the pupils are usually larger than in emmetropic eyes. Hence the blurring of the image is greater than would be the case with a small pupil. On the other hand, it must be borne in mind that the relative increase in size of the pupils is diminished as compared with the normal eye when the illumination is decreased, consequently there is little increase of blurring due to this cause under feeble illumination. The size of the pupils varies in different myopes; if they are very small, e.g., under eserine, the circle of diffusion becomes very small, so that clear vision may be obtained irrespective of the degree of myopia; of course in these circumstances the image is very feebly illuminated. It is this condition which is induced artificially by the dangerous method of improving the vision of the short-sighted by massage—"without the use of glasses." The amount of massage necessary to attain this end involves risks to the eye which no responsible practitioner would venture to run; moreover, the effect is transient. Stenopæic vision having the same effect as constriction of the pupil, can, however, be attained by other means. By screwing up the lids their margins become the "pupil of entry" of the optical system, the image of a point of light being transformed into a sharply defined line. In this manner distant vision may be very markedly improved, a fact known from time immemorial, accounting, in fact, for the term "myopia." This method of improving vision without the use of correcting glasses is of prime importance in estimating the visual efficiency of an uncorrected myope.

The distance of objects from the eye of course greatly influences the retinal image. Thus, in the emmetropic eye without accommodation the size of the circles of diffusion increases directly as the object is brought closer; the same occurs to a less degree in the hypermetropic eye. In the myopic eye the increase is more rapid within the far point of the eye; at the far point a clear image is formed upon the retina. The effect due to this cause is, however, much modified as regards visual efficiency by the increased size of the image. In all cases as the object is approached the size of the retinal image increases and this may more than counteract the want of clearness due to imperfect focussing. Hence young patients with a high degree of hypermetropia often hold their books very close to the eyes, like myopes, in the same manner and for the same reason that people with corneal nebulæ do.

It is necessary to point out that with a constant size of pupil the luminosity of the retinal image is unaffected by approaching the object nearer to the eye, since the increase in the amount of light according to the square of the distance is spread over an area which is increased according to the square of the radius of the circle of diffusion. This rule does not apply to punctate images; consequently the more accurately the image is focussed upon the retina the brighter it will be. The large pupils of myopes expose the less accurately curved peripheral portions of the cornea and lens, thereby producing a certain amount of aberration which further tends to distort the image. The difference produced by this cause on diminishing the illumination will be less than in the emmetropic owing to the relatively greater dilatation of the pupils in the latter in these circumstances. It is unnecessary to discuss the effects of spherical and chromatic aberration here.

The physical factors which have been considered can be

estimated with mathematical accuracy if the requisite data are known. Enough has been said, however, to show that the conditions are so variable even in eyes with the same degree of myopia that only a very limited amount of accuracy is possible in the absence of exhaustive investigation of the individual patient. This is true to a much greater extent of the physiological factors. Setting aside absolutely pathological features which are so common in cases of high myopia—e.g., dense vitreous opacities, patches of choroidal atrophy, macular defects, &c.—there are yet changes in the myopic eye which seriously interfere with a valid appreciation of its probable visual efficiency. Most of these changes militate against visual efficiency, though some may even be favourable in certain circumstances. It is a fact that in high myopia the visual acuity may be less than normal with the most perfect optical correction, and that, too, apart from obvious changes in the media or fundus. This is seldom the case in myopia of moderate degree, e.g., up to 9 D. or 10 D. In myopia of more than 6 D. the field of vision not unfrequently is somewhat contracted for white and red. It is noteworthy here that it is the more luminous parts of the spectrum which are most involved, and this may account for the fact that many myopes seem to see better relatively even than emmetropes in a dull light, a most important consideration in estimating their visual efficiency under such conditions.

Over and above the factors already mentioned there is a psychological factor which is quite individual in its manifestations and in no small degree influences the patient's capabilities. The myope is usually of a studious turn of mind. Whether this be cause or effect in the moderate degrees of myopia need not be argued here. There is little doubt that in the higher degrees, which often begin early and increase rapidly, the dimming of the outer world tends to concentrate attention upon near objects and fosters introspection. How far this tendency will be cultivated depends largely upon the mental capacity of the individual and has nothing to do with the physical and physiological concomitants of myopia *per se*. In the lower classes, amongst whom the very high degrees of myopia are as common as amongst the studious, it has little or no effect, and it is astonishing how slightly these people seem to be inconvenienced in their daily life by their defect. It is by no means uncommon to find patients in a large out-patient clinic who have reached adult life, have very high degrees of myopia, and have never sought advice before. I have known patients with 18 D. or 20 D. of myopia who have never been corrected, yet have walked about in the crowded thoroughfares of the city and East London with impunity and apparently little difficulty. Not only so, but they have rejected any correction whatever, in spite of manifest improvement in central vision when tested with glasses. They have become so accustomed to their large faintly illuminated retinal images that they are hopelessly at sea with the relatively sharp, bright images which the glasses produce. This is the most important, though not the only, reason why very high myopes almost invariably prefer a considerably lower correction than the actual amount of their myopia would indicate.

There are other less potent factors which have not been considered. Enough has been mentioned to show how fallible must be any deduction as to the visual efficiency of any given myope in the absence of a thorough and exhaustive examination of the individual himself.

Wimpole-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF PRIMARY CHANCRE IN THE NOSTRIL.

BY ASLETT BALDWIN, F.R.C.S. ENG.,
SENIOR ASSISTANT SURGEON TO THE WEST LONDON HOSPITAL.

THE patient, a married woman, aged 26 years, went to the West London Hospital complaining of great pain and swelling in her face. She looked, and said she felt, extremely ill. The orifice of the right nostril was much larger than that of the left. About three-quarters of an inch up the nostril a slough was visible. When this was

removed a red, livid mass was laid bare which quite occluded the passage. The right side of the nose, the right cheek, the right side of the lips (especially the upper), and the glands beneath the right side of the jaw were very much swollen. The swelling of the parts caused epiphora. There was a well-marked secondary rash on the body.

Five months previously the patient's mother, aged 55 years, who lives in a neighbouring house, developed a typical specific throat. This was followed by an intense secondary rash, which has now (July, 1906) somewhat faded but is still well marked on the face. There is also iritis present in the right eye. Nine months previously the granddaughter of the patient's mother, aged 11 years, who lives with her, had a specific throat and rash. She now (July, 1906) shows no sign of the disease. As far as can be ascertained these two last patients showed no primary sore.

The sequence of events was, the granddaughter, aged 11 years, caught the disease first; how, we cannot find out. Her grandmother caught it from her; and finally, my patient caught it from the latter. Although she does not live in the same house she was often in and out of it and frequently took her meals there.

As cases of primary chancre in the nostril are very rare I thought this worth publication. The series shows the importance of warning patients who have contracted syphilis against the danger of infection of other people. It is a matter which I know is very often neglected and ought never to be omitted. All three patients were shown by my friend and colleague, Dr. H. J. Davis, at the Laryngological Society of London.

Manchester square, W.

NOTE ON A CASE OF HÆMATURIA DUE TO SALICYLATE OF SODIUM.

By J. D. MARSHALL, M.B. VICT., M.R.C.S. ENG.,
HOUSE PHYSICIAN, VICTORIA HOSPITAL FOR CHILDREN, CHELSEA.

THE patient, a girl, aged ten years, was admitted on Oct. 25th, 1906, to Dr. H. D. Rolleston's ward in the Victoria Hospital for Children. She had been suffering from acute articular rheumatism for three days previously to that on which she was admitted; this was the first attack of rheumatic fever and the only illness that she had previously suffered from was measles when an infant. There was a family history of rheumatism; her father frequently had rheumatic attacks and her brother was a patient at this hospital in November, 1905, suffering from rheumatic fever and chorea. The usual symptoms of acute articular rheumatism were present; the ankles, the knees, and the hip-joints were painful and the skin over the right ankle was reddened. Endocarditis was also present, probably quite recent. The heart was very slightly enlarged. The temperature was 101.2° F. and the pulse was 120 per minute. A purgative was given and then 15 grains of sodium salicylate with double that amount of sodium bicarbonate made up with chloroform water every four hours; this was given for four days, when the child became delirious and vomited twice. The hallucinations were not unlike those of delirium tremens. The salicylate was at once withdrawn and the delirium then very quickly passed off. On the fourth day after admission the temperature, pulse, and respirations were normal.

On Nov. 8th the patient again complained of pains in the joints and salicylates were again given (seven grains in water three times a day). After taking this for two days she again vomited. There was no delirium but the urine contained blood in sufficient amount to give it quite a deep red colour; previously to this the urine had contained neither albumin nor blood. She also complained of severe pain along the left iliac crest and for about one inch above and below it; there was also much tenderness on palpation in the left renal region. No pain at all was caused by movement of the left hip-joint. Salicylates were discontinued on the 11th. The quantity of blood in the urine rapidly diminished in amount and on the 15th the urine was clear and contained neither blood nor albumin; the pain had also disappeared. This pain, which extended from the left loin to the left groin and was very marked along the anterior part of the iliac crest, in addition to hæmaturia and vomiting, presented symptoms not unlike those of renal calculus, but as the patient had never had similar symptoms previously, and the fact that all disappeared when salicylate of sodium was withheld, would

suggest that drug as the cause. The pain was in all probability purely a "referred pain" from the kidney, as all along the painful part the skin was very hyperæsthetic, quite as much pain being caused by lightly pinching up the skin as by moderately heavy pressure. It is remarkable, however, that all the signs and symptoms of kidney irritation were confined to one side.

The patient evidently cannot tolerate salicylates, as first these caused delirium and vomiting, and on the second administration hæmaturia, vomiting, and pain. She has remained quite free from pain since Nov. 15th. She now (January) has a mitral systolic and mid-diastolic murmur; the systolic murmur is conducted to the axilla and back. Hæmaturia due to ordinary medicinal doses of salicylates has not, I believe, been frequently seen, or at least recorded, by English observers. It has occurred in salicylism, but probably rarely with such a small dose as that given to this patient.

A Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamprimum et morborum et dissectionum historia, tum aliorum tum proprias collectiones habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ANCOATS HOSPITAL, MANCHESTER.

TWO CASES OF LARGE VENTRAL HERNIA.

(Under the care of Mr. E. STANNORE BISHOP.)

CASE 1.—The patient, a female, aged 37 years, was admitted to hospital on July 30th, 1906. Six years previously to admission she had had ventrofixation performed for prolapse of the uterus. She was a large, loosely built, flabby woman, with great development of subcutaneous adipose tissue. This operation had been followed by supuration of the abdominal wound which necessitated her retention in hospital for over a month. The following year she had undergone an operation for hernia at the site of the wound which was unsuccessful; this was evident before her discharge and ever since she had worn a belt which, however, failed entirely to support the hernia. On her admission one-half of the abdominal contents appeared to lie immediately beneath the skin which formed an immense pouch over the front of the lower half of the abdomen. It was impossible to reduce the hernia completely; perhaps one-third of the whole could be returned, but the remainder was evidently adherent to the interior of the sac and could not be reduced; the opening was a wide one and when part of the extruded gut had been replaced it easily admitted all the four fingers of the hand. At its widest diameter when full the sac measured 23 inches transversely by 13 inches vertically; the opening measured at the time of operation three and a half inches from side to side, and extended from the pubes to two inches below the umbilicus. On several occasions during the six years of its existence the patient had suffered from pain in the mass and vomiting; she had also been the subject of "windy spasms." The action of the bowels had been irregular and she was totally unfitted for any work.

At the operation on August 9th, 1906, a curious state of things was found: the skin over the protrusion was brown and wrinkled; a large elliptical piece was removed; the sac thus laid open was lined throughout with peritoneum; adherent to this at many points was a very fat omentum in which were several harder, encapsuled lipomata; a great amount was tied off and removed; its weight after removal was two pounds three ounces. The intestines themselves were not adherent; after the removal of the omentum they could all be reduced into the abdomen proper. The opening between the two cavities precisely resembled the opening into the true pelvis, so much so that a bystander suggested that the sutures had been passed through the edges of the psoas muscles and that it would be impossible to bring them together. The peritoneum covering one edge was divided so as to expose the fibrous lamina of the rectus sheath below; that on the opposite side was left untouched.

Strong iodine catgut was used in mattress stitches, and still further to strengthen the line of union a second layer was superposed upon the first. When the opening was closed a large cavity remained, the subcutaneous fat having been opened up as far as the anterior superior iliac spine on the right; this cavity was lined throughout by peritoneum; no attempt was made to remove this, but a drainage-tube was brought through the side at its lowest point and the large skin incision closed. There were some sickness lasting for a few hours and for a day or two some difficulty in breathing, due probably to the use of ether in anaesthetising, but all this rapidly subsided and her recovery was complete. She left the hospital well and with the long wound perfectly healed on Sept. 7th.

CASE 2.—The patient, a male, aged 65 years, was admitted to hospital on May 24th, 1906. In the year 1900 this man suffered from an umbilical hernia; this was operated upon in June of that year and the operation was followed by suppurative. Such an occurrence is always in my experience followed by relapse; it was so in this case. Two years later he returned to the hospital with a small ventral hernia to the right of the scar; he had also at this time a fairly large scrotal hernia, the contents of which were irreducible, being apparently adherent to the sac wall. The scrotal hernia, about which he had not previously complained, he now declared had been present for 20 years; its length from the external ring to the lowest point of the scrotum was 11 inches; its circumference 20 inches. The skin over it was pigmented but not thickened. On March 6th, 1902, the ventral hernia was dissected out; there were two medium-sized sacs with fascial openings, each of the size of a shilling, lying side by side in the line of the scar with a narrow fascial bridge between; after removal of the peritoneal sacs and closure of their openings, the fascia on the left was cleaned from fat for a quarter of an inch and then the peritoneo-fascial layer on the right side was brought over this and united to it by mattress sutures; the skin was then united over all. In 13 days the external sutures were removed; primary union had taken place. Six days later the scrotal hernia was operated upon; the scrotum contained large intestine which was closely adherent to the sac wall. After reduction the opening in the abdominal wall extended the whole length of the inguinal canal; the peritoneal sac was twisted, ligatured, its excess cut away, and the stump carried upwards to a point one inch higher up on the interior of the abdominal wall and fixed there; then the conjoined tendon was drawn down to Poupart's ligament and united to it by several silk mattress sutures. A drainage-tube was drawn through an opening made at the lowest point of the scrotum and another was placed at the upper and outer angle of the inguinal wound; the skin wound was then closed and sealed with celloidin. There was a large amount of ecchymosis of the scrotal tissues and this broke down later. The deeper union remained firm, but the interior of the scrotum sloughed, requiring reopening throughout. The testis on this side necrosed and was removed. Ultimately two months after the operation the whole was soundly healed.

The patient returned to hospital on May 20th, 1906, with a moderate-sized ventral hernia in the line of the old ventral scar; this, he said, had shown itself within two or three weeks after leaving the hospital and had been gradually increasing since. A double opening was found in the muscular wall; these openings were each of about the size of a five-shilling piece and were separated by a strand of fibrous tissue; this was divided and the two openings were thrown into one. The cavities were filled by non-adherent small intestine which was easily reduced. The man was very stout and the tension of the muscular wall was great. It was evident that an endeavour to bring the edges of the opening together laterally would fail or, if it were possible, that they could not be made to overlap; the tension upon the sutures would be such that they would almost certainly cut out and the hernia return worse than before. There was some enteroptosis and it was thought that approximation of the edges from below upwards would not only be much easier, since the sutures so applied would not have to counteract the lateral pull of the oblique and transversales muscles, but to improve the tendency to falling forward and downward of the abdominal contents. The sutures were accordingly introduced in this manner with the best results; not only was a firm and extensive union obtained, but the abdominal wall lost its pendulous appearance and the man himself was much more comfortable. The wound was completely healed

by the tenth day and there have been no signs of relapse; on putting the abdominal muscles into action the scar retracts firmly.

Remarks by Mr. STANMORE BISHOP.—The method of closing a ventral hernia detailed above may or may not be original; it is probable that it is not, but I have not seen it previously described; many of the cases which have come under my own observation have occurred in stout persons in whom the intra-abdominal tension has been great; the endeavour to bring the muscular walls together from side to side is in such cases resisted not only by the contraction of the lateral muscles but by the shortening which always takes place in muscles which have been accustomed to symmetrical resistance as the obliques and transversales are when that resistance no longer exists; if the attempt to bring them together succeeds there ensues for such patients, after their recovery from the anaesthetic, a period of much discomfort; I have seen such patients strain violently for some days; I have often thought also that sickness and retching were much more marked and it seems probable that it must require some time for the stomach and intestines to become accustomed to the decreased space at their command; in this and in another case of which I have notes, treated by closing the opening by sutures applied from below upwards, these symptoms were conspicuous by their absence, the resulting scar, not being dragged upon during the plastic stage, is also much less likely to yield again and therefore relapses are not so much to be feared. In both cases a pendulous abdomen coexisted; the effect in lifting up the lower segment was markedly beneficial.

The first case is reported because it is the largest ventral hernia I have ever seen; at the operation half the abdominal contents were outside the true abdominal wall.

BRADFORD ROYAL INFIRMARY.

TWO CASES OF PURPURA HÆMORRHAGICA, ONE WITH A PECULIAR RETINAL CONDITION; AND A CASE OF RANT'S DISEASE TREATED BY THE X RAYS.

(Under the care of Dr. R. H. CROWLEY, Dr. R. HONEYBURN, and Dr. H. J. CAMPBELL.)

FOR the notes of the cases we are indebted to Dr. A. W. Falconer, late house physician.

CASE 1.—The patient, a female, aged 22 years, was admitted into the Bradford Royal Infirmary under the care of Dr. R. H. Crowley on April 3rd, 1906. Three weeks before admission she began to have pain in her joints and muscles. She attended as an out-patient and thought that she was getting better until the day of admission when she had violent epistaxis lasting the whole day, which was only stopped by plugging. She had no abdominal pain and her bowels were regular. On admission the temperature was 102.6° F., the pulse was 120, and the respirations were 28. The patient was a fairly nourished but intensely anæmic girl, the mucous membranes being almost colourless. There were two or three small glands of about the size of peas in the left inguinal region and one or two in the left axilla. There was no rash. A hæmic bruit could be heard at the apex; nil in lungs. The liver and splenic dulness were normal. The abdomen was slightly full; there was no tenderness. The optic discs were very pale and the vessels were small. There were no hæmorrhages. Blood examination showed: hæmoglobin, 20 per cent.; white cells, 12,500 per cubic millimetre; and red cells, 1,093,000 per cubic millimetre (see table). On the 5th there had been considerable hæmorrhage from the gums round the roots of all the upper teeth. There was no ulceration of the gums, though they looked soft and sodden. The breath was very offensive. On the left thigh was one large suggestion about two inches by half an inch. The fundi oculorum were normal. On the 6th the temperature was 101°. There was still slight epistaxis. On the dorsum of the left foot there was a discolouration of the skin evidently due to deep hæmorrhage. A few of the cervical glands on the left side were as large as peas. As regards the fundi oculorum, in the left macular region there were several small irregularly shaped patches. They were greyish white in colour, were not raised, and the largest of them was about one-sixth of the diameter of the disc. There was no sign of hæmorrhage. On the 7th there was a small hæmorrhage in the left fundus below the disc. The spleen was now distinctly palpable. On the 8th the white patches were present

in both macular regions. On the 10th the temperature was 101.4°. The spleen had not enlarged since the last note was made. The glands in the posterior cervical region on the left side were now very numerous and of about the size of peas. There were small hæmorrhages in both fundi. On the 15th there was fresh hæmorrhage from the gums. The temperature since the last note had ranged from

Date.	Hæmoglobin, per cent.	Red cells, per cubic millimetre.	White cells, per cubic millimetre.	Polymorpho-nuclei, per cent.	Lymphocytes, per cent.	Erythrocytes, per cent.	Leucocytes, per cent.	Monocytes, per cent.	Myelocytes, per cent.
4/4/06	20	1,093,000	12,600	70.0	7.0	23.0	—	—	—
5/4/06	20	—	20,312	67.0	7.0	23.0	1.0	2.0	—
6/4/06	—	—	—	79.0	4.0	12.5	1.5	1.0	2.0
11/4/06	20	825,000*	1,250	88.5	7.5	—	0.5	0.5	3.0
15/4/06	23	925,000†	15,625	86.5	3.0	—	2.0	—	8.5
17/4/06	20	740,000†	7,031	91.0	6.0	—	—	—	3.0
1/5/06	23	1,225,000	4,082	72.0	18.6	8.6	0.6	—	—
15/5/06	45	3,600,000	6,150	—	—	—	—	—	—

Case 1.

Case 2.

Case 3.

17/8/06	75	4,200,000	5,000	—	—	—	—	—	—
19/8/06	—	—	—	44.0	10.5	42.0	3.0	0.5	—
20/8/06	68	—	—	58.0	27.3	12.0	2.0	0.6	—
21/8/06	48	—	—	61.5	19.3	14.6	4.0	0.6	—
22/8/06	48	—	—	69.0	9.0	21.0	1.0	—	—
23/8/06	44	3,000,000	5,368	64.0	14.6	19.3	1.3	—	0.6
24/8/06	35	2,140,000	6,200	77.6	6.0	14.6	—	1.3	0.6
26/8/06	40	2,440,000	10,625	65.0	22.0	12.0	1.0	—	—
5/9/06	40	2,640,000	7,500	44.0	40.0	12.0	3.0	—	1.0
14/9/06	54	—	—	47.3	25.3	22.6	4.5	—	—
20/9/06	52	—	—	43.0	25.0	20.0	6.0	1.0	—
25/9/06	62	3,170,000	5,000	43.0	39.5	14.6	3.0	—	—
9/10/06	72	3,800,000	3,750	48.5	26.5	24.0	1.0	—	—
16/10/06	80	4,200,000	6,000	40.0	34.5	17.5	7.5	0.5	—
17/11/06	100	5,200,000	4,000	36.0	35.0	24.0	5.0	—	—
11/9/06	40	3,300,000	6,250	—	—	—	—	—	—
21/9/06	40	—	—	56.0	36.0	3.5	3.5	1.0	—
10/10/06	40	—	—	55.3	30.0	12.0	2.6	—	—
31/10/06	35	2,620,000	3,650	53.5	24.3	10.7	8.0	3.5	—

* Large number of normoblasts.

† Normoblasts.

101° to 103°. On the 23rd blood from the median basilic vein was cultivated on bouillon with a negative result. On May 1st the patient's general condition had much improved since the last note. The temperature had been running lower and there had been no more hæmorrhages. The cervical glands could no longer be felt; there were still a few palpable glands in both axillæ and in both inguinal regions. The spleen could not now be palpated. On the 15th, as regards the fundi oculorum, the white patches in the macular regions were becoming very much fainter. On June 11th the patient had very much improved. The temperature had been normal for the last ten days. There was no longer any trace of the white spots in the retina. The patient insisted on going out.

CASE 2.—The patient, a female, aged 21 years, was admitted into the Bradford Royal Infirmary under Dr. R. Honeyburne on August 17th, 1906. On the day before admission the patient began to spit blood and continued to do so till admission. On the same day she noticed that she was covered with spots. She had had no pain in her joints or her abdomen. On admission the temperature was 99° F., the pulse was 96, and the respirations were 20. The patient was a well-nourished girl, moderately anæmic. There was a purpuric eruption all over both legs and thighs and to a less extent over the abdomen, chest, and arms. There were also numerous ecchymoses on the legs, some as large as a four-shilling piece. The gums had continued to bleed profusely since admission, the hæmorrhage coming from the bases of all the teeth. There was no sponginess of the gums.

There were no palpable glands except a few in the posterior cervical regions. With regard to the abdomen there was no tenderness and the liver and splenic dulness were normal. The heart and lungs were normal. The nervous system was normal, as also were the fundi oculorum. On the 19th the eruption was rather more marked; on the inner side of the left thigh were several large sallowings and over both tibiae were distinctly raised nodules. There had been slight abdominal pain and the bowels had moved twice on this date, the motions being almost pure red blood. The gums were still bleeding. Cultures from blood taken from the median basilic vein on bouillon remained sterile. On the 20th there was still some hæmorrhage from the gums. On the 21st the hæmorrhage from the gums had again become profuse and the motions had again showed red blood. The patient was much weaker. There were no hæmorrhages in the fundi oculorum. On the 22nd there were profuse hæmaturia and considerable hæmorrhage by the bowel. The temperature, which had hitherto not been above 99°, rose to 102°. On the 24th the patient had had severe hæmatemesis of bright red blood. The hæmaturia still continued, though slight. From 8.30 A.M. she gradually became comatose and lay without taking any notice of anything and could not be roused. There was no paralysis and the corneal reflexes were present. At 8 P.M. the right corneal reflex was brisk but the left was quite absent. The hæmorrhages had stopped. On the 25th the patient was less comatose. There were now marked nystagmus and definite weakness of the left side of the face. On the 27th she was much better. All hæmorrhage had ceased and she was quite conscious. There was weakness of the left side of the face and of the left sixth cranial nerve. There were also marked blurring and some swelling of both optic discs. The temperature was 99°. On the 31st the patient continued to improve. On the previous night there was again a trace of blood in the urine. On Sept. 9th she had had severe abdominal pains and vomiting during the night but no hæmatemesis. On the 24th she again had severe abdominal pains and the temperature rose to 101°. There had been no hæmorrhages. Between this date and the 27th the patient had had a lot of abdominal pain referred to the umbilical region. There had been no vomiting and the bowels had been regular. The temperature was 101°. On Oct. 16th the temperature had been normal since the last note. The optic discs were now normal. There were marked weakness of the left sixth cranial nerve and slight of the left seventh, otherwise there was no paralysis. On Nov. 10th the patient was sent to a convalescent home.

CASE 3.—The patient, a male, aged 25 years, was admitted into the Bradford Royal Infirmary, under the care of Dr. H. J. Campbell, on Sept. 10th, 1906. Twelve months before admission the patient had had severe hæmatemesis, bringing up about a pint of dark blood. He had had no pain before or after. He was laid up for about five weeks, but since then he had had no trouble and had been able to continue at his work until a few days before admission when he had an attack of severe diarrhoea. There was no history of other hæmorrhages. On admission the temperature at night was 100° F., the pulse was 88, and the respirations were 24. He was a poorly nourished man; his mucous membranes were very pale. Over both cheeks and the whole of the forehead there were very darkly pigmented patches with sharp irregular margins. There was no excess of pigmentation elsewhere. There were small glands of about the size of split peas in both inguinal, both axillary regions, and both sides of the neck. With regard to the abdomen there was no tenderness. The liver dulness in the mammary line extended from the sixth rib to the costal margin. The spleen was felt extending downwards and to the right to within one and a half inches of the umbilicus. Its edge was smooth and hard and was not tender. No notch could be felt and it moved freely on respiration. The patient was exposed to the x rays over the splenic region for ten minutes every second day for two months without the slightest benefit. At the beginning of the treatment the blood was as follows: hæmoglobin, 40 per cent.; and red cells, 3,300,000 per cubic millimetre; after treatment it was: hæmoglobin, 35 per cent.; and red cells, 2,620,000.

Remarks by Dr. FALCONER.—Although the occurrence of hæmorrhages and optic neuritis is not unusual in purpura hæmorrhagica I can find no record of a case of hæmorrhages without previous hæmorrhages. The relative lymphocytosis which was very marked at first, so far as the hyaline corpuscles were

Case 1, although it was there soon replaced by an ordinary post-hemorrhagic polymorphonuclear leucocytosis, is unusual, and suggests the possibility that the white patches were of the same nature as those in lymphatic leukaemia which they very closely simulated in appearance.

I am indebted to Dr. Campbell for permission to publish Case 3, to Dr. Crowley for Case 1, and to Dr. Honeyburne for Case 2.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Discussion on the Diagnosis and Treatment of Laryngeal Cancer.

A MEETING of this society was held on Jan. 28th, Mr. C. A. BALLANCE, the President, being in the chair.

Sir FELIX SEMON opened a discussion on the Diagnosis and Treatment of Laryngeal Cancer. He commenced by referring to the great progress which had been made concerning the diagnosis and treatment of malignant disease of the larynx within the last quarter of a century. It was only by means of early diagnosis that this progress had become possible. He insisted on the diagnostic value of deficiency of movement of a vocal cord from which a suspected growth sprang. He discussed in detail the question of the microscopic examination of intralaryngeally removed fragments of a suspected growth previously to radical operation, and strongly maintained that such microscopic examination should, whenever possible, precede operation. Mere naked-eye examination even by the most experienced observer was very fallacious unless the case was quite advanced. With regard to treatment he entirely rejected intralaryngeal operation and pronounced thyrotomy in early cases of intrinsic laryngeal cancer as the operation *par excellence* for this class of growth. His own experience was founded upon 212 cases of malignant disease of the larynx seen in private practice between October, 1878, and the end of 1906. Of these 136 were intrinsic and 76 were extrinsic or mixed. No less than 177 occurred in men and 35 only in women. He drew special attention to the fact that, whilst the affection was so much more common in men than in women, in the male sex the intrinsic variety, and in the female the extrinsic were disproportionately more frequent, there having been 124 cases of intrinsic and 53 of extrinsic in men against 12 cases of intrinsic and 23 of extrinsic in women. He himself had performed thyrotomy in 34 cases (in one of them the operation had had to be repeated) of real or supposed malignant disease of the larynx. In eight of these the diagnosis had either been shown to be at fault or had remained doubtful. Twice the disease turned out to have been tuberculous and twice of the nature of an infective inflammation, in three cases the diagnosis had remained doubtful, and in one case the growth had turned out to be an innocent papilloma. Three out of these 34 ended by death, giving a percentage of 8.8 fatal results. Of the cases of microscopically verified malignant disease of the larynx, which were 25 altogether, one died and 24 recovered. One of these had been too recently operated upon to be of value for statistical purposes. Out of the remaining 23 cases, genuine local recurrence took place in three cases, giving a percentage of 13.6 recurrence. In one case the patient died from malignant disease of the liver five years after the operation. If this was regarded as a genuine recurrence, the percentage of recurrences would be 17.4. It was, however, considered quite an open question whether this case might not represent a genuine fresh reproduction of malignant new growth. If the question were considered in that light 20 cases would remain in which lasting cure was obtained, or a percentage of exactly 80. These results compared favourably with the results of radical operation for cancer in any part of the body. Out of these 20 cases the cure had lasted over 15 years in one case, in four cases between ten and 15 years, in four between five and ten years, in two over four years, in three over three years, in two over two years, in one just two years, and in one one year and ten months. The reasons were fully stated why in intrinsic cancer of the larynx the one year limit might justly be taken as denoting the critical time during which recurrence might be feared. In 11 of these cases the vocal results were exceedingly good, in five good or fair, and the voice was weak or

reduced to a whisper in four. He still adhered to the technique as stated by him in 1894 in THE LANCET,¹ but briefly described another method, different in several essential particulars, recently recommended by Professor Paul von Bruns of Tübingen. Coming next to hemi-laryngectomy, he expressed the view that this operation would become rarer in proportion as the diagnosis of intrinsic cancer of the larynx was earlier arrived at. He firmly believed that it would ultimately be employed only in cases in which the disease had already invaded the thyroid cartilage or in a few exceptionally favourable cases of extrinsic cancer of the larynx. If performed he thought that it would be better to remove the corresponding cervical lymphatic glands, even if these were apparently not diseased. Subhyoid pharyngotomy was briefly alluded to as being only available in a small percentage of cases. He described his own position with regard to the operation of total extirpation of the larynx as one equi-distant from prejudiced antagonism and from injudicious adulation. He unconditionally admitted the legitimacy of the operation and gladly registered the great diminution of the formerly terrible mortality, nor did he doubt that a few of the patients who had survived the operation for any length of time had been, and were, quite content with their lot. On the other hand, from what he had seen himself, in the majority of these cases life was usually extremely sad and in a very large proportion recurrence took place only too soon. He urgently asked for trustworthy statistics concerning this last-named question and strongly protested against total laryngectomy being undertaken where milder measures were sufficient. In conclusion, he pleaded again for early recognition of the disease in cases of intrinsic cancer of the larynx, by which alone the operator was able to effect a cure by means of simple thyrotomy, a less serious operation which left the patient much less disabled from leading a useful and comfortable existence. It might be possible some day to employ other means than the knife in these cases.

Mr. H. T. BUTLIN submitted an analysis of the results of operations he had performed for malignant disease of the larynx on 35 patients during the last 20 years. Nine of these patients had been operated upon prior to 1890 (seven by thyrotomy, one by infrahyoid laryngotomy, and one by hemi-laryngectomy) and of these three had died from the operation, three from recurrence of the disease, one from some other disease five years later, and two had remained well after three years, giving a total of three successes (33 per cent.) as judged by the three years' limit. The system of after-treatment adopted was of great importance and Mr. Butlin had divided his cases by this date on that account. Since 1890 he had introduced three important modifications into the after-treatment: (1) Hahn's feeding-tube was removed immediately after the operation instead of being left in for two or three days as formerly; (2) the patient was kept in the prone position with the head bent forward so as to avoid discharges running into the trachea; and (3) the patient was made to take liquid food like a dog or a horse with his head hanging over the edge of the bed, so that fluid passing into the trachea readily passed out again. Since 1890 Mr. Butlin had operated on 26 patients (21 by thyrotomy, one by hemi-laryngectomy, and four by laryngectomy). Of these, two had died from the operation, four had died from local recurrence, and one from cancer of the tongue; one had been lost sight of. In two of these patients local recurrence had occurred and 17 had continued well for three years and upwards, giving 65.4 per cent. successes based on the three years' limit. While endorsing Sir Felix Semon's preference for thyrotomy, Mr. Butlin could not help thinking Sir Felix Semon had drawn rather too gloomy a picture of the after-condition of a case of total extirpation (laryngectomy). Speaking of the difficulty in diagnosing malignant disease of the larynx, Mr. Butlin confirmed the desirability of removing a fragment for examination and he did not share the fears that had been expressed by different observers as to the danger of a spread of the growth thereby.

Mr. S. G. SHARTOCK submitted that in the matter of the preliminary histological diagnosis of laryngeal lesions the responsibility lay rather with the operator than the histologist. The positive histological diagnosis of carcinoma presented with few exceptions no difficulty. The result practically depended upon whether the piece of tissue removed by exploratory endolaryngeal operation was really a portion of the lesion or not. The histological diagnosis,

¹ THE LANCET, Dec. 29th, 1894, p. 1532.

however, might be difficult or impossible in the case of a papilloma in which a carcinomatous change had supervened and especially if the latter change had affected part only of the growth. In the case of ulcerating sarcoma, likewise, the differential diagnosis from granuloma might be impossible should the piece removed consist only of a superficial fragment which was the seat of infective inflammation. Intrinsic sarcoma of the larynx, however, was practically an unknown disease. The method of immediate histological diagnosis proposed by Mr. Butlin in the case of the tongue was inapplicable to the larynx; it was impossible to obtain a scraping from the floor of an ulcer *in situ* in order to determine whether it consisted of epithelial cells or otherwise. A piece of the lesion must be removed. As this was done without the use of a general anæsthetic the methods for making an immediate diagnosis, in order that the question of a radical operation might be determined on the spot, were not needed. For the making of an immediate diagnosis (should it be required) the fragment of tissue was too precious to risk the method of teasing; it must be cut into microscopic sections. The tissue could be cut on the freezing microtome in the fresh, unfixed state, though sections so made tended to open out in water and were not easily manipulated. The method of placing the tissue in a small beaker of distilled water and raising the latter to boiling point, after which it could be dipped into gum and cut at once on the freezing microtome, was not satisfactory; the picture was blurred. The most satisfactory method devised was to use a 10 per cent. formal solution in place of plain water in which to boil the tissue. When an immediate diagnosis was not requisite the material could be fixed in salt-formol or alcohol and acetic acid or potassium bichromate and acetic acid, and cut for diagnosis within 48 hours or less. Mr. Shattock preferred the freezing method to paraffin in such cases, for the reason that the orientation of the fragment was of the greatest importance, and on the freezing microtome this could be exactly insured; moreover, in the cut surface of the frozen block the limits of the epithelium, normal and morbid, could be accurately mapped out with the naked eye. In regard to the danger of a local inoculation from an endolaryngeal exploratory operation, this was a real one, should the cutting instrument pass through healthy tissue after traversing the diseased. The danger, however, was of no practical moment, for if a piece of the growth was so removed its nature would be diagnosed and a radical operation would be carried out before time elapsed for any inoculation growth to arise. To attempt the complete removal of a laryngeal carcinoma by a series of endolaryngeal operations only was unsurgical because unscientific and in this country the method was happily quite obsolete. The danger of setting up distant metastasis by an exploratory removal of tissue, he thought, must be extremely remote and could only arise were extensive and violent injury inflicted upon the contiguous structures. He could recall only one instance in which besides a rapid local infection, distal metastasis seemed accentuated by an exploratory operation. The case was one of subperiosteal osteoid sarcoma of the radius which was thought to be an inflammatory enlargement associated with necrosis. The swelling was incised and explored. A rapid local extension of the growth ensued and after death some of the pulmonary metastases found were of recent origin as though due more immediately to the exploratory operation. Such a disturbance of parts was altogether exceptional. No endolaryngeal exploration would be attended with such damage. The chief point raised by Sir Felix Semon, however, was the utility of such preliminary histological examinations. In the case of tumour-like formations of doubtful kind in other positions the practice was a recognised one, and at times it proved of the highest value. But Sir Felix Semon went further; he would apply it in all. To take the case of a neighbouring organ, the tongue, the diagnosis of carcinoma was made, in most cases, from the history and clinical characters. Now and then, even in the hands of the most experienced clinicians, a mistake would arise. And yet there was a certain palliation for the radical operation carried out upon such a mistake; for it was usually true that the lesion taken for a carcinoma was an ichthyosis, with papillary upgrowth, or a leucoplakia, conditions that not infrequently preceded the growth of a carcinoma. That was a matter not touched upon by Sir Felix Semon—the prophylactic surgery of malignant disease. They vaccinated against small-pox; why not operate against carcinoma? But even

if this principle was allowed in the case of the larynx there would still be a small residue of cases in which the proper method of treatment could be determined only by a preliminary histological diagnosis and it was for the sake of these that Sir Felix Semon would have all examined. The proposition compelled admiration but it was a counsel of perfection and like such it would be practised only by the few.

Dr. R. McKENZIE JOHNSTON (Edinburgh) referred to the case of a man, about 50 years of age, who was present at the meeting and who had been operated on 20 months before. Dr. Johnston advocated a preliminary investigation in all cases.

Dr. R. H. SOANES SPICER referred to cases of cancer of the mouth and throat treated by vaccine of bacillus neoformans. Several of these cases were entirely inoperable. Two of these cases, which had been under treatment since March, had made a very notable improvement. One patient was 78 years of age; his weight had improved, the ulcerated surface had become cleaner, and the increase of the growth had been checked.

Dr. HERBERT TILLEY, speaking of the diagnosis, referred to two cases of cancer which were diagnosed as chronic laryngitis, and the cancerous condition had made rapid progress under the escharotic treatment adopted. In cases of suspected malignancy it was most important that the larynx should not be irritated by caustic applications. He had operated on eight cases and he laid stress on thorough scaling of the teeth and rendering the mouth thoroughly aseptic before operation.

Sir FELIX SEMON, in reply, mentioned that it was not always possible without undue violence to remove fragments for examination, but he urged that it should always be done when possible.

CLINICAL SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Jan. 25th, Mr. H. H. CLUTTON, the President, being in the chair.

Dr. SEYMOUR TAYLOR exhibited a case of Acromegaly. The patient, a woman, aged 32 years, had suffered from increase in size in her hands and feet for about five years. The face was very large, the angle of the lower jaw was obtuse, the lips were pendulous, the ribs and clavicles were enlarged, and the case was otherwise typical in all respects. Her chief discomfort was dyspnoea on lying down at night. Treatment by pituitary extract had yielded negative results.

Dr. F. PARKES WEBER showed a case of Congenital Heart Disease with Cyanosis. The patient was a girl, aged 17 years. When she lay on her back a harsh systolic murmur could be heard all over the heart, but when she stood upright the murmur almost completely disappeared or became much fainter and markedly influenced by the respiratory movements, being best heard during inspiration.

Mr. J. R. LUNN showed a case of Fracture of the Tarsus, occurring in a man, aged 22 years. Some doubtful crepitus could be felt on admission on May 2nd. He stated that he could be jumped a depth of 15 feet, landing on his left foot. The x rays revealed a fracture of the astragalus and a piece of the bone was projecting on the dorsum of the foot. The foot and ankle were put up in a plaster-of-Paris splint which was removed on June 10th, when there was good movement of the ankle. The patient was discharged on July 15th walking well.

Mr. LUNN also showed a case of Achondroplasia. The patient was a man, aged 53 years, 4 feet 1 inch in height. The forehead was prominent; the bridge of the nose was rather deficient, and the eyes were deeply set. The legs were very bowed, there being great curvature of the tibia. The feet were short and square, with all the toes of nearly the same length. There was very little curvature of the bones of the upper limbs. The fingers were more nearly of the same length than normal. The middle and ring fingers diverged at the first interphalangeal joint. The intellect was good.—Dr. R. SOANES SPICER spoke of the cases of achondroplasia that came to the laryngologist with the diagnosis of adenoids on account of the depressed nose and peculiar facial features. Dr. BERTRAM L. ABRAHAM showed an unusual case of Enlargement of the Head in a male child, aged three years. Nothing wrong was noticed with regard to the head until the age of eight months. It then began to swell and continued

to do so for some four months. Dilatation of the vessels at the root of the nose was first noticed at 18 months and progressed since. The child was at present intelligent and well developed. The head was very large, bulging particularly above and to the back; the greatest circumference was 25 inches. On auscultation a systolic bruit was heard all over the head. The right fronto-parietal fissure was closed, but the left, the frontal portion of the sagittal, and both coronal fissures were patent. The left occipito-parietal region was larger than the right. There was venous dilatation over the glabella, involving the left upper eyelid, and descending to within three-quarters of an inch of the tip of the nose. The appearance simulated that of a circoid aneurysm. There was no other abnormal physical sign excepting a systolic bruit over the whole præcordia, loudest in the mitral area, and conducted into the axilla.—Dr. WILLIAM EWART pointed out that the head was not of a hydrocephalic shape, as it retained the normal form.

Mr. H. L. BARNARD showed a case of Successful Plastic Operation for a Syphilitic Perforation of the Hard Palate on the left side of the size of a sixpence. The patient was a man, aged 28 years. The perforation had been present six months. On August 16th, 1906, an -shaped flap was turned in from the right side of the palate and sutured to the freshened edges of the perforation. The flap was about three times the area of the perforation. Healing occurred well. Mr. Barnard remarked that the experience of modern rhinologists controverted the older views about the tendency of such operation wounds not to heal.—Mr. W. G. SPENCER thought that the truth lay between the two extremes and that they could not always expect good results. He described a method that had proved very successful in his experience.—Mr. CHARTERS J. SYMONDS described a modification of the operation. He was sure the results were much better than was previously considered to be the case. However, some forms gave very bad results; such were those in which the alveolar plate was destroyed and those in which the perforation was situate in the soft palate.

Mr. BARNARD also showed a case of Removal of a Stone from each Ureter for Double Pyonephrosis. The patient, a woman, aged 41 years, had had renal colic on both sides, but chiefly on the left, for four years and attacks of cystitis and pyrexia for three years. The radiographic report showed: (1) a stone of the shape and size of an almond in the right ureter opposite the fourth lumbar vertebra; and (2) another, smaller, in the pelvis opposite the fourth sacral vertebra. On Oct. 14th, 1904, the right ureteric calculus was removed through a lumbar incision. The wound in the ureter was closed with catgut. On Dec. 5th, 1904, the left ureteric calculus was removed through an incision in the left fornix of the vagina. The ureter was not sutured. The urinary fistula closed in ten days. The patient was at present well and strong and weighed 9 stones 10½ pounds. The urine was slightly turbid, contained pus, and was acid.—Mr. SPENCER discussed the difficulty of closing the ureter through the vagina.—Mr. BARNARD, in reply, mentioned a case in which the ureter had been pulled down with a hook into the vagina and the opening in it closed. It was important in such an event to use catgut, for it had been found that if silk were used another stone often formed at the site of the ligature. Replying to a question asked by Mr. C. H. FAGGE he said that he had not employed the separator in this case.

Mr. BARNARD also showed a case illustrating a Method of Diminishing the Raw Surface after Removal of Half the Tongue. The patient was a woman, aged 55 years. The right half of the tongue was removed by Whitehead's method. The remaining half of the tongue was doubled back so that the tip was brought in contact with the posterior third. Three catgut sutures were inserted. The advantages of this method were: (1) rapid healing and diminished raw surface; (2) smooth and rounded edge to the tongue; and (3) small scar. The disadvantages were: (1) local recurrence, if it occurred, would be in the middle of the tongue; and (2) the sensation of the tip of the tongue being referred to the throat. The last symptom had disappeared in this case.—The PRESIDENT said that he had employed this method for 23 years and was satisfied with the results thus obtained. Unfortunately, it was rare to get cases early enough for the operation to be suitable for them.—Mr. C. B. KETLEY remarked that an additional advantage of the operation was the diminished tendency to recurrence. The sooner and better a wound healed the less was the chance of recurrence.—Mr. CHARTERS SYMONDS said that he usually employed the method of stitching the edge of the wound to the mucous membrane on the dorsum of the tongue.

Mr. BARNARD also showed a Prostatic Knife for Incising the Floor of the Bladder in total Suprapubic Enucleation of the Prostate. The knife was similar to an adenoid finger curette but terminated in a blunt rounded blade. It fitted on the index finger. This was one method of overcoming the difficulty of cutting on the prostate whilst two fingers of one hand were in the rectum.

Mr. FAGGE showed a case of Carcinoma of the Jejunum; Obstruction; Resection of a Piece of the Jejunum and adherent Transverse Colon; Double Lateral Anastomosis with Murphy's Buttons. The patient, a woman, aged 33 years, was now quite well, 13 months after the operation. The buttons were both passed within six weeks of the operation.—Mr. FAGGE, in reply to Mr. RAYMOND JOHNSON, said that microscopically the growth proved to be a columnar cell carcinoma, with an unusually great amount of fibrous tissue.

Mr. F. W. BROOK showed a case of Multiple Chondromata of the Metatarsal Bones and the First Intermetatarsal Space occurring in a male, aged 50 years. 15 years ago the right "great toe joint" was crushed. This was followed by occasional painless swelling which in the course of a few years became permanent. He was first seen in February, 1904, when the condition differed from that now presented in the following respects. The general swelling was less and not so tense. The calcareous or cartilaginous deposits about the bone were more moveable and the outline of the more superficial ones, which was irregular, was easily recognised. The movements of the joints were scarcely impaired. In the more recent skiagram as compared with the earlier one were seen (1) the increasing amount of the calcareous or cartilaginous deposit in the tissues of, and further widening of, the first interspace, and increasing distortion of the second metatarsal bone; (2) the slow but progressive destruction of the first metatarsal bone; and (3) the appearance of chondromata in the other metatarsals. One of the isolated growths, about half an inch in diameter, was recently removed from the web of the interspace. It was not encapsuled and upon examination by Mr. S. G. Shattock was reported to consist of hyaline cartilage in which small areas of mucous metaplasia occurred.—Mr. BARNARD queried whether the growths might have originated in the tendon sheath.

ROYAL ACADEMY OF MEDICINE IN IRELAND.—A meeting of the Section of Pathology was held on Jan. 4th, Dr. J. F. O'Carroll, the President of the section, being in the chair.—Professor E. J. McWeeney, through Dr. Farnan, exhibited specimens of Uncinaria Duodenalis sent to him by Dr. Christian William Branch, Government medical officer at St. Vincent in the West Indies, where the parasite caused much illness. The exhibit consisted of the washings of the intestine of a child. Two sorts of worms were present—namely, trichocephalus dispar in large tufted masses and uncinaria duodenalis (ankylostoma duodenale). The male and female trichocephalus were very different. The male and female uncinaria were not very unlike each other, the male, however, being the smaller. One measured 7.5 millimetres long by 0.47 millimetre thick. Its remarkable copulatory organ consisted of two spicules, beautifully striated when seen under a high power, surrounded by a sort of umbrella-like arrangement supported by 11 ribs. The female was longer and thicker than the male. One female that was measured was 17 millimetres long. A new species of uncinaria, called uncinaria americana, parasitic in man, was described in 1902 by Stiles, and is now made into a new genus called necator. It occurs in the same locality as uncinaria duodenalis and does a great amount of mischief, especially to children, causing retardation of development, anaemia, and cachexia. In Europe the parasite chiefly attacked miners and attention was first called to it in connexion with the boring of the St. Gotthard tunnel in Switzerland in 1880, when it caused a serious outbreak of "pernicious" anaemia amongst the workmen.—The President described a case of Suffocative Hydrothorax in which the Pleurae were tapped several hundred times. The patient was a robust and intelligent man, 65 years of age, who entered a hospital in May, 1900, suffering from great distress in breathing and epigastric pain. There were considerable swelling and tenderness in the epigastrium. The urine, small in quantity and dark in colour, contained some sugar. There was a faint systolic apex murmur, together with some dulness in both pleurae. A month afterwards the right pleural cavity was tapped and 40 ounces of fluid were withdrawn. Two days later the left pleural cavity

was tapped, 76 ounces being withdrawn. Occasionally, as might have been expected, there was a trace of albumin in the urine. A slight purplish tinge was visible through the patient's natural ruddiness and the veins in his neck were slightly more prominent than they would ordinarily have been. He had also at first some oedema of the legs. During the first four or five months the two pleurae were tapped almost alternately. Thereafter the right one was tapped about twice for every time the left was tapped and this proportion was maintained till March, 1902, when the left pleural cavity ceased to secrete as the result of an adhesive pleuritis. He had then to be tapped twice as often on the right side, and this went on, practically every second day, to the amount of 50, and 60, and 70 ounces till the beginning of May, 1903, almost three years after his admission. Then the right pleura began to show signs of not yielding as much fluid as formerly and of being annihilated by adhesive pleuritis of rapid course. He died when this was complete, practically as if he had been garrotted in such a way as to stop the venous flow into the heart without obstructing the trachea, the process lasting about two days. He had spent three years all but five days in hospital, had hardly lain down in bed for more than two or three hours nightly all that time, but had retained his original weight, appearance, and good spirits up to the closure of the right pleural cavity three days before death. At the necropsy, when the heart was examined and the vena cava superior was slit up, a prominence in the posterior wall of the vena cava was noticed. This was an aggregation of tuberculous glands of no great bulk; but the real mischief was caused by an actual fusion of the gland mass with the wall of the vena azygos, the girth of which at this point was half that immediately to the right of it. The total amount of fluid withdrawn during the three years was computed to weigh about three-quarters of a ton.—Dr. F. C. Martley instanced a case bearing some similarity to that described by the President.—Dr. Thomas G. Moorhead exhibited a specimen obtained after the Talma-Morison Operation. The patient, who was a woman aged 22 years, was admitted to a hospital in April, 1906, suffering from ascites which had developed in a couple of days. After tapping an operation was decided upon. The liver was found to be enlarged, firm, and hard. The surface was scraped and the great omentum was stitched to the abdominal wall. After the operation the patient was tapped at intervals of 10 days—200 ounces of ordinary ascitic fluid being withdrawn. About two months ago she began to lose weight. It was decided to see what could be done to establish a permanent drain to the peritoneum but no improvement took place and the patient afterwards died. The interest of the specimen was in showing the results of a Talma-Morison operation six months after its performance. At the necropsy adhesions across the anterior abdominal wall were found and along these could be seen the development of new superficial veins, chiefly between the two peritoneal surfaces. The operation was therefore partially successful in causing the hoped-for establishment of new collateral channels. That it was not more successful was probably due to the fact that the patient, in addition to cirrhosis, had a nutmeg liver. In most cases of cirrhosis some alcoholic history could be obtained. This patient, however, had been a teetotaler all her life, but on inquiry it was found that part of her occupation was the putting of photographic negatives into methylated spirit, which might have something to do with the case.—Dr. William Wheeler instanced a case in which, after finding an enlarged liver roughened on the surface, he performed a Talma-Morison operation. That was two years ago. The patient was tapped once after the operation but never since. He had been extremely well and had gained three or four stones in weight. The other day he came to show himself; no tapping was required, but on examination the urine showed a good deal of albumin, giving signs of a cirrhosis of the kidneys. In 90 per cent. of the cases in which there were no complications ascites was got rid of by the Talma-Morison operation.—Dr. Henry Earl said that in many cases of cirrhosis, such as the question in many cases of cirrhosis occurring in children. A great number of the patients met with in hospital practice drank all they could get, and if cirrhosis of the liver had any intimate connexion with alcoholic indulgence it should be one of the commonest affections, which it was not by any means.—A meeting of the Section of Surgery was held on Jan. 11th, Mr. H. R. Swanzy, the President, being in the chair.—Mr. L. G.

Gunn made a communication on the Treatment of Enlarged Prostate. He said that, in his opinion, too much attention was paid to the operative treatment of this affection. As many cases could be greatly benefited, though not actually restored to health, by non-operative treatment, it was well to consider this before advising a patient to have the gland removed. Mr. Gunn then gave a brief account of work which he had seen at Paris, London, and Berlin. In the first city prostatectomy was hardly ever performed, in London it was always advised, while in Berlin palliative measures were often used. He then gave a short account of 41 cases of enlarged prostate which he had treated. Of these cases 11 had required operation; nine had made good recoveries, and two had died. 19 cases had been treated by palliative means with more or less relief. None of these had to use a catheter, as Mr. Gunn believed that the risks of catheter life must be always greater than the risk of an operation.—Dr. J. Walton Browne said that much good could be done by washing out the bladder.—Mr. O. A. K. Ball expressed the view that a large number of cases had been operated on in the past which, no doubt, would have lived, and, perhaps, in a more comfortable state, had palliative measures been tried instead of operation. He thought that palliative measures ought to be employed unless there was absolute obstruction to the flow of urine.—Mr. Alexander Blaney said that many cases which had ended fatally after operation would probably have been successful had radical measures been carried out earlier.—Mr. S. Horace Law described an Early Case of Leontiasis Ossea occurring in a boy. When Mr. Law first saw him four years ago he was 12 years old, small for his age, but upright and sturdy. He seemed to be in good general health and his only complaint was of nasal obstruction. On examination a hard bilateral growth was seen in the infra-orbital region, extending up in such a way as to cause the eyes to be pushed outwards and also to bring about exophthalmos. The lateral walls of the nose were pushed towards the middle line so as to occlude the nostrils, though a probe could be passed up to the sphenoid bone and air could be blown through the nose. The naso-pharynx was not involved. The pharynx and palate were normal. The antra of Highmore were dark to transillumination and when an ordinary antrum drill was passed in through the canine fossa on the right side it failed to reach a cavity. The bone was soft and spongy. In November, 1906, the peculiar enlargement due to the disease was well marked. The patient had dacryocystitis on both sides. X ray photographs showed dense shadows corresponding to the obvious growths and a shadow of growth lying between the orbits. The cranial vault of this youth was of about the same thickness as in an adult.—The President said that he regarded the dacryocystitis not as a coincidence but rather as the direct result of the bony growth. He thought that the best mode of treatment would be extirpation of the lacrimal sac on each side, as, in existing circumstances, ulceration of the cornea of a very intractable type would be likely to occur.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—A meeting of this society was held on Jan. 18th, Mr. G. Pernet being in the chair.—A paper was read by Dr. C. O. Hawthorne entitled "Protection of Rheumatic Children," in which he asked whether anything could be done to prevent or to limit the occurrence of cardiac disease in children who were known to be liable to such disease as a result of a rheumatic inheritance or proclivity, irreparable damage being frequently inflicted on the cardiac tissues by the rheumatic poison almost or altogether apart from incidents popularly recognised as rheumatic. The disproportionate frequency of heart disease in children might be due to the absence of arthritis in them and therefore there was less tendency to keep the patient at rest. It was necessary to educate the public as to the value of rest, and when this was done there might be a diminution in the incidence of heart disease in early life with its diminished usefulness of the individual.—Mr. J. P. Lookhart Mummery read a paper on Volvulus of the Small Intestine round a caecum, which was gangrenous and on the point of giving way in several places. This was resected and the cut ends were united with Murphy's button. The case resembled appendicitis, the classical symptoms of acute obstruction of

the small intestine being not at all prominent. Vomiting was a marked feature early but had ceased when the child went to the hospital and was never fatal. There was no distension of the abdomen.—Dr. Hawthorne showed: (1) A case of Dilatation of the Stomach of doubtful causation in a boy, aged 12 years; and (2) a patient showing the result of an operation for Extreme Depression of the Frontal Bone.—Dr. Edmund Cantley showed a girl, aged nine years, with Diabetes Insipidus. For two years she had had nocturnal enuresis and for six months enuresis diurna also, with thirst and excessive appetite. The urine varied from 46 to 262 ounces per day, was pale, acid, of specific gravity 1005 and contained from 0.5 to 0.9 per cent. of urea. Adrenalin and atropine had effected no improvement but valerianate of iron and quinine with strychnine were more successful, the polyuria and thirst diminishing and the patient gaining weight. There was no exciting cause discovered and there was no sign of chronic interstitial nephritis.—Dr. F. J. Poynton showed: 1. A case of Premature Development in a child aged two and a half years. The remarkable growth began when the child was a year old, pubic hairs and sexual development being then noted. The weight was now 3 stones 1 pound. The circumference of the head was 20 inches; of the thorax, 22½ inches; and of the abdomen, 23 inches. The length of the whole arm was 12 inches and of the leg 17 inches. The voice was deep and memory was good. The aspect was rather suggestive of acromegaly. There was no suprarenal tumour to be felt. The parents were small and healthy. 2. A case of Friedreich's Disease (?) in a girl, aged nine years. Five years ago the child had measles with severe cerebral symptoms and had not been well since. She had now well-marked ataxy of the legs and incoördination with tremor of the hands. There was doubtful nystagmus. The knee-jerks were abolished. The right plantar reflex was extensor, but the left was flexor in type. There was some lordosis of the upper dorsal spine. Double pes cavus was present. The speech was slow. There were no optic changes.—Dr. G. Carpenter showed a case of Oedema in an infant who was 14 months old and weighed 7 pounds; the oedema of the face and limbs followed an attack of diarrhoea. The child was anæmic and the temperature was subnormal. The urine contained no albumin.—Mr. Lockhart Mummery showed a case of Webbed Penis. The penis was inclosed within the scrotal skin right down to the tip; there were no other abnormality and no history of similar defects in the family.—Dr. G. A. Sutherland showed: 1. A case of Congenital Cerebellar Ataxy (?). The patient, a boy, aged three years, had suffered from general ataxy for 18 months. He was healthy at birth but had convulsions at the age of six months. At the age of two years he was unable to sit or stand without support and the limbs were tremulous and ataxic. The speech and intelligence were very backward. The knee-jerks were very active. There was double internal squint and the optic discs were pale but not definitely atrophic. The condition had remained the same for the past nine months, except that now the child could sit unsupported. Dr. Sutherland thought it probable that the case was one of birth palsy following meningeal hæmorrhage and probably involving the cerebellum. 2. A case of Congenital Deformities of the so-called Mongolian type of Amentia. The patient, a girl, aged eight years, showed the shortening and curving of the little fingers and the oblique palpebral fissures so characteristic of Mongolian imbecility; but the patient was perfectly intelligent and had no cranial deformities. She was under treatment for fibroid phthisis.

INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this society was held in London on Jan. 11th, when Dr. D. S. Davies, the medical officer of health of Bristol and President of the society, delivered his presidential address, dealing mainly with some points in the life history of two of the commoner communicable diseases. Commencing with the subject of diphtheria, he said that this disease was more or less endemically prevalent in all large towns, but the periods of fatal prevalence recurred not after the manner of measles at fairly constant and somewhat short intervals, but at long and uncertain intervals after a prolonged period of comparative, and often remarkable, quiescence. The progress of an epidemic appeared to follow a course, determined partly by the virulence of the type introduced and partly by the resistance of the individuals attacked. During the first months the introduced infection was somewhat limited in distribution and at this stage hospitals

might prove of far greater service in prevention than later. The essential towards prevention was an efficient organisation for the bacteriological examination of throats and noses in all "contacts," whether members of an infected household or class-mates in an infected school. There was no antagonism between scarlet fever, measles, and diphtheria; if anything, one predisposed to the other. The largest number of mixed infections were of diphtheria upon scarlet fever. School examination of "contacts" in infected classes was a more rational procedure in urban communities than mere school exclusion without such examination, and if there was sufficient staff available to carry this out promptly and thoroughly there was little risk to the children; but it must be remembered that there might be home "contacts" who had to be sought for and dealt with also. The difficulty met with in London owing to the inaction of certain authorities had not been felt at Bristol, as the whole of the work of school visitation and examination had had, in default of any education medical officer, to be carried out by the health department. Speaking next of small-pox, Dr. Davies said that this disease, in spite of its high infectivity, was comparatively easy to control. In common with the majority of the common communicable fevers, the spread of this disease was for the most part immediately personal. A patient either definitely had, or had not, small-pox at any particular time; he never merely carried it on his living tissues in an inert, but to others a potentially infective form. Hence hospital isolation with protection of "contacts" was generally successful in this disease. The control of small-pox from introduced centres depended on a careful personal search for "contacts," and the use of experience and judgment in looking for them in the right place. In the evening the annual dinner was held at the Holborn Restaurant, the chair being taken by Dr. Davies, and among others present were Mr. Colston Wintle, Colonel J. Lane Notter, Sir Shirley F. Murphy, Dr. B. Arthur Whitelegge, and Dr. Dawson Williams. In proposing the toast of the "Society of Medical Officers of Health," Mr. Wintle said that it had now ten branches and a membership of upwards of 1000, practically every medical officer of health being a member.

HARVEIAN SOCIETY OF LONDON.—A clinical meeting of this society was held on Jan. 24th, Dr. Sidney P. Phillips, the President, being in the chair.—The President showed a case of Congenital Heart Disease. The patient was a boy, aged nine years. There was a loud systolic murmur over the aortic cartilage; cyanosis was not present. The condition was probably one of congenital narrowing of the aorta.—Mr. W. H. Clayton Greene showed a case of Bilateral Cystic Disease of the Kidneys in a man who had come under treatment for hæmaturia; both kidneys were greatly enlarged. The question of treatment was discussed and in view of the hopelessness of these cases the possibility of kidney grafting was raised. It was suggested that a kidney might be grafted into the scrotum, the spermatic vessels and vas deferens being used to take the place of the renal vessels and the ureter.—The case was discussed by Dr. J. F. H. Broadbent, Mr. T. Crisp English, Dr. B. H. Spilsbury, and the President.—Dr. L. Colebrook showed (for Mr. S. Maynard Smith) a case of Dislocation of the Shoulder, with a fracture through the lower part of the glenoid cavity. The patient was an elderly woman and the injury had occurred four months previously; a skiagram was shown.—Dr. F. Langmead showed (for Dr. H. A. Caley) a case of Aneurysm of the Innominate Artery and raised the question of surgical treatment.—The President discussed the case and considered it unsuitable for operation. He pointed out the difficulties in exact diagnosis and also the general degeneration of the patient's arteries which were in unsatisfactory condition for ligation.—Mr. Crisp English showed a man, aged 62 years, with a Large Tumour of the Left Breast. This had existed for 12 years, had greatly increased during the last 12 months, and was mainly cystic. In its upper part was a small indurated and nodular area.—Mr. F. Jaffrey thought that the hard portion might prove to be sarcomatous.—Dr. Spilsbury considered that the tumour was probably an innocent cystic growth.—Mr. Jaffrey showed a woman, aged 40 years, with a Fracture of the Lower End of the Radius and Wasting of the Muscles of the Hand. In spite of continued massage the condition had improved but slowly, and it was questioned whether any nerves had been injured.—The President showed a man suffering from General Paralysis of the Insane with atypical

symptoms.—Dr. Broadbent showed a case of Paralysis of the Third Cranial Nerve of rapid onset in a woman, aged 30 years; improvement was occurring under treatment with potassium iodide. It was pointed out that certain of these cases of nerve paralysis ultimately developed locomotor ataxia. —The President and Mr. Crisp English discussed the case.

THERAPEUTICAL SOCIETY.—A meeting of this society was held on Jan. 22nd, Dr. T. E. Burton Brown, the President, being in the chair.—Mr. F. H. Bonnefin read a paper entitled "Short Notes on a Method for Rendering Creasote and Cannabis Indica Soluble and on some Little Known Medicinal Remedies." He showed clear solutions both of creasote and of cannabis indica which he prepared by the following formulae:—1. For making creasote soluble: Decoctum quillaiæ concentratum (1 in 7), 2 parts; solutio sodii salicylatis puri (1 in 2), 1 part; and creosotum optimum, 1 part. Shake and warm very gently. 2. For making cannabis indica soluble: Extractum cannabis indicæ (physiologically tested), 1 part; spiritus vini rectificatus, 4 parts; decoctum quillaiæ concentratum (1 in 7), 7 parts; and aqua destillata, 8 parts. Mix the extract with the alcohol, warm, add warm decoction of quillaiæ, shake; finally, add warm distilled water, shake, and strain after three days. He showed how each solution remained clear on adding either water or acid, so that no precipitation would take place in the stomach.—In the discussion which followed Mr. W. Soper, Professor A. R. Cushny, and Professor R. B. Wild took part, when evidence was brought forward to show that these preparations contained no active principles, and that after due consideration they had been deliberately omitted from the U.S. Pharmacopœia as inert.—Professor Wild then read a paper on the Proper Scope of the Teaching of Materia Medica, Pharmacology, and Therapeutics in the Medical Curriculum, in which he endeavoured to arouse the interest of medical men in the better teaching of therapeutics. He laid stress on the fact that while great changes had taken place in the practice of therapeutics during the past twenty-five years, there had not been corresponding changes in the teaching of the medical student. At the present time the chief obstacle to any reform in the teaching of materia medica and therapeutics lay, he thought, in the great diversity in the requirements of the various examining bodies, and some general agreement was urgently required as to what should be insisted upon as an essential minimum for qualification, and what had become obsolete and might well be removed from the overcrowded curriculum.—Professor Cushny, Dr. J. Gordon Sharp, and the Secretary joined in a discussion on the paper and agreed with Professor Wild's conclusions.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—A meeting of this society was held on Jan. 23rd, Dr. Leslie Roberts, the President, being in the chair.—Mr. G. W. Dawson showed: 1. A boy, aged 11 years, with Tinea Tonsurans to illustrate the rapid and complete clearance of all diseased hairs after only four exposures to the x rays. 2. A woman, aged 45 years, with Acute Lichen Planus of five months' duration. The eruption was of an annular type and widespread and the patient's general health had suffered much at the onset of the illness. She was being treated with salicin.—Dr. A. Eddowes showed a young woman with Acrodermatitis Hiemalis of nine years' standing. The hands were much congested and presented numerous scars the result of deep-seated nodules which had come to the surface and ruptured. The case was commented upon by many of the members who pointed out the likeness of the condition to folliculitis (Bartholomy), to chilblain-impus (Hutchinson), and also to scrofuloderma.—Dr. E. G. Graham Little presented a case for diagnosis in the person of a woman, aged 33 years, in whom a Scaly, Papular Eruption had appeared three weeks ago, accompanied by a dryness and irritation of the whole integument. The condition seemed to resemble lichen planus, but it was generally conceded to be the result of some severe toxic infection.—Dr. J. H. Stowers showed a boy, aged nine years, with a Small Nodule upon the Right Cheek. The child was said to have been bitten by a mosquito on this spot seven months previously. None of the members were satisfied that the lesion was tuberculous in nature.

BURNLEY AND DISTRICT MEDICO-ETHICAL ASSOCIATION.—A meeting of this society took place on Jan. 24th, Dr. J. S. Wilson, the President, being in the chair.—Dr. A. Macgregor Sinclair showed four tumours of Ectopic Gestation which he had recently removed from patients. He gave

histories of each of the cases and laid especial stress upon each of the women having been sterile for several years and having had an offensive leucorrhœal discharge during the period of sterility, and reasoned from these facts that "ectopic gestation" was probably due to diseases either of the uterus or of the tubes. Each case was marked by the usual symptoms of abdominal pain and bloodlessness before operation and a well-marked pulsation in the fornix of the side upon which the tumour was situated. The fourth case differed from the first three, inasmuch as it was complicated by an adherent inflamed appendix and the earlier abdominal symptoms were obscure. On operating, the right tube, which contained a three or four months' foetus, was twisted round behind the uterus and attached to the appendix, and though it was ruptured only a small amount of hæmorrhage had taken place because the tear in the tumour was filled by the protruding head of the foetus. The cases were all treated in the ordinary aseptic manner and made uneventful recoveries.—Dr. H. J. Slane, Dr. R. O. Holt, and the President took part in the discussion.—Mr. J. H. Carter, F.R.C.V.S., who was present, related a case of Ectopic Gestation in a Newfoundland bitch.

DERMATOLOGICAL SOCIETY OF LONDON.—A meeting of this society was held on Jan. 9th, Dr. T. Colcott Fox being in the chair.—Dr. S. E. Dore showed for Dr. J. J. Pringle a case of a Bullous Disease, with the clinical features of dermatitis herpetiformis, in a man who had been under treatment for five years with arsenic. The eruption was controlled by doses of six minims of liquor arsenicalis, but the patient had latterly shown very serious symptoms of arsenical poisoning. He had pigmentation over almost the whole body, keratosis of the palms and soles, and increased knee-jerks.—Dr. J. H. M. MacLeod showed a case of Lichen Planus which had commenced with curious patches of hypertrophy of the epidermis of the knees before the appearance of more typical patches of lichen planus on the wrists had cleared up the diagnosis. The hypertrophied patches had disappeared under treatment by the x rays.—Dr. E. G. Graham Little showed an unusual case of Lupus Erythematosus, involving the scalp alone, in a medical student. The largest patch was of a band shape and had persisted for three years. Dr. Little also showed a case of what was clinically almost certainly Lupus Vulgaris of the Nose and Upper Lip in a young girl, but repeated estimations of the opsonic index showed a normal figure for tubercle and only 0.6 for streptococcus. The clinical diagnosis was supported by the opinion of the meeting.

Reviews and Notices of Books.

A Text-Book of Psychiatry for Physicians and Students. By LEONARDO BIANCHI, M.D., Professor of Psychiatry and Neuropathology in the Royal University of Naples, Minister of Public Instruction, Medical Director of the Provincial Asylum, Naples. Authorised Translation from the Italian by J. H. MACDONALD, M.B., Ch.B., Glasg., Senior Assistant Physician, Govan District Asylum. London: Baillière, Tindall, and Cox. 1906. Pp. xvi.-992. Price 21s. net.

THIS important treatise opens with an introduction of 23 pages, which constitutes a brief review of the evolution of the mental faculties. Then follows an anatomical description of the cerebral mantle with an account of the motor and sensory paths and centres, of associative paths, and of the minute anatomy of the cortex. The latest observations are recorded. The neuron theory, that of continuity of the neuro-fibrils, and the functions of the neuroglia are discussed in the light of recent research. The physiology of the cerebral mantle is also dealt with at length; thus, the physiology of vision, movement and speech, Flechsig's doctrine of associative areas, and the physiology of the frontal lobes (so important as organs of the highest psychic functions). Some 150 pages (constituting Part I. of the book) are given to the anatomy and physiology of the cortex cerebri.

Part II. treats of the physio-pathology of the various mental processes; thus, the physio-pathology of perception, attention, memory, will, and so on. No less than 100 pages

are devoted to the analysis of these processes in health and disease. Indeed, the domains of anatomy, physiology, and physiological psychology are perhaps somewhat too extensively invaded. The anatomical substrata of the various mental processes are discussed, it being shown that narrow conceptions of localisation cannot be entertained, the area of formation and conservation of these processes being widely diffused. In the synthesis of psychical processes the frontal lobes are mainly concerned. With respect to consciousness also the frontal lobes constitute the chief centre, though its anatomical substratum is co-extensive with the entire cerebral mantle.

Mental disorders proper are considered in Part III. (477 pages), which opens with a chapter on the methods (psychological, anthropological, and neurological) and upon the scope of clinical inquiry. The classification adopted is, in view of the "impossibility of holding to a single criterion," based upon "nosological, ætiological, and anatomic-pathological criteria." Mental affections are divided into three groups, each of which has some characteristic feature; thus in those of the first group there is always a primary defect due to want of cerebral development (congenital moral insanity, epilepsy, fixed ideas, and so on); the second group comprises affections of toxic origin supervening in normally developed persons (such as mania, confusional states, and alcoholic and morphine insanity); and the third group includes disorders with demonstrable anatomic-pathological alterations in the brain (paralytic, senile dementia, dementia of focal lesions, and the like). The remainder of the book is occupied with the discussion of the individual members of these groups. Idiocy is described under "Phrenasthenia"; objection may be taken to such a limited application of the latter term. Sub-groups of idiocy and imbecility are not described for the reason that they are artificial. Under "Paraphrenia" come the eccentrics, "cranks," fanatics, and such like borderland cases. Under "Delinquency" are considered the anti-social or criminal classes. The author distinguishes between the criminal born and the criminal from acquired habit but does not admit an anthropological type of delinquent. Modern views upon the toxic origin of epilepsy are discussed; the anatomical changes found in the brains of epileptics are regarded as effects and not causes. 37 pages are devoted to "hysterical insanity" but under this heading ordinary hysteria is also described. The author is no advocate of hypnotism though he recognises the occasional benefit derived from various forms of suggestion. In regard to paranoia, *quot homines, tot sententiæ*; we are not surprised to find that Professor Bianchi has views of his own. The manifestations of this disorder would appear to vary much in accordance with the nationality of the patient and to be peculiarly susceptible to local colouring. The remaining disorders of the first group are obsessions, neurasthenia, and the sexual psychopathies. In introducing the disorders of the second group reasons are given for the belief that they are due to the entrance of endogenous or exogenous toxins into the blood stream. The chief members of the group are mania, melancholia, "sensory" insanity, acute delirium, and alcoholic insanity. Pure mania and melancholia are recognised apart from "manic-depressive" insanity. "Sensory" or hallucinatory insanity (an unusual designation) covers the various conditions included by others under dementia præcox. The chief disease of the third group is naturally paralytic dementia, to which 45 pages are devoted. Modern views as to its etiology and pathology are fully discussed and it is shown that great uncertainty still exists on these points. Short chapters on other forms of dementia due to organic lesions bring this comprehensive treatise to a conclusion. The book is freely illustrated.

Professor Bianchi's high reputation in the field of psychological medicine led many to welcome the announcement

that an English translation of his work had been undertaken. The book gives evidence throughout of its distinguished author's great experience, industry, and scientific impartiality, and he exhibits a truly cosmopolitan acquaintance with the literature of his subject. He has produced a standard work. With but rare exceptions we find the English of the translation clear and readable.

Growth, A Novel. By GRAHAM TRAVERS (MARGARET TODD, M.D. BRUX.). London: Constable and Co. 1906. Pp. 418. Price 6s.

"GROWTH" more than fulfils the early promise of the author who gained so wide a circle of admirers by her first novel, "Mona Maclean, Medical Student." This later and more mature work will appeal to the large public of thoughtful readers who appreciate a sympathetic study of the momentous years of student life, those most important and fertile years of mental and moral growth in the history of the individual.

The hero, Dugald Dalgleish, only son of a widow, leaves his country home as soon as he can gather together funds enough (12s. a week) to enable him to go to the University of Edinburgh to study for the ministry. An enthusiastic idealist eager for knowledge, the young Calvinist is thrown into the society of kindred intellects, and takes a prominent part in the debating societies which form such important influences in the lives of a nation proverbially prone to love argument on theological and metaphysical matters. The overwhelming inrush of new ideas born of modern science and philosophy unites to shake the very foundations of the young man's being; his studies are neglected and for a time his character is altered for the worse. He is saved from sinking to any depth by three strong influences—the friendship of the heroine Judith, love for a beautiful actress, and hero-worship of his senior fellow-student Thatcher. Judith understands the lad's state of mind and administers doses of praise or blame and renders unselfish assistance whenever necessary. Her gospel is the Human Brotherhood and her life is steadfastly devoted to helping lame dogs over stiles. Regardless of conventions, with strict ideals of duty, yet not lacking in humour and in readiness to admit her errors and prejudices, combining the intellectual honesty of man with the sympathy and loveliness of woman, Judith presents one of the most attractive types of modern womanhood in fiction and the reader is the richer for having made her acquaintance. Ianthe Brooke, the actress, is a less real figure, but the bewilderling effect of her grace, charm, and beauty on the raw lad who had been brought up to regard beautiful things and pleasures as works of the devil is carefully and truthfully portrayed. Thatcher, the ascetic hero, forms an interesting study of the conversion of a Puritan to Roman Catholicism.

We may here mention that the author should not have described a typical group of Scottish students in Edinburgh as belonging to a Nonconformist chapel with a pastor. It would have been more in keeping with local colour had she associated them with a minister and a seceding kirk, and what she describes is, in fact, such a community.

The numerous other characters in the novel all illustrate a definite outlook on life, showing their individual solution of the problem of the meaning of life and duty and their relation towards God. It is greatly to the credit of the author that the underlying religious *motif* of the book is not too much in evidence; the characters live, they are not mere shadows who repeat formulae in order to promote their creator's belief in a particular creed. In this respect "Growth" stands far above the average novel with a "religious purpose." The attitude of doubt, the criticism of each and every creed and church, natural to a group of honest young students, is truthfully depicted; and the ultimate adhesion to one or another church, according to the

individual's temperament and ability, as described by the author, is true to life. The good in every church is generously illustrated; the evil and the limitations are but lightly mentioned. Thatcher and Carew represent the advanced intellectual type of Roman Catholic; Frances and Monsignor the emotional type, to whom dogma and tradition are as necessary as the air they breathe. Mr. Atherley, the pastor, is the foil to Father Bernard; both acquit themselves equally nobly; both are ornaments to their respective churches.

Less happy, we consider, is the portrayal of the final effect of the new scientific and philosophical thought on Dalgleish and his sister Grizel. The following suggestive paragraph should have served as a text for the final chapters of the book: "To his great delight, he had started Logic and Metaphysics. Day after day he drank in the lectures as a thirsty soul drinks in the rain. To be given the forms of thought, combined with such freedom to think, was a privilege he had ceased to expect from his pastors and masters, and it was beneficial as much from a moral as from an intellectual point of view. Little as he suspected the fact, freedom of thought had come of late to mean for him something perilously like lawlessness. The new studies had pricked that bubble for ever." Many a young student, when deprived of his belief in dogmas, has imagined that religion and morality necessarily fall at the same time; but a deeper study proves to him that religion and morality not only remain unaffected but are natural forces all the stronger and more convincing for their lack of artificial props. Dalgleish and Grizel are shown in their first stage of despair and sadness, bravely accepting Truth but unconsoled for the loss of their ancient and dear beliefs. But if they lost some loved beliefs they also lost many cramping and cruel beliefs. By means of their new knowledge they gained a wider, grander faith, with endless vistas of glorious promise, and they acquired a nobler conception of God, one more in harmony with the great movements of the universe revealed by scientific research. Of a surety, after a few unsettled years of mental bewilderment, the happiness and comfort of their newer knowledge would have more than recompensed them for their incapacity to regard life from the same standpoint as their saintly mother. This more advanced stage of reconnoitment and peace is hinted at rather than described and for this reason the book to many readers will appear incomplete, like a noble song brought to a sudden end before the final note of triumph has been sung.

We can confidently recommend this novel as a work of art, describing a side of life which is but rarely met with in fiction. Novels professing to deal with student life usually depict games, slang, and convivial gatherings; the inner turmoil of the awakening active young spirit, the idealism, and the earnest seeking after truth are equally true and more important aspects of student life, and it is these that "Growth" so capably and sympathetically describes.

Medical Electricity. By H. LEWIS JONES, M.D. Cantab., Medical Officer in charge of the Electrical Department, St. Bartholomew's Hospital. Fifth edition. London: H. K. Lewis. 1906. Pp. 519. Price 12s. 6d. net.

LITTLE more than two years have elapsed since we reviewed the fourth edition of this important work. In the interval the author has almost entirely rewritten the book and has also rearranged the contents, besides deleting some parts which were unnecessary. All the changes which have been thus brought about serve to increase the value of the book.

The historical chapter with which the previous editions opened has been omitted, and Chapter I. now forms a useful introduction to elementary physics, where those who wish may refresh their memories with regard to the fundamental principles of the whole subject. The next six chapters deal with apparatus in a very thorough manner, from the simplest

form of medical battery to the latest development in high potential electricity. Chapter VIII. is devoted to Roentgen Rays and forms a very excellent and trustworthy *résumé* of the present position of this branch of work. Next follows a chapter on physiological considerations, in which the general effects of the various forms of electricity on the tissues are fully gone into. Then come others on general diseases, the nervous system, circulatory disturbances, special senses, and the skin.

We notice that the special chapters on electricity in surgery and the electric bath are now done away with and the matter is distributed around the chapters on apparatus or therapeutics as may be most desirable. The chapter on diagnosis has also disappeared as a separate entity and is incorporated in the chapters dealing with the nervous system, to which it more properly belongs.

The whole book has been brought entirely up to date and in our opinion is likely to maintain the position which it has long held as the standard work on medical electricity in this country.

LIBRARY TABLE.

Atlas of Applied (Topographical) Anatomy. By Dr. KARL VON BARDELEBEN and Professor Dr. H. HAECKEL. Authorised English adaptation from the third German edition, containing 204 woodcuts in several colours and descriptive text. By J. HOWELL EVANS, M.A., M.B., M.Ch. Oxon., F.R.C.S. Eng. London and New York: Rebman Company. 1906. Large crown 4to. Price 32s. net.—In preparing this adaptation of Bardeleben's well-known atlas Mr. Howell Evans has been guided in his selection of plates by their relative clinical importance. Those regions of the body which have of recent years become of increasing interest have received particular attention. We find especial prominence given to the anatomy of the tympanum and its accessory cavities, to the air sinuses of the face and base of the skull, to the Gasserian ganglion, and to the surgical anatomy of the gall-bladder, bile ducts, pancreas, and organs of the male pelvis. The anatomy of the limbs is well illustrated but the plates possess no distinctive features. We notice that the "sigmoid flexure" is still described and that the cutaneous segmental nerve areas are not figured in accordance with the views of English observers. The atlas will, no doubt, find its sphere of usefulness but as it is not provided with an index speedy reference to any desired point is very difficult.

The Development of the Human Body: a Manual of Embryology. By J. PLAYFAIR McMURRITCH, A.M., Ph.D., Professor of Anatomy in the University of Michigan. Second edition, revised and enlarged. With 272 illustrations. London: Rebman, Limited. 1906. Price 14s. net.—Without pretence at originality Professor McMurrich presents the subject of human embryology in a very readable and convenient form. His descriptions are lucid and at the same time concise. Moreover, by avoiding reference to highly controversial matters the attention of the reader is not distracted from the essential of the subject. The result is a text-book well adapted to the needs of the ordinary student. The book is divided into two parts, of which the first is concerned with general development, whilst the second deals with the formation of the various systems and organs, concluding with a chapter on post-natal development. The volume is well illustrated, mainly by figures from various well-known authorities on the subject. We are not surprised to find that a second edition has so soon been called for.

Muscles and Nerves: an Atlas of the Superficial Muscles and Principal Motor Nerves of the Human Body, for the Use of Students of Anatomy and Nurses. By LOUIS BATHE RAWLING, F.R.C.S. Eng., Assistant Surgeon and Senior Demonstrator of Anatomy, St. Bartholomew's Hospital. With four figures and explanations. London: The Scientific

Press, Limited. 1905. Price 3s. 6d. net.—This is an inexpensive and useful atlas by the aid of which a good knowledge of the muscular elements which enter into the formation of the contour of the human body can be rapidly attained. The positions of the motor nerve trunks are also indicated. We should like to see the book in the hands of all medical students and nurses.

The New Hygiene: Three Lectures on the Prevention of Infectious Diseases. By ELIE METCHNIKOFF. With a preface by E. RAY LANKESTER. London: William Heinemann. 1906. Pp. 104. Price 2s. 6d.—In this little volume we have a translation of the Harben Lectures which were delivered in French by M. Metchnikoff in May, 1905. The author is, of course, well known as an eminent biologist who has for many years been connected with the Pasteur Institute in Paris. For the subjects of the three discourses addressed to his London audience he selected the Hygiene of the Tissues, the Hygiene of the Alimentary Canal, and Hygienic Measures against Syphilis. In the first lecture he dealt mainly with the influence of phagocytosis in producing immunity against microbial infection, the existence of pathogenic bacteria in healthy persons, the formation of agglutinins and sensitising substances in the blood serum of patients, Sir A. E. Wright's discovery of opsonins, and the action of alcohol in weakening the natural power of resistance to infection. In the second lecture he suggested that appendicitis and some other diseases might be due to inoculation of microbes on punctures of the lining membrane of the bowel by intestinal worms. In the third lecture he recommended mercurial inunction as a protective against syphilitic infection. The literary form of the lectures is excellent and this brief summary is sufficient to show that the subjects dealt with are of great interest and importance. The translation is, on the whole, very readable; on pp. 6 and 8, however, a quaint effect is produced by the two adjectives typhoid and enteric, as applied to fever, being sometimes used in the same paragraph.

Hygiene of the Nursery. By LOUIS STARR, M.D. Seventh edition, with 25 illustrations. London: H. K. Lewis. 1906. Pp. xii.-309. Crown 8vo. Price 3s. 6d.—In the preparation of this edition the subject matter has been carefully revised and amended wherever necessary to keep abreast with the advances and improvements made in the methods of managing infants and children. Special attention has been given to the chapter on Food and numerous additions have been made to the Dietary and to the section devoted to Emergencies. The chapter which deals with the choice of a nurse-maid and the qualifications to be sought for may be read with benefit by every mother. The author sets forth a series of hygienic rules which can hardly fail to maintain the nursing in good health, to give vigour to his frame, and to lessen the susceptibility to disease. Little reference is made in the volume to drugs or methods of medical treatment, the author's object being to show a mother how she can keep her baby well by using preventive means. The first chapter is written with the object of hinting to the mother when she may expect the onset of disease and should call in professional counsel. We think that this edition will meet with the favour which the public has accorded to its predecessors.

First-Aid Tablets of Fractures. By S. O. EADES, L.R.C.P. Edin. Ipswich: W. E. Harrison. Pp. 45.—The author of this little book reminds us that from a beginner's point of view scientific facts may be divided into those which are seen and daily met with by the student, and which he readily masters, and those which he studies and endeavours to remember, with no inconsiderable trouble, but unfortunately easily forgets. This book is intended for the latter class. The object of the author is threefold: (1) to help those who are studying for first aid and for competitions; (2) to recall to

memory at a glance facts easily learnt and as easily forgotten by first-aid certificate, voucher, medallion, and label holders; and (3) lastly, to encourage the good work which is being carried out by members of the St. John Ambulance Association and Brigade. The little book is written in a practical way and clearly points out what should and what should not be attempted by those who practise first aid. It will be helpful to those for whom it is intended.

From Her to Him. By GEORGE H. R. DABBS, M.D. Aberdeen: Charles William Deacon and Co. 1906. Pp. 65. Price 2s. 6d.—In this poem, which is dedicated "To the Memory of a Noble Woman," Dr. Dabbs tells a pathetic story in suitable language and setting, the pathos at times almost amounting to pain. The work affords glimpses into the environment of a beautiful life.

The Tourist's India. By EUSTACE REYNOLDS-BALL, F.R.G.S. London: Swan Sonnenschein and Co., Limited. 1907. Pp. 364. Price 10s. 6d.—Mr. Reynolds-Ball is the guardian angel of the tourist. He is always ready to hold out a helping hand to anyone who wants to "do" the Mediterranean in six weeks or India in three months. To do him justice, however, he seems to be under no delusion as to the objectionable qualities of the cold weather tourist, and in Chapter II., which, however, is written by a friend of Mr. Reynolds-Ball, is quoted a remark of Mr. Hope Moncreiff about "T.G.'s" which is altogether illuminating. The tourist, however, will find a great deal of information in Mr. Reynolds-Ball's book, also some excellent photographic illustrations. We cordially agree with him when he says (p. 322) that alcohol should not be consumed as a beverage in the tropics, though, of course, it must be remembered that a large portion of India is anything but tropical. We must, however, join issue with him on some of his medical instructions. In THE LANCET of Jan. 31st, 1903, we reviewed his book on travelling in the Near East and pointed out errors in some medical instructions. He has reproduced these errors in the work before us in all their inaccuracy. For instance, he talks about washing out the wounds caused by the bites of wild animals with an antiseptic, but, as before, gives no details as to how this is to be effected; and, worst of all, he reproduces exactly the following absolutely useless receipt for an improvised stretcher, or hammock as he prefers to call it. "A hammock can be improvised by running a stick through the sleeves of a great coat or ulster." This piece of information is no good to anyone. In the review quoted above we explained how he should have described the coat stretcher, and we again draw his attention to it. Should the work reach a second edition an index should be provided, and the present edition is so carelessly bound that we feel sure that the book would be in pieces before it had been used for a week.

THE MULKOWAL DISASTER.¹

It will be remembered that inoculation on a vast scale was undertaken in the Punjab in the winter of 1902-03 with Haffkine's anti-plague prophylactic. Over half a million people were operated on in the plague season of that year and of this number about a quarter were inoculated with prophylactic prepared by agar cultivation and sterilised by heat, and the rest with material cultivated in broth and aseptically by the addition of a small quantity of carbolic acid. From a report issued by the Government of the Punjab in 1904² it appears that the result of the measure was to reduce the liability to attacks among the inoculated to about one-fourth of what it was among the non-inoculated people and the liability to death from plague to nearly one-twelfth; and it is estimated that the number of lives saved amounted to at least 10,000. A deplorable accident, however, attended this campaign. On Nov. 4th and 5th,

¹ Supplement to the Gazette of India, Dec. 1st, 1906.

² Report on Plague and Inoculation in the Punjab from Oct. 1st, 1902 to Sept. 30th, 1903, by Major E. Wilkinson, I.M.S., chief plague medical officer, Lahore, 1904.

1902, 19 persons who had been inoculated on Oct. 30th from a bottle of agar prophylactic in a village called Mulkowal, developed tetanus and succumbed to it between Nov. 6th and 9th. The matter was investigated by a commission in India and was subsequently submitted for examination to the Lister Institute. On Dec. 1st, 1906, the Government of India issued in Calcutta, in the form of a supplement to the *Gazette of India*, a file of documents referring to the subject. We submit the essential points of the inquiry as gathered from these documents, and our readers will at once perceive the importance of the questions involved.

The following appear to us to be the main facts. The 19 people were inoculated, by means of the same syringe, with prophylactic from a bottle which was one of five filled from one and the same laboratory cultivation flask. The cultivation was marked "53 N." The four other bottles were used for inoculation elsewhere and caused no ill effects; the syringe before being refilled for another batch of inoculations was rinsed out with carbolic lotion.

The people who developed tetanus were the first of a batch of about a hundred inoculated in Mulkowal on that morning. They were the only persons inoculated from bottle 53 N. and none of those inoculated after them from other bottles had any untoward symptoms. The accident was therefore closely connected with the bottle used and the particular syringe with which the contents of that bottle were injected, and the question presented itself as to whether that bottle was contaminated at the time of using it in Mulkowal or at the time of its preparation in Bombay and what were the circumstances in which contamination occurred. An interval of several weeks separated the possible dates of contamination, for the bottle was prepared 41 days, and despatched to the Punjab 26 days, before the accident.

The possibility of getting an answer to the primary question lay in the fact that a tetanus impurity falling into a bottle of agar prophylactic does not remain dormant but starts growing. The Indian Commission and the Lister Institute ascertained that in a few days a rich culture of tetanus develops in that medium. The culture gets extremely active and when the Mulkowal germ was used for the experiment the culture gave tetanus to guinea-pigs in doses of $\frac{1}{1000}$ th and $\frac{1}{10000}$ th of a cubic centimetre. (With a culture made in ordinary media $\frac{1}{100}$ th of a cubic centimetre was required to cause such an effect.) The fluid acquires also an unmistakable disagreeable odour, as happens with most anaerobic fermentations and putrefactions. Such a rich culture develops, however, only when the germ is left in a bottle full, or practically full, of prophylactic, the tetanus bacillus being an anaerobe. When left in the remnants of fluid, in a bottle emptied of its contents, the air present in the bottle inhibits the growth of the tetanus bacillus. This, however, is only the case when the bacillus is introduced by itself, free from admixture of other microbes. If aerobic germs gain access to the bottle at the same time, the tetanus microbe develops even in a few drops of fluid, but only in proportion as the other microbes present absorb the air dissolved in the fluid. In the two eventualities—i.e., (1) in the case of a contamination occurring at the time of opening a bottle for use, on the one hand; and (2) in the case of contamination at the time of preparing it, several weeks previously, in the laboratory—the condition of the contents of the bottle will, therefore, be very different. In the first case the bottle will contain only a relatively insignificant amount of impurity, such as is met with in natural or surgical tetanus accidents; in the other, it will present, so to say, a solid mass of tetanus and toxin, and the men inoculated will get an amount of virus such as in no circumstances occurs in natural accidents.

On the question as to whether an insignificant amount of tetanus, dropped into and diluted in a bottle of prophylactic at the time of using it, can affect 19 individuals, several experiments were made by the investigators and are published in the supplement. In one experiment a minute bit of straw contaminated with tetanus was introduced into a prophylactic bottle. A sixtieth portion of the contents of the bottle was then examined; a culture inseminated from that portion revealed tetanus bacilli. In another experiment a syringe needle dipped into a culture of tetanus was allowed to dry, and was then used for ejecting 20 cubic centimetres of a sterile fluid, in doses of one cubic centimetre each. The fluid conveyed tetanus germs up to the seventeenth ejection, the eighteenth and nineteenth were not examined;

in the twentieth no tetanus was found. In another experiment a bottleful of prophylactic was contaminated with one platinum loop of a fluid tetanus culture, and was then injected at once into guinea-pigs, with a thirtieth portion of the prophylactic each. Every animal contracted tetanus.

The possibility of 19 inoculations conveying tetanus germs from an accidental impurity falling into a bottle at the time of inoculation must therefore be considered as established. If the subjects of inoculation at Mulkowal were inoculated with such an accidental impurity the course of the disease exhibited by them should, on the whole, correspond in rapidity of onset and development of symptoms to what has been usually observed in India in cases of tetanus where the infection has been contracted in the usual way. On the other hand, if a rich culture of bacilli and a mass of manufactured toxin had accumulated in the bottle before the time of using it we should expect a much more rapid onset of symptoms. The character of the disease in the Mulkowal patients pointed to an average degree of gravity of infection and the symptoms were, in fact, slower to develop than has been observed to be the case in many accidental cases.

The bottle was carefully examined at the time of opening it for use; it had no smell of any kind and appeared normal in appearance and every other respect. The smell is a very valuable index of a tetanus growth having taken place in the fluid, and as it has been ascertained that this smell becomes unmistakable within three days of contamination the conclusion is justifiable that the prophylactic contained in bottle 53 N. had not been contaminated with the tetanus bacillus even for this short period.

Fifteen days after the inoculation the incriminated bottle was recovered and the remnants of fluid found in it were examined by Lieutenant-Colonel D. Semple, R.A.M.C. A mixture of a few tetanus bacilli presenting a "poor culture," and of a common microbe was found in it. The "poor culture" corresponded to one that would develop in the presence of air, in the few drops left in the bottle after it was emptied. With the culture thus developed the bottle acquired the characteristic smell. The effect on animals on which the fluid was tested was found to be several times weaker than that of a culture grown in a full bottle.

Lastly, the following fact bearing on the question was established by experiment. The Mulkowal operator worked with two syringes. After using up a bottle of prophylactic, he filled his syringe with carbolic lotion and left it for three or four minutes before using it again on another bottle, and operated in the meantime with his other syringe. It has been found that a syringe which had been filled with a rich culture of tetanus, such as develops in a full bottle of prophylactic, remained infective after such a process of cleaning and gave tetanus to 17 guinea-pigs out of 19, on which it was afterwards used. On the other hand, a syringe which had been in contact with a feeble culture of tetanus, or of which the needle alone had been so contaminated as to convey tetanus in 19 consecutive injections, was rendered safe after that process of cleaning. None of the subjects on whom the syringe was used in Mulkowal, subsequently to the cleaning applied after the first bottle was finished, suffered from tetanus. This indicates that that bottle did not contain the kind of culture which left the syringe infective after the summary cleaning.

The circumstances in which the inoculations were carried out at Mulkowal made accidental contamination possible. The operations were performed by Dr. A. M. Elliot in the open air on the outskirts of the village. Shortly before the commencement of the campaign a "plague manual" was issued to the inoculators. According to that manual "the opening of bottles of prophylactic and the filling of syringes are the chief duties of the compounder. If there is great press of work the duty of actually opening the bottles may be entrusted to any intelligent person, care being taken to see that he observes the above instructions carefully." The instructions in question prescribed as follows: "The compounder, in proceeding to open a bottle, must shake it well, then dip its neck in carbolic lotion, 1 in 20, and then, with a pair of dissecting forceps, which when not in use are to be kept in the carbolic lotion, remove the cork." At Mulkowal the cork was tightly fixed in the bottle and the compounder in withdrawing it dropped in the bottle and the compounder in withdrawing it dropped his forceps on the ground; he picked them up, hurriedly dipped them in carbolic lotion, and then completed the removal of the cork.

The above is a résumé of the facts set out in the voluminous supplement to the *Gazette of India*. The Commission

appointed to inquire into the case in India makes references to them, and the Lister Institute, to which body the technical portions of the report of the Indian Commission were referred, does the same. Mr. Haffkine's comments upon the findings of both bodies are published in the form of two letters addressed in the spring of 1906 to the Under Secretary of State for India. Our account is necessarily much abbreviated, but it seems to us that the supplement is unnecessarily lengthy.

Regarding the absence of smell in the bottle used at Mulkowal the Indian Commission says:—

No doubt the presence of tetanus, at any rate in a pure culture, may be detected by one experienced and on the alert by its characteristic smell; our personal observation, however, leads to the conclusion that all bottles of plague prophylactic have a peculiar and not agreeable smell, so that Dr. Elliot, under the circumstances under which he was working, may well have failed to specialise a tetanus smell.

Mr. Haffkine, commenting on their words, observes that in the above statement the detecting of the presence of a smell is confused with specifying a smell. It is the latter that requires an experienced person and it is also for specifying a smell that the culture requires to be pure—i.e., not adulterated by the smell from another fermentation. In the Mulkowal bottle it was established that there was no smell whatever, not that it had a smell the character of which was not specialised. To ascertain such a fact a specialist is not required. The statement of the Commission, he considers, confuses the broth prophylactic, which has a slight smell of broth and carbolic acid, and which was not in use at that period of the campaign, with the agar prophylactic, with which Dr. Elliot, the operator, was working and which is free from any smell. Dr. Elliot, who had been on inoculation duty for two years before, stated on evidence that he was perfectly familiar with that difference. His sense of smell was tested before the Commission and bottles of the two varieties of prophylactic were placed before him without his being told which they were. He distinguished without hesitation the two kinds of bottles and rejected at once the Mulkowal bottle, which was mixed up with the others, as being unfit for use.

The Lister Institute refers to the question of smell as follows:—

That a bottle presumably tightly corked (vide Dr. Elliot's evidence) should contain enough tetanus growth to destroy 19 people, and yet not be accompanied by sufficient smell to arouse the suspicion of Dr. Elliot, who, according to his evidence, remembers smelling this particular bottle, is difficult to comprehend.

From a subsequent explanation given by the institute, it appears that it did not consider the existence of a tetanus "growth" necessary in order that the bottle should contain enough germs to destroy 19 people; and the above pronouncement regarding the absence of smell was explained by it as meant to be in favour of the Bombay Laboratory.

Regarding the similarity of the disease developed in the Mulkowal patients with that observed in accidental cases of tetanus, the Indian Commission says:—

It must be conceded that in experiments on animals the rapidity of the onset is influenced by the amount and virulence of the toxin introduced, and a priori we see no reason for saying that similar results might not follow the injection of the tetanus microbe with its toxin into the human body. Manifestly there can be no appeal to clinical experience which is based on observations of cases where it must be supposed the microbe alone has been introduced and symptoms—after it has established itself in the injured part. Though India is a period which substantially corresponds with what was manifested at Mulkowal, it is impossible to say, in the absence of experiment, what the sequel would be where a ready formed toxin is injected into the human system.

Mr. Haffkine points out that while in all other instances the Commission based conclusions on the result of animal experiment, the above is the only instance in which it did not apply to man a rule which should have no exception, whatever susceptible animal or whatever disease be in question—viz., that a dose of ready manufactured toxin hastens the incubation of a disease and the development of a fatal issue.

Referring to the facility with which the syringe in Mulkowal was freed from tetanus, the Indian Commission quotes experiments (Nos. 1 and 2, Appendix B of the Report) in which Lieutenant-Colonel Semple found that when he filled a syringe from a tetanus culture developed in a emptied and cleansed it in the way done at Mulkowal, it still retained enough tetanus to infect 17 out of 19 animals on which it was afterwards used; while when a

feeble growth of tetanus was substituted for the above the syringe, after cleansing, appeared harmless. It says: "There are no means of forming an opinion as to the precise richness of growth in Bottle 53 N. beyond Lieutenant-Colonel Semple's view that it was a poor growth in comparison with that which he used in his experiments Nos. 1 and 2 in Appendix B. This view is based on (1) microscopical specimens, and (2) the rapidity of the fatal effects on guinea-pigs."

The Lister Institute on its part remarks:—

Whether the inoculation of a fluid containing tetanus organisms into the body of an animal is or is not followed by the disease, depends, as was shown by Semple, upon the number of organisms introduced under the particular circumstances.

Mr. Haffkine points out that, had the Mulkowal bottle been contaminated in Bombay and tetanus developed in it while it was full of prophylactic, it would have been just in the condition of the bottle which Lieutenant-Colonel Semple prepared for his experiments Nos. 1 and 2, and which left the syringe contaminated after cleansing; it would not have been in the condition in which Bottle 53 N. was when seen by him. The absence of untoward symptoms in those inoculated with the Mulkowal syringe after the first 19 persons confirms, therefore, the fact that the bottle used did not harbour tetanus cultivated since the preparation of the prophylactic in Bombay. There is also no ground for saying that Bottle 53 N., when seen by Lieutenant-Colonel Semple 15 days after the accident, was in the same condition as at the time of inoculation; everything, on the contrary, indicates that the "poor growth" seen by Lieutenant-Colonel Semple developed in the remnants of the fluid subsequently to the bottle being emptied.

The conclusion of the Indian Commission.—The ultimate conclusion of the Indian Commission upon the question of the place of contamination was as follows. Against the considerations favouring the view that contamination was introduced at Mulkowal "there is," it says, "the fact that the specific contamination permeated the whole fluid in the bottle, as is shown by the uniform results of the sufferers; and without a series of suppositions opposed to all reasonable probability these results can only be attributed to a growth of some duration, though not necessarily of great vigour." On account of this it concludes that the contamination had entered the bottle in Bombay at one of the stages of the laboratory preparation.

The conclusions of the Lister Institute.—The Lister Institute gave its conclusion on three occasions. First, in a detailed report in November, 1904, and comprising the description of all the experiments made by it. In this report the institute expressed the opinion that contamination was most probably at the time of inoculation present in the fluid, but that it was impossible to determine when it had entered it. This conclusion was referred to as being the same as that come to by the Indian Commission. The second pronouncement, communicated to the Under Secretary of State for India on Nov. 9th, 1905, was in the following letter from the director:—

In reply to your letter of 2nd Nov., 1905 (R. & S. 2555) I am directed to state that the institute is of opinion that the fluid used at Mulkowal probably became contaminated with tetanus before the time of opening the bottle at Mulkowal, but it also agrees with the Commission (extracts from the report of the Punjab Plague Inoculation Commission, page 5, sixth line) that the possibility of the contamination having effected an entrance at Mulkowal cannot be excluded.

Lastly, in May, 1906, the following report was given:—

In further reference to your letter R. & S. 502, of the 9th March, 1906, I have now the honour, by direction of the governing body of the Lister Institute, to submit to you the following observations on the letters from Mr. Haffkine of the 14th February, 1906, and the opinion that the probabilities were in favour of the view that the tetanus impurity was primarily in the fluid, did not feel justified in asserting this as a proved fact in view of the possibility of contamination at Mulkowal. The governing body regret that in their report of the 24th Nov., 1904, they inadvertently referred to their conclusion as the same as that of the Commission. The sentence in the Government Report that gave rise to this idea was, "That if (the contamination) might have effected an entrance at Mulkowal cannot be disputed; thus, by way of illustration, the stopper or the forceps might have been dropped on the ground and applied to the mouth of the bottle with contamination adhering, or spores settled between the rubber stopper and the rim of the bottle might have dropped in as the stopper was pulled out." The governing body overlooked the fact that the Commission subsequently considered this possibility as one cancelled by other considerations. But in this respect the governing body are bound to say they cannot fully concur, and while holding to their view of the probability, they think Mr. Haffkine has a right to claim the benefit of the doubt, especially in view of the fact elicited that the forceps used for drawing the cork at

Mulkowal were dropped on the ground and subsequently re-used by the operator on the same cork.

The governing body also regret that in the first paragraph of the section of their report dealing with the probable origin of the tetanus virus (page 3), to which Mr. Haffkine draws attention in his letter of 14th February (page 31), the words "the fact" were drafted into the sentence. The words should have been omitted and the sentence should have run: "But that a bottle, presumably tightly corked, should contain enough tetanus growth to destroy 19 people, and yet not be accompanied by sufficient smell to arouse the suspicion of Dr. Elliot, who, according to his evidence, remembers smelling this particular bottle, is difficult to comprehend." Mr. Haffkine is certainly entitled to this correction, though the argument in his favour was already clear from the context.

Mr. Haffkine points out that, with reference to the circumstances in which the inoculations were carried out at Mulkowal, it is known that it takes some 15 hours to destroy a tetanus impurity by carbolic lotion. The procedure prescribed could not asepticise the mouth of a bottle on which such an impurity might have settled in the open air, or sterilise a pair of forceps contaminated by being dropped on the ground. It appears that these instructions were prescribed in substitution of those issued by the laboratory, and which directed that "dissecting forceps are to be used for removing the stopper. The branches of the forceps are heated in the flame of a spirit lamp immediately before use and guarded from contact with any unsterilised object afterwards." The stopper and neck of the bottle are then passed several times through the flame of a lamp so as to cause very slight singeing of the stopper, and the latter is withdrawn with the heated forceps. After the bottle is opened any contact between its mouth and other unsterilised objects is to be carefully avoided, and if contact inadvertently occurs, the mouth of the bottle is to be heated again in the flame to disinfect it."

Lastly, we must briefly refer to the modifications of Haffkine's prophylactic, as questions arising here were dealt with in the course of the Indian Inquiry. It seems to us a pity that the inquiry was not kept strictly, at any rate in the first instance, to the all-important point of the time of the contamination of the deadly fluid. It has been mentioned in the beginning of this note that the prophylactic used in the Punjab was prepared partly from agar cultivations sterilised by heat and partly from broth cultures to which a small proportion of carbolic acid was added. Either of these processes is in use in European and American laboratories. The agar method of preparing the prophylactic with sterilisation by heat has been in use in the Pasteur Institute in Paris since 1900. Many of the antitoxic sera are sterilised by heat but in some laboratories a small proportion of antiseptic is added to them. That the addition is not without benefit no one denies but too much must not be claimed for it. For instance, the accident which occurred in Italy in 1900, and which involved the death of some 20 people from tetanus, was caused by the injection of an antidipteric serum prepared with 0.5 per cent. of carbolic acid.

The above considerations as a whole, facts and comments and theories, point, in our opinion, strongly to the conclusion that the laboratory was not at fault. We congratulate the Government of India upon publishing the supplement even after the expiration of a considerable interval of time. The value of preventive inoculation is as yet barely recognised by the public and apprehensions that errors in laboratory procedure may lead to appalling disasters will be for some time strong. It is a distinct advantage to the cause of scientific therapeutics that good reasons should be made publicly known for attributing the Mulkowal disaster to an accident at the periphery of the scheme and not to a central blunder.

Another point cannot be ignored. For four years Mr. Haffkine, the director of the laboratory in which Bottle 53 N. was prepared, has borne in the minds of many responsibility for the disaster, and justice required that the Government of India should make known to the public the degree of responsibility of its distinguished servant. We do not know what reasons the Government may have had for the slow course pursued, but the advantage which arises therefrom—one which we do not expect Mr. Haffkine to appreciate—is that the matter can be discussed with a freedom from personal bias that would have been impossible at the date of the disaster. The matter is over; what is necessary is that the experience gained from an investigation of the facts should be used to the full in the interest of the developments of scientific medicine.

Looking Back.

FROM—

THE LANCET, SATURDAY, Jan. 31st, 1829.

SURGICAL REFORM DINNER TO MR. WAKLEY.

Mr. Paty to Mr. Wakley.

33, Bouverie-street, Fleet-street,
Jan. 24th, 1829.

DEAR SIR,—The gentlemen who undertook the arrangements connected with the resolutions, adopted at a public meeting in the Freemasons' Tavern, on Tuesday, Dec. 23rd, 1828, (a copy of those resolutions having already been transmitted to you,) have requested me, as Chairman of that meeting, to inform you, that, should the day suit your convenience, they consider the 18th of February next, the most proper time to beg the favour of your company in the same tavern, at a public dinner.

I beg leave to state also, that their reason for naming that day in preference to any other, was, that it will be the anniversary of the commencement of those proceedings which, if zealously pursued, with the continued assistance of a Free Medical Press, will tend to raise your professional brethren from their present degraded condition; which has been attributed, with justice, to the constitution and government of the Royal College of Surgeons in London.

An answer to this letter, at your earliest leisure, will oblige the gentlemen at whose request I write; and also,

Your most obedient Servant,

Thomas Wakley, Esq.

JAMES PATY.

Mr. Wakley to Mr. Paty.

Bedford-square, Jan. 24, 1829.

DEAR SIR,—I need scarcely say, that I feel most sensibly the very flattering testimony of approbation, which my public conduct received from the large and respectable meeting, over which you presided on the 23rd of December, at the Freemasons' Tavern. My exertions in the cause of a Free Medical Press, and Free Medical Institutions, have, at least, been honest, and honest exertions the public of this country never fail to appreciate. I am sensible also, that the late trial has contributed greatly to strengthen the hands of public writers, by the important decision given at the outset of the cause, in favour of Journalists who feel that they are in a situation to justify an alleged libel, and also to open the eyes of the public to the corrupt system which prevails at our hospitals in the distribution of patronage, though I was not permitted to enter fully into this part of the case. But, Sir, greatly as I deprecate and detest the system of nepotism, to which, I believe, Mr. B. Cooper is indebted for his situation, I entertain, equally with yourself, and the gentlemen whom you represent, no kind of hostility towards that gentleman. On the contrary, I respect his private character, and I would rather not, therefore, at present attend a festival, which, though instituted entirely upon public grounds, malevolence might perhaps construe into an act of persecution directed against his private interests. If the object of the festival were to celebrate the triumph of surgical reform, I should be proud and happy to attend. But though the victory is, I believe, in our hands, the battle is still to be fought. I trust, however, the day is not far distant when we may meet to celebrate, not the virtual defeat of a few individuals, but the complete and final overthrow of a corrupt system.

In conclusion, permit me to express my deep sense of gratitude towards yourself, and the gentlemen with whom you are acting, for your very flattering and distinguished approval of my efforts in the noble and thriving cause of Surgical Reform.

Your obliged and obedient Servant,

James Paty, Esq.

THOMAS WAKLEY.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 2, 1907.

The Harvest of the Sea.

PROBLEMS connected with the harvest of the sea must necessarily attract the attention of all those interested in the world's food-supply. HUXLEY once said that the productivity of the sea was so great that man's influence on its wealth was scarcely worthy of regard by comparison; and yet the experience of the past 25 years has shown, at any rate for certain seas, and notably the North Sea, that man's influence is not by any means without serious effect. In the North Sea there has been an enormous development of trawl-fishing and there are statistics which distinctly indicate that the plaice, the haddock, the sole, and the turbot have diminished, not only in regard to total catch but in regard to size also. Concerning the sole and the turbot in particular an analysis has revealed an unmistakable decrease as regards the total quantities caught in the North Sea, while the quantities of the large fishes have continually decreased, and the quantities taken of the small have not sufficiently increased so as to maintain the total quantities at the same uniform level. There are, of course, a number of circumstances besides over-fishing which probably contribute to this result; there are the peculiar habits of the fishes themselves to be taken into account, there may be changed physical conditions or stresses of weather which have led the fishes to change their habitat, or it may be that the vast catches of undersized fishes are reducing the piscatorial productiveness of the sea. Whatever the real reason may be the fact that the harvest of certain fishes is year by year getting less bountiful is a serious outlook, especially for this country, and presents a problem which, bearing in mind the great importance of this auxiliary food-supply to the community, it is our duty to try to solve. It is interesting to recall also that a fish famine not many years ago seriously diminished the supply of cod-liver oil.

Common sense has taught us what is the result of neglecting to study the conditions of the land which are favourable to the cultivation of food-yielding plants and animals. Scientific methods are now available as a powerful aid indicating what should be done in order that where one blade of grass formerly grew two or more might be induced to grow by scientific treatment of the soil. If we have profited by utilising the experience and the results of scientific investigation as applied to increasing the productiveness of the soil, surely we may profit also by applying similar principles to the sea.

Fish occupies a very important and valuable place in our supplies of food and it is hardly reasonable to suppose that the enormous catches year by year can be taken without ultimately affecting the yield, at any rate in the immediate neighbourhood of our shores. It is, of course, hardly conceivable that the productivity of the whole world's ocean would be materially affected by the fishing operations, extensive though they may be, which are confined to the shores of the small islands which compose Great Britain. But it should be remembered that the fish-supply of this country is very largely dependant upon the success met with by our home fisheries, and this fact affords a sufficient reason why the study of the economy of the sea should be pursued vigorously in this country and the knowledge so gained applied without loss of time. We do not forget, however, that this study has already been well begun and with the most encouraging prospects, but the organisation of inquiry has been so far on too small a scale and the scope of the investigation is enormously wide. Results of the most interesting and practically important kind have been gained for us by the admirably directed efforts of the Marine Biological Association of the United Kingdom, by the Lancashire and Western Sea Fishery Committee in association with the Liverpool Marine Biology Committee, and by the Irish and Scottish Fishery Boards, while fortunately we possess an Association of Economic Biologists, which held its fourth annual meeting at Cambridge a week or two ago and at which one at least important paper bearing upon the study of the economy of the sea was read and discussed. The British Government, however, offers very little practical encouragement to workers in the field of marine research. It possesses a Board of Agriculture, which is doubtless a source of some scientific help to farmers of the land but there is no department which is concerned in helping to maintain the harvest of the sea. There is no substantial Government aid offered which is calculated to promote the study of marine life and environment, to throw light on which may ultimately mean the preservation of one very important source of food-supply.

To do the Government justice, however, it was on the occasion of the formation of an international council at Copenhagen in 1902 for the study of the sea that it was decided to appoint British delegates who were instructed to report from time to time on the work of this international council. These delegates published their first report some time ago and it has recently been succeeded by a second contribution in the form of a Blue-book which amounts to a review of the organisation of the scientific and practical work of the international investigations, and of the methods, means, and results, in so far as these have assumed a definite character at the present time. We have nothing but admiration for the splendid organisation which has been formed and for the extraordinary tact with which each section of the investigation has been allotted to each special investigator. Amongst these it is pleasing to see the names of some well-known English authorities. In order to reap practical results as soon as possible it was decided to concentrate the biological investigation of the first years on certain practical and important problems, and the first objects of investigation were (1) the migrations of the

principal food fishes of the North Sea fisheries, especially of the cod and the herring; and (2) the question of over-fishing in waters mostly fished by British, Dutch, German, and other trawlers, with special regard for the plaice, sole, and other flat fish, as well as the haddock. Meantime the periodical and other variations of the Atlantic currents and their bearing on meteorological and biological phenomena have been studied, the marine organisms (the food of the fishes) have been taken at various stations and by trade steamers and investigated, the composition of the sea water in relation to its constituents which support marine algae has been brought to light, the occurrence and the distribution of the eggs and various age groups of the food fishes have been examined, fishes have been marked and caught again after a time and inspected, and so forth. Thus may we arrive at the determination of the questions as to how the fish nourishes itself, reproduces its kind, whether over-fishing is going on, whether a fish is stationary or migratory, whether an influx from one sea is occurring to compensate for the fishes removed from another, whether oceanic currents or changes of temperature have any bearing on migration, and other equally important questions, the answer to which must have results of far-reaching importance to the fishing industry and to the community generally. The whole scheme is aiming at exact knowledge and the progress so far made affords a fascinating study and is of a most instructive kind. The extraordinary migratory movements of the plankton, the organisms of the sea, promise to give the best clue as to the movements of their consumers. The rôle therefore played by the plankton in the economy of the sea is probably pre-eminent in importance in regard to the immediate object of the inquiry. The growth of plankton, it would appear, must be localised; in other words, food must be found and located for the fishes, just as the grasses, by the fertilisation of the soil, must be stimulated to bring forth abundantly in order that our sheep and cattle may thrive. "The production of plant substance in the sea," writes Professor BRANDT, "may be compared with that on land by arranging the chemical composition as to quality and quantity along parallel lines. We may determine how much organic substance in general and in particular how much albumin, fat, and carbohydrates are formed per unit of surface during the course of the year on the one hand for land (i.e., pasture), on the other hand for water. The two more closely studied main groups of plankton flora, the Peridineæ and the diatoms, are very nearly related in composition to the best forage, and in autumn the plankton of Kiel Bay has, in general, almost the same composition as pasture."

It is doubtful whether any previous scientific research has ever assumed the colossal proportions of this fisheries inquiry and certainly there never has been such a splendid example of the value of scientific international coöperation. An intensely interesting series of scientific experiments is being conducted by clever and skilled men representing all nations. The questions thus being so carefully studied are the concern of the whole world and the wish that success will crown these inquiries must be universal. The sea will then be fished on rational and not empirical lines and an unflinching and constant source of food-supply will, it is hoped, be the reward.

The Actions of Pituitary Extract.

A MOST fruitful field of investigation in physiological research has been opened out in recent years by the study of the interactions of the various organs of the body. On the one hand, it has enriched physiology by the elucidation of the so-called internal secretions and the more recently discovered group of hormones, while on the other hand it has yielded to medicine valuable information as to the pathology of certain obscure diseases and also therapeutic agents of proved value in thyroid extract, adrenalin, and other substances derived from glandular organs. A considerable amount of attention has been directed to the pituitary body in order to determine whether it forms some internal secretion and two views have been suggested as to its functions, one being that it produces a secretion analogous to that of the thyroid body and that it may act vicariously for that organ, and the other that it exerts some ill-defined influence upon the nutrition and growth of the extremities, especially of their bony framework.

An important paper has recently been communicated to the Royal Society by Professor E. A. SCHÄFER and Dr. P. T. HERRING¹ containing a record of some interesting experiments on the action of pituitary extracts upon the kidney. As the outcome of their research they suggest that the internal secretion of the infundibular portion of the pituitary body is ancillary to the functions of the renal organs. In 1901 Professor R. MAGNUS and Professor SCHÄFER² observed after injection of pituitary extract into the veins a marked increase in the flow of urine with expansion of the kidney—a remarkable result when the powerful vaso-constricting effect of the extract is taken into consideration, an effect only inferior to that produced by suprarenal extract. The objects of the research now under consideration were to investigate further this effect, to determine with which part of the pituitary body it was associated, and to study its relation to the substance raising the blood pressure. The extracts used were made almost entirely from the pituitary body of the ox, although in a few experiments extracts were made from the pituitary body of the dog and the cod with precisely similar results. According to Professor SCHÄFER and Dr. HERRING the pituitary body of the ox has the general shape and size of a large cob nut, and consists of two lobes, of which the posterior is the smaller and is imbedded in, and ensheathed by, the anterior, the relations of the two parts being thus somewhat similar to those of the cortex and medulla of the suprarenal body. There is a curved transverse cleft (the intraglandular cleft) separating the two lobes except near the circumference, which renders it an easy matter to shell out the posterior lobe and to obtain it separately when it is found to be relatively small, weighing only a few grains. It was shown by HOWELL that the substance acting upon the heart and blood-vessels is confined to the posterior lobe, and this is demonstrated to be true as regards the diuretic effect of the extract by the present research. As pointed out by the writers in their paper, this is the more remarkable because the anterior lobe presents an obvious glandular structure, consisting of masses of

¹ Philosophical Transactions of the Royal Society of London, Series B, vol. cxcix., pp. 1-23, 1906.
² Proceedings of the Physiological Society in Journal of Physiology, vol. xxvii., p. 9.

epithelial cells which in places surround a lumen or line a cyst-like cavity, while the posterior lobe is composed mainly of a tissue which resembles the grey matter of the nervous system containing many glia cells and, perhaps, a few nerve fibres and nerve cells. The extract used was prepared from the posterior lobes of a number of glands dried at the atmospheric temperature. The dried substance so obtained appears to retain its active properties for months or even years, and for use one part of the dried material was boiled with 100 parts of Ringer's solution and filtered. This extract is referred to as the 1 per cent. aqueous solution. Previous extraction of the dried material with alcohol or ether does not seem to diminish the activity of the saline extract prepared as above described.

The effect of the injection of such an extract upon the heart and blood-vessels, producing a general constriction of the arterioles with a marked rise of blood pressure, was shown by OLIVER and SCHÄFER³ and confirmed later by HOWELL,⁴ who also showed that the rise of blood pressure occurs in spite of a marked cardiac inhibition which may also be produced. He further observed the peculiar fact that a first dose of any magnitude confers an immunity as regards any effect on the heart or blood-vessels to a second dose given within 30 to 60 minutes; indeed, it was subsequently shown by SCHÄFER and SWALE VINCENT that a fall of blood pressure may be produced by second and subsequent injections and that the rise of pressure produced by the first injection may in some cases be preceded by a slight fall. The explanation offered by the last-mentioned observers was that the pituitary extract contained two substances having opposite effects (pressor and depressor), the former overcoming the latter usually in the first injection, while with subsequent ones a reversal is obtained. There are, as can readily be seen, certain resemblances in the action of pituitary extract to that of suprarenal extract, but they are certainly not identical, since the vascular contraction and cardiac inhibition obtained with pituitary extract are much more prolonged than those with suprarenal extract; moreover, the immunity to a repeated dose occurs only with the pituitary substance. Again, suprarenal extract acts as a general excitant of all glandular and muscular tissues that are innervated by the sympathetic system, which is not the case with pituitary substance. The most striking difference is, however, in relation to their effects on the kidney; for while suprarenal extract produces a marked constriction of the renal vessels and cessation of the flow of urine, pituitary extract produces dilatation of the vessels of the kidney and an increase in urine, sometimes preceded by a temporary diminution or cessation with or without a temporary shrinkage of the volume of the kidney. That this increase in urinary flow is not at any rate altogether due to the rise of blood pressure is proved by the fact that with second and subsequent injections the diuretic effect is still marked, although there is usually a fall of blood pressure—in other words, the immunity to second injections noticed with regard to the pressor and cardio-inhibitory effects of the extract does not extend to its diuretic action, which would seem also to suggest that it is due to a separate chemical substance. Another peculiarity is that the increased flow of urine is prolonged,

lasting long after the general vascular influence of the extract has passed off, while an interesting fact noticed in some animals is the prolonged period of latency which sometimes intervenes between the injection and the diuretic effect, which may extend to several minutes. It is also stated that the effect upon the kidney is not proportional to the amount given; indeed, within certain limits the kidneys seem to respond more readily to a small than to a large dose of the extract, a fact which the writers suggest is in consonance with the view that the pituitary body produces a secretion which is discharged into the blood and subserves a diuretic function. The effects of hypodermic injection and of injection of the substance into the stomach yielded somewhat indefinite results. On treatment of the pituitary substance with hydrogen peroxide it appeared that the substance acting on the blood pressure was rendered inert, while the diuretic substance was not affected. Reducing agents, on the other hand, apparently have no influence on any of the active constituents of the extract. The extract was not found to exert a similar action upon glands other than the kidney, its activity in promoting secretion being apparently confined to that organ. Professor SCHÄFER and Dr. HERRING conclude that the diuretic activity of this substance is far greater than that of any substance in the pharmacopœia, and since by its actions on the vascular system it tends to produce an optimum condition for renal activity and apparently in addition to exert a specific stimulation upon the renal epithelium, it is regarded as probable that its chief purpose is ancillary to the function of the kidneys. They further draw attention to the similarity in development, structure, and functions between the suprarenal and the pituitary bodies. Both occur in all vertebrates and each consists of two parts, one being a highly vascular epithelium and the other being of neuro-ectodermic origin; in neither are extracts from the epithelial and more obviously glandular portions active, whereas the neuro-ectodermic parts yield powerful substances. It is suggested that in both organs the active substance passes through certain stages of its formation in the epithelial part and is altered to its active condition in the neuro-ectodermic part.

These interesting and important researches are obviously of great practical importance and deserve careful consideration at the hands of clinicians and pathologists, for, as the writers suggest, it will be of interest to know whether diabetes, and especially diabetes insipidus, is associated with hypertrophy of the pituitary body. Moreover, the substance may prove to have a field of therapeutic usefulness.

Reminiscences of the Liverpool Lock Hospital.

IN the January number of the *Liverpool Medico-Chirurgical Journal* Mr. FREDERICK W. LOWNDES has given an interesting account of the Liverpool Lock Hospital and he has described the large amount of work which was there done. Soon after the first Liverpool Infirmary was opened in 1749 some 75 beds were set apart for the treatment of venereal disease. When the second Liverpool Infirmary was built in 1824 it was found that the demands on the available space were so great that there was no room in it for venereal cases. The need for accommodation for these cases was

³ *Journal of Physiology*, 1896, vol. xxiii.
⁴ *Journal of Experimental Medicine*, 1893, vol. iii.

met by the opening of the Liverpool Lock Hospital in 1834. In the venereal wards of the infirmaries and in the Lock Hospital much good was done not only for the patients but for our knowledge of venereal disease. Even in the early days of the Liverpool Lock Hospital the idea still existed that gonorrhœa and syphilis were identical, and it can hardly be doubted that the chief factor in the persistence of this opinion was the experiment in which JOHN HUNTER in 1767 inoculated himself with gonorrhœal pus and yet suffered from all the manifestations of syphilis. We now know that there was some error in the conditions of the experiment; probably the patient from whom the gonorrhœal pus was taken was also affected with syphilis. It took some years of observation to disprove this supposed identity and until this was done gonorrhœal cases were regularly salivated but in vain. When gonorrhœa had been definitely separated from syphilis there still remained the confusion of the hard and the soft chancre, and the confusion was very excusable, for occasionally the two poisons are inoculated on the same spot at the same moment and so the two sores are combined. It is easy for us with our present knowledge to recognise how the two may usually be distinguished but it must have been exceedingly difficult for those who worked at the subject to arrive at the truth.

Mr. LOWNDES studied at Liverpool from 1860 to 1863 and then he went to Edinburgh. At Liverpool he had seen the beneficial results of the careful administration of mercury. At Edinburgh he heard Professor HUGHES BENNETT who taught that mercury was useless in syphilis and should not be given. In opposition to this opinion Dr. THOMAS EDWARD BEATTY maintained that infantile syphilis and syphilis in married women were almost all due to lack of mercurial treatment of the husband, and with this opinion Mr. LOWNDES agrees. In 1875 he was elected surgeon to the Liverpool Lock Hospital and his experience since that time has only served to deepen his sense of the value of mercury in syphilis. He sees no need, and in this we agree with him, for patients to go to Aix-la-Chapelle for the treatment of syphilis as they can be perfectly treated in this country. When, however, a patient will not devote himself to his treatment but allows business or pleasure to interfere with it, then the regular habits at Aix-la-Chapelle, freedom from worry, and thorough treatment which cannot well be avoided, will often effect a cure which might otherwise have failed of accomplishment. With the year 1898 Mr. LOWNDES's active work at the Liverpool Lock Hospital came to an end and he was appointed consulting surgeon and at the same time the reception of in-patients ceased. It is a curious result of the modern spirit that the number of beds for venereal cases in this country is steadily getting less, though there is no visible decrease in the number of cases; there is a feeling that to provide for the treatment of venereal cases is to encourage vice. No attention is paid to the fact that many cases of syphilis occur in those who do not owe it to any vicious act. To allow syphilis and other venereal diseases to go unchecked because the majority of the sufferers from these diseases have transgressed is very unwise. The health of the nation as a whole suffers. As medical men we must not look to the manner in which a disease may have been contracted; we have to treat the diseased condition. As well might a physician refuse to

treat a patient with cirrhosis of the liver because the man's own self-indulgence had caused his sickness. It is often possible at the same time to add a "word in season" that may prevent a recurrence of the vice through which the disease arose but to diminish the amount of disease in the community is our main duty. The more thorough treatment of syphilis and other venereal diseases would go far to diminish the deterioration from which certain sections of the nation suffer and need in no way lead to the increase of vice.

Annotations.

"No quid nimis."

COOKING BY GAS: IS IT INJURIOUS TO THE MEAT?

THERE are some people who state that they can easily tell whether meat has been cooked by gas. They not only can see differences in the appearance of the meat but can also discern a peculiar taste for which the products of combustion of gas are in their opinion accountable. Cooking by gas by the method which is nearest to that known as roasting in front of the coal fire is generally conducted so that the meat is exposed to the direct heat of the gas flames, and the products of combustion sweep the surface of the joint. The gas-cooker is, in fact, merely a closed chamber or oven provided with a suitable number of gas-burners. An exit is commonly provided in order to allow for the escape of these products and hot air is necessarily circulated through the gas oven. If the cooking were done by the gas oven being heated on the outside it is difficult to see why such a process should be different in any respect from that in which the cooking is done in the ordinary range oven heated by a coal fire. The question narrows down, therefore, to a consideration of the effects which the products of gas combustion, whether they be complete or incomplete, are likely to have upon the meat. We may thus count upon the exposure of the meat to small quantities of such incomplete products of combustion as carbon-monoxide, acetylene, and sulphurous acid, and to the complete products carbon-dioxide, steam, and traces of sulphuric acid. It is well known that during the cooking of meat by whatsoever process the meat loses weight or, in other words, there is a constant emission of vapour, and consequently it can hardly be supposed that absorption can be going on at the same time. But assuming that not to be the case, what effects is the bombardment of small quantities of carbon-monoxide, acetylene, and sulphurous acid likely to have on meat and would these effects render the meat less suitable for food? Both carbon-monoxide and acetylene form molecular combinations with the colouring matter of the blood, but then at the high temperature of the cooking process it is hardly conceivable that such a combination could take place, besides which a plentiful supply of air would prevent either carbon-monoxide or acetylene from being permanently absorbed. The minute quantity of sulphurous acid would tend to bleach the colour of the meat, but as a rule no effect of this kind is observed. If sulphuric acid is formed this at a high temperature might possibly char slightly the surface of the joint. All such speculations, however, are strongly discounted by the fact that meat during its cooking is emissive and not absorptive. As to steam and carbonic acid, it is questionable whether they could have any depreciable chemical action at all. The conclusion seems inevitable, therefore, that any differences that are shown between meat cooked in front of the fire or

in an oven next to the fire and meat cooked in a chamber containing gas flames inside must be due entirely to physical and not to chemical causes. In a word, the explanation must lie in the different manner in which the heat is applied in the different circumstances. It should be borne in mind, however, that in cooking by gas the meat is exposed to a rapid current of steam derived from the combustion of the gas, whereas in the range oven the only steam present is that which comes from the meat itself, while in open roasting in front of the fire there is no atmosphere of steam round the joint at all, the air is free to play over its surface, and the cooking is done by radiated heat. We believe the process of open roasting is far superior to that of close roasting, the flavour of the meat so cooked is invariably better and the tissue itself is generally more tender when it is cooked by roasting, and, consequently, more digestible. We are inclined to put forward the view that the cooking of meat by gas is less satisfactory than cooking by the open roast method, because in the former case the joint is cooked partly by ascending heat currents and partly by steam. According to this view cooking by gas may be regarded as a hybrid process, that is to say, part boiling or steaming and part roasting. The constant stream of steam over the surface of a joint of meat is calculated to extract some of its flavour and to exert a toughening effect on the tissues of the meat. We do not think, however, that any difference between the effects of gas-cooking and cooking by roasting or in the range oven can be regarded in a serious light from a point of view of dietetics. The differences in our opinion are due entirely to different physical conditions under which the meat is cooked, and we may safely exonerate, we think, the gas-cooker from any suspicion of poisoning the meat by reason of the escape of unconsumed gaseous products from the gas flame. The process of grilling meat exposes that food to a torrent of incomplete products of combustion compared with what happens in the gas-cooker, and yet a grilled chop is very popular, "the taste of the grill" (the sulphurous acid and perhaps a little smoke) being held in esteem; but the gases round the chop in this case do not contain anything like the proportion of hot aqueous vapour which is present in the gas-cooker.

TYPHOID SPONDYLITIS WITH BONY CHANGES.

TYPHOID spondylitis is a rare sequel of typhoid fever which manifests itself during convalescence by painful stiffness, swelling, and tenderness of the lumbar spine. It appears to be due to serous inflammation of the periosteum and adjacent structures (perispondylitis). In the *American Journal of the Medical Sciences* for December, Professor Thomas McCrae of the Johns Hopkins University has shown that definite bony changes may result—a fact which does not appear to have been observed previously. He reports the following case. A man, aged 28 years, was admitted into hospital on July 4th, 1904, complaining of a stiff and painful spine. On Jan. 2nd he took to bed with a moderate attack of typhoid fever. Early in March, while convalescent, he awoke one night with severe pain in the back and had to lie flat because any attempt to rise caused acute pain in the lumbar region. Since that time his spine had been stiff. At the end of March he was able to sit in a chair and at the beginning of April he began to walk. During this time his back was stiff but not particularly painful except on movement of the lower part of the spine. His health gradually improved but the spinal condition grew worse and any exercise caused much pain. On admission there was almost constant pain in the lower part of the back and down the thighs. The patient was well nourished and his colour was good. The abdominal muscles resisted palpation. The spine was held perfectly straight and there was practically no

curve in the lumbar region. When the patient had to sit up he pulled himself up with his hands and kept his spine as stiff as possible. He had great difficulty in standing and assumed a characteristic attitude with his hands on his thighs. It was difficult to test any movement of the spine as the patient could not be induced to bend forwards or backwards, but lateral movements to the right seemed less than those to the left. Stooping was done with a stiff spine and on rising the patient "climbed his legs." On the day after admission Vidal's reaction was well marked. At times the patient complained of severe spasms in the muscles of the back. A spinal jacket was applied but seemed only to make the condition worse and large doses of sedatives had no effect on the pain. On July 10th the temperature, which had been normal since admission, rose to 102° F. The pain became more severe and there was marked rigidity of the muscles of the back. The knee-jerks could not be obtained. The fever continued in a rather irregular manner, the temperature varying from normal to 104°. On the 15th rose-spots were seen but the spleen could not be felt. The temperature became more regularly elevated, the tongue became furred, and the lips became dry. The patient lay with his knees drawn up and there were frequent spasmodic movements of the abdominal muscles. The area of splenic dulness increased. There was slight prominence of the spinous processes of the second, third, and fourth lumbar vertebrae, on each side of which there was some fulness. Over these areas the patient constantly complained of pain. On the 18th he was more comfortable and on the 29th the temperature became normal and there was little pain. On August 15th he could sit up in bed. He soon got up and was discharged on Sept. 8th with no deformity or tenderness but he could not bend forwards or backwards. He held his spine rigidly and still when he stooped "climbed down his thighs." A radiogram taken on July 5th showed on the right side between the second and third lumbar vertebrae a deposit of bone filling an intervertebral space, apparently deposited in the lateral ligament. In the three months following his discharge recovery progressed. He was able to run and to jump as well as ever but stiffness, lasting a few minutes, occurred in the lumbar region after remaining in the bent position for some time, which was evidently due to contraction of the muscles. The fever, which occurred six months after the original attack and four months after the onset of symptoms of "typhoid spine," might be regarded as due to the bone lesion or to a relapse or second attack of typhoid fever. Its duration of 19 days, the general appearance of the patient, the rose spots, and the increased splenic dulness point to the conclusion that it was a relapse or second attack. Professor McCrae also reports a case of spondylitis in paratyphoid fever in which radiography showed a deposit of new bone between the fourth and fifth lumbar vertebrae on both sides.

THE CHANGEABLE WEATHER.

It remains to be seen what will be the full effect on the public health and the death-rate of the recent sudden return to winter in the United Kingdom. If violent changes are as pernicious as they are generally supposed to be the returns of the Registrar-General during the next week or so will show a lamentable increase in the death-rate in all parts of these islands. Until Monday, Jan. 21st, the month had been mild, with an equable temperature and humid air. The thermometer rarely failed to rise to nearly 50° F. during the afternoon, frost was scarcely ever seen even on the ground and although the wind blew almost continuously from the south-west or the west there was extremely little rain. The change to winter commenced during Tuesday, when the drop of temperature during the day was all the more trying on account of the strong easterly wind by

THE method of treating syphilis by intramuscular injections of insoluble preparations of mercury in suspension has somewhat waned in popularity of late. A favourable account of the use of mercury salicylate is given by Dr. W. H. Palmer in the *Boston Medical and Surgical Journal*, 1906, No. 17. Mercury salicylate contains approximately 50 per cent. of mercury, it is insoluble in water, and is administered in suspension in liquid paraffin. The initial injection should contain half a grain of the salt or five minims of a 1 in 10 suspension. After two days a second injection of three-quarters of a grain is given and four days later the dose is increased to one and a quarter grains. Dr. Palmer has administered over 800 injections of the drug and in 75 per cent. of the cases a one and a quarter-grain dose given every seven days was sufficient to produce satisfactory results. In America it is customary to give a course of the injections for two years; after an interval of a few months the treatment is resumed for six months or a year. The liquid paraffin should be sterilised, otherwise painful *nodosities* may occur at the seat of injection. The needle should be sterilised by immersion in a mixture of alcohol and ether. The patient should lie face downwards, as in this position the gluteal muscles are more relaxed and in case of *syncope*, which may occur at the time of the initial injection, the position is a favourable one. The fluid is injected about 1 to 1½ inches below the surface, after which the seat of the injection is *massaged* for about 15 minutes to prevent the development of *nodosities*. Dr. Palmer considers that mercury salicylate has advantages over

all other preparations of mercury for intramuscular injection. When given by injection or by the mouth it does not produce gastric irritation, diarrhoea, colic, or other unfavourable symptoms, such as are produced by the other insoluble preparations of mercury. It very rarely produces abscesses and the nodosities that sometimes develop at the place of injection disappear within a few days without treatment. Owing to its slow conversion into a soluble form a considerable quantity of the drug can be injected at one time. Of the other preparations that have been employed perchloride of mercury is no more efficacious, causes much pain, produces abscesses, and the injections require to be repeated more frequently. Calomel and the yellow oxide of mercury both have the disadvantage of setting up a severe local reaction after injection. Dr. Palmer states that in rare instances unfavourable results have followed the employment of mercury salicylate, due to a pulmonary embolism produced by the introduction of the injection into the circulation when the needle penetrates a vein. Again, in about from 20 to 30 seconds after the injection the patient sometimes experiences a dry cough, accompanied by a sensation of tightness in the chest, faintness, nausea, and air hunger. The cough usually persists for some days, during which time the sputum may be tinged with blood.

FILTHY WOOL-FLOCK BEDS.

Mr. Peter Fyfe has contributed to the *Journal of the Royal Sanitary Institute* for January further evidence of the danger of common bedding to the public health. Four new wool-flock beds were bought in Bristol and Glasgow, at prices ranging from 7s. 6d. to 10s. 6d. each, and portions of the flock have been examined bacteriologically by Dr. R. M. Buchanan and chemically by Mr. F. W. Harris. The flock of the four beds contained respectively 3, 10½, 1, and 22 million organisms per gramme, comparing very badly with crude Glasgow sewage which contained about 197,000 organisms per gramme. A high proportion of soluble matter was present, the flock of one of the beds, weighing 33 pounds, losing 5½ pounds in weight when washed with 40 gallons of water. In all cases the washings on analysis compared unfavourably with crude Glasgow sewage. The latter absorbed 3.095 grains of oxygen per gallon in three minutes; the minimum corresponding figure for the washings from the flock bedding was 4.24 grains. The corresponding figure for each of the other three washings was more than double this amount. In each case the amount of albuminoid ammonia in the washings exceeded that present in crude sewage. Experiments were carried out to determine the effect on the atmosphere of a room of making an ordinary flock bed in a number of clean dwelling-houses. Agar culture plates were exposed in the rooms before and after the beds were made by the housewives in the usual way. Dr. Buchanan found an increase in the number of bacteria in the air of each apartment as the result of making the beds, the number being increased 30 times in the case of the cheapest bed and 239 times in the case of a bed which had been bought at second hand, while the atmosphere was rendered disagreeable in both apartments. The making of a number of more expensive beds produced only a relatively small increase in the number of organisms in the atmosphere and there was no perceptible odour or dust. As Mr. Fyfe points out, hundreds of thousands of persons in this country are constantly sleeping upon stuff which, after rinsing in a large volume of water, yields a liquid containing more putrescible organic matter than ordinary sewage, and more total solids, to say nothing of colour, than are allowed in effluents into rivers. Further, the presence of such filthy bedding in houses is a constant menace to the purity of foodstuffs, especially to milk, meat, and soup, for the storage of which there is

seldom proper accommodation in those houses in which cheap bedding is to be found. The bacteriological examination of the flocks has not yet been completed but sufficient evidence has been produced to demonstrate again the pressing urgency of legislative measures to prevent the continued sale of loathsome bed-stuffing.

THE VALUE OF SODIUM CITRATE IN DYSPEPSIA.

ACCORDING to Dr. L. Lachenay, writing in *La Semaine Médicale*, Nov. 7th, 1906, sodium citrate gives favourable results in the treatment of dyspepsia in adults, especially in cases of gastric pain, occurring three or four hours after a meal, followed by vomiting. He prescribes a 10 per cent. solution of the salt in tablespoonful doses (*cuillerées à soupe*), to be taken every five minutes from the time when the pain and sickness commence until they cease. The average dose required to give relief is from 30 to 60 grains; occasionally a dose of 15 grains will suffice, while in some cases it is necessary to give as much as 120 grains. In case of a relapse the treatment should be renewed, with the result that the symptoms frequently disappear in a few days. In 14 cases treated in this manner seven were cured in eight days; one patient, however, was under treatment for three weeks and two others for a month before a satisfactory result was obtained. The other patients were benefited by the treatment; one of these, suffering from ulcer of the stomach, experienced considerable amelioration of the pain from the administration of 45 grains of sodium citrate every day for 37 days.

THE RELATIVE SIZE OF THE MATERNAL PELVIS AND OF THE FŒTUS.

IN THE LANCET of Jan. 19th, p. 150, Captain J. C. Holdich Leicester, I.M.S., recorded the results of some observations on the above subject. He was led to an investigation of this matter by reading a paper by Captain Clayton A. Lane, I.M.S., published in THE LANCET of Sept. 26th, 1903, p. 885, entitled "A Clinical Comparison of the Maternal Pelvis and of the Fœtus in Europeans, Eurasians, and Bengalis." Captain Leicester's observations were carried out on the same class of women, only on a considerably larger scale. At the time of the appearance of Captain Lane's paper we considered the matter in a leading article and pointed out that the results obtained by him, which he ventured to enunciate in the form of a provisional law—namely, that "The child grows in utero in such a manner and at such a rate that at full term its size is proportional to that of the mother's pelvis through which it has to pass in order to be born," were not in accordance with the teaching of such authorities as La Torre, Badin, and Pinard, who had shown that the fœtus acquires the same development and size in contracted pelvises as in normal pelvises. The figures given by Captain Leicester are founded on a much larger series than those of Captain Lane—viz., on the measurements of 941 pelvises and 629 full term children. The conclusions at which he arrives are such as might be expected in this matter and differ considerably from those of Captain Lane. The well-known fact that the average interspinous and intercrural measurements bear no relation to the length of the conjugate diameter is clearly shown, but the figures quoted lend no confirmation to the result obtained by Captain Lane—namely, that as the conjugate diameter increases in size the percentage of the interspinous to the intercrural diameter shows a regular successive diminution. The influence of an increase in the admixture of native blood is shown in the size of the pelvis, thus the Bengali pelvis is the smallest, the East Indian next in size, the Eurasian next, and the European largest of all, with a regular gradation of size in

proportion to the degree of admixture of the native element, such as might be expected. The relationship between the size of the child as gauged by its weight and the size of the pelvis as gauged by the conjugate diameter which Captain Lane believed he had demonstrated by his measurements is not borne out in the results obtained by Captain Leicester, although it is true that his figures show some tendency in the same direction. In a further series of measurements the latter observer has endeavoured to estimate the size and weight of the children of various pregnancies passing through pelves with conjugate diameters of the same length. These results seem to confirm the well-known fact that the children of different pregnancies, even with the same mother, may vary very markedly in size. An investigation of this kind is of value in serving to confirm, although only in a very rough way, the results which have been obtained by the majority of investigators. We do not think that there is much to be gained by an endeavour to distinguish between such small differences as one-eighth of an inch in attempting to measure the conjugate diameter through the abdomen, the method practised by Captain Leicester, and not much reliance can be placed upon any such series of figures, numerous as they are, until they have been confirmed by a much larger series in which the measurements have been taken not by one but by several observers and then averaged. Captain Leicester's paper will be of service if it helps to expose the fallacy, only too common amongst medical writers, of attempting to found general laws upon quite inadequate data.

A LONDON CROWD ON THE ICE.

ANYONE who watched the crowd of skaters upon the Round Pond in Kensington Gardens upon the afternoon of Sunday, Jan. 27th, until the time when those in authority decided to clear the ice will have readily understood why the two terrible accidents which the middle-aged will recall as having happened in the Kensington Gardens before the Round Pond was made shallow and in Regent's Park were fraught with such loss of life. The incident which immediately preceded the ordering of all skaters to leave the ice was similar to others which had taken place earlier and served to demonstrate the recklessness which accompanies inexperience of danger, for probably few of those present either desired immersion or stayed to consider whether the water was shallow or deep. Something happened to attract attention—presumably a skater knocked one of his fellows over, or possibly fell through a hole, or otherwise became a centre of attraction—and immediately from all parts of the broad sheet of ice skaters and sliders, grown-up men and women, and children flocked together to see what had occurred, so that within a few seconds there were gathered in a dense crowd round a spot which for all they knew had just proved unsafe for one, or possibly for a group of their fellows, two or three hundred persons. Skating had not been permitted until the ice was strong enough to stand a strain which, no doubt, the keepers of the garden knew from experience would be likely to be put upon it, but we are inclined to think that the crowd was one which would have acted in a similar fashion had the ice been swaying and bending in every direction, with ten feet of water beneath it. We are inclined to believe also that foolishly as any crowd may behave when a few individuals set the example, those trained to country pursuits would hardly have acted in the same way as those used to the comparative safety of the ordinary Londoner's amusements. Our readers should recommend parents to warn their children against such behaviour on future occasions, for even with a thaw setting in a thorough wetting in icy water may do more than spoil clothes, and in a case of wholesale immersion, such as was likely to follow the scene described, children might

easily have fallen under others and have been placed in serious danger. Ice accidents, like boating accidents, have fatal endings before those around have time to realise what is going on, and no one can take up a newspaper when skating has begun without perceiving that the parent who shrinks from denying his child a transitory pleasure may have to reproach himself ever afterwards for his want of prudence or firmness.

THE CHALFONT COLONY FOR EPILEPTICS.

IN the year 1894 the National Society for Employment of Epileptics established the Chalfont Colony. The accommodation was then limited to 18 colonists but it has since grown to be a small village with a population of 200 epileptics. Even with this increase of accommodation the society has to refuse admission to a very large number of eligible persons who would undoubtedly benefit by the treatment were it only possible to house them. Up to the present time adults alone have been received into the colony but if only funds are forthcoming villas are to be built for the reception of epileptic children. The treatment in colonies of this kind is far superior to that which is possible in hospital, for in addition to the necessary medical supervision the patients are taught trades and other ways of earning a livelihood whereby they may become useful members of society. England is still far behind other countries in realising the value of the "colony" system for the treatment of such diseases as epilepsy and certain forms of mental enfeeblement. Nevertheless, experience has taught that they are institutions worthy of the most liberal support and it is to be hoped that the present appeal for the Chalfont Colony will meet with the success which it undoubtedly deserves. We note that contributions are to be sent to the honorary treasurer, Mr. H. Hamilton Hoare, or the secretary, Mr. G. Penn Gaskell, at the offices of the society, Denison House, Vauxhall Bridge-road, London, S.W.

MEMORIAL TO DR. FINLAYSON.

A LARGELY attended meeting of the medical profession and others interested was held in the hall of the Faculty of Physicians and Surgeons, 242, St. Vincent-street, Glasgow, on Jan. 24th, to consider a proposal to perpetuate the memory of the late Dr. James Finlayson who for many years occupied a foremost position in the medical world of Scotland. In the absence of the President of the Faculty, Dr. W. G. Dun, honorary treasurer of the Faculty of Physicians and Surgeons, was called to the chair. Amongst those present were the Lord Provost, Mr. John Wordie, Sir Hector C. Cameron, Professor R. Stockman, Professor S. Gemmell, Dr. D. Yellowlees, Dr. Alexander Robertson, Dr. J. O. Renton, Mr. H. E. Clark, and Dr. A. Freeland Fergus. The Lord Provost proposed, and Dr. Yellowlees seconded, a motion to the effect that a fund should be raised to perpetuate in some suitable manner the memory of Dr. James Finlayson, and this was adopted unanimously. At this stage Dr. Freeland Fergus made a statement to the effect that at a meeting of a few of Dr. Finlayson's professional friends held some little time ago it had been resolved to recommend the founding of a lectureship. The scheme recommended was briefly as follows. That a sum of money should be gathered together and a trust formed and that the trustees, whenever the accumulated interest permitted, were to appoint a lecturer to give one or more lectures in the west of Scotland and that the lectureship should be called the Finlayson Memorial Lectureship. In this way it would be possible to bring original workers and men of distinction from other places to give the practitioners in the west of Scotland an account of their researches and work.

The lecturer would not be chosen from any particular school or locality; he might be from abroad, or from London, or from Cambridge, or from anywhere else, the essential requisite being that he was a man of first rank as an investigator and that he was in a position to say something of practical value to practitioners. After some discussion it was moved by Mr. Clark and seconded by Dr. Renton that the memorial to Dr. Finlayson should take the form of a lectureship. This was unanimously agreed to and by a large majority it was further agreed that the lectureship should be on medicine and cognate subjects. Thereafter the meeting resolved itself into a general committee to carry out the scheme and an executive committee was elected with Sir Hector Cameron, convener; Mr. Robert Gourlay, LL.D., honorary treasurer, 124, St. Vincent-street, Glasgow; and Dr. Alexander Duncan, Faculty of Physicians and Surgeons, Glasgow, and Dr. Freeland Fergus, 22, Blythswood-square, Glasgow, honorary secretaries.

OVERHEAD WIRES ON TRAMWAYS.

AN action was heard recently before Sir William Selfe at the Brompton county court in which a jury awarded £50 damages to a plaintiff who claimed to have received personal injury through the falling of an overhead wire when travelling on the top of a tramway car. A wire, which undoubtedly fell, did not, according to his version of the occurrence, touch him but fell across the brass rail which ran round the car and with which he was in contact. The dispute in the case arose from the defendants positively denying that the wire which fell could have been a live one and calling their engineer to give evidence to this effect, and from their ascribing certain physical conditions of the plaintiff to his smoking to excess, supporting their contention by medical evidence, whereas medical witnesses for the plaintiff deposed that his symptoms were attributable to the shock which he stated that he had received. The shock itself was declared by the defence to be imaginary so far as electricity was concerned, and to have been due to fright. Whether the jury were right or wrong in their finding in this particular instance it seems clear that a county court jury is not the proper tribunal to weigh conflicting evidence of a scientific character. Such a case as that described could only be dealt with satisfactorily by a judge with the help of a medical assessor.

INTERNATIONAL CONFERENCE OF RED CROSS SOCIETIES.

THE Eighth International Conference of Red Cross Societies will be held in London from June 10th to 14th next, inclusive. The international conferences take place every five years, the last having been held at St. Petersburg in 1902. All Red Cross societies established in countries the Governments of which are signatory to the Geneva Convention are invited to send delegates to the Conference and many have already signified their intention of being represented. Invitations to send official delegates have been forwarded through the Foreign Office to the Governments of the countries in question. The Conjoint Board of the Royal College of Physicians of London and the Royal College of Surgeons of England has placed the Examination Hall, Victoria Embankment, at the disposal of the Conference. Field-Marshal Earl Roberts, K.G., V.C., will act as president of the Conference, and the following reception committee has been formed for the purpose of arranging a suitable programme of social functions for the entertainment of the delegates during the period of the Conference:—The Duchess of Montrose, the Marchioness of Lansdowne, the Marchioness of Londonderry, Georgiana Countess of Dudley, Lady Warrag.

Lord Rothschild, Viscount Escher, Viscount Iveagh, Lord Burton, Sir Ernest Cassel, Sir Frederick Treves, and Mr. A. K. Loyd. Provided that a sufficient number of exhibits are entered an exhibition of appliances in connexion with Red Cross work will be held at the same time as the Conference. The "Empress Marie Féodorovna prizes" will be awarded by an international jury for the best inventions tending to lessen the sufferings of sick and wounded soldiers. There are three prizes which will be given out of a sum arising from the interest on an investment of 100,000 roubles, the total amount available for the three 1907 prizes being about £2000. Full particulars of these competitions will be forwarded on application. The business arrangements of the Conference are being made by a committee composed of Mr. J. Danvers Power (chairman), Sir Frederick Treves, and Sir Benjamin Franklin, and all communications should be addressed to the secretary, British Red Cross Society, 9, Victoria-street, London, S.W.

CEREBRO-SPINAL FEVER.

AN outbreak of cerebro-spinal fever has apparently occurred in Belfast. Up to the time when the information reached us there had been 29 cases and 17 of these had proved fatal. Four children in one family were among the victims. Of these one went to bed on Wednesday, Jan. 23rd, apparently perfectly well, but became ill the next morning, death occurring very rapidly. The second child was attacked a little later and also died within an extremely short period. The two other children were similarly affected and died two days afterwards; the short period of illness was remarkable. From the information that we have had at present the cases would seem to be of the "type foudroyante" of French authors; in this country sometimes known as the "malignant type." The bacteriology of the disease has not been absolutely decided but the majority of observers consider that the diplococcus intracellularis meningitidis of Weichselbaum is the pathogenic organism, although this observer himself, reviewing the whole subject in 1903, concluded that it cannot be with certainty asserted that all epidemics are due to the meningococcus, but that some of them may be due to the pneumococcus. The ordinary methods of propagation of the disease are unknown and it has not been traced to food or water-supply. Isolation of affected persons is, of course, essential, but further experience and investigation will be necessary before the exact etiology of cerebro-spinal fever can be stated.

SHAKESPEARE'S "GYNÆCOLOGY."

TO Germany has spread our custom of complimenting Shakespeare on the possession of various kinds of expert knowledge. Under the heading "Shakespeare's Gynäkologie," Herr Franz von Winckel of Munich has recently published in the *Sammlung Klinischer Vorträge* an exhaustive study of the great dramatist's references to woman, especially in her sexual relations. Shakespeare, he avers, was practically a gynæcologist, but the numerous passages quoted to prove this assertion are not at all convincing from the modern scientific point of view. Thus from a passage in Part I. of *Henry the Sixth* Herr von Winckel infers that Shakespeare meant his hearers to believe that the sex of an unborn baby can be foretold from the character of the mother. A variant of this idea is expressed by Macbeth when he bids his lady to bring forth boys only, since she is made of stuff too stern to be the mother of the gentler sex. Falstaff is held to be a forerunner of Schenck and, in a speech in the Second Part of *Henry the Fourth*, is supposed to foretell the influence of a given diet upon the sex of the embryo. A water-drinker will be the father of "wenches" only. To the effects of

tright in the mother upon the health of the unborn Shakespeare makes frequent reference, as also to longings during pregnancy and kindred topics. But all this does not prove the great dramatist to have been in any sense a gynaecological expert, or even particularly learned in the current knowledge in such matters of his day. It proves, if anything, that he knew just as much as his fellow-burgurers of Stratford-on-Avon, who were doubtless well versed in such chap-book knowledge as is to be derived from the still popular pseudo-Aristotle's "Master-Piece." Great poets such as Shakespeare do not deal in paradox or specialism; they rather voice popular knowledge, superstitions, and errors in a melodious manner.

THE FOURTEENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

THE preparations for the Fourteenth International Congress of Hygiene and Demography, which is to be held in Berlin from Sept. 23rd to the 29th, are well advanced. The subjects for discussion in the different sections have been definitely fixed and the openers of the discussion have been selected and invited to undertake the office. Their selection has been made in such a manner that the different questions can be treated from a wide point of view. The greater part of the openers of discussion of German nationality and a great many of those of foreign nationality have already accepted the invitations. All papers and other information referring to the congress can be obtained at the office of the Congress, Berlin, W, 9, Eichhornstrasse. The Secretary-General of the Congress is Dr. Nietner.

CLIFFORD v. TIMMS.

ON Jan. 26th Mr. Justice Warrington gave judgment in the above-mentioned case. The plaintiff and defendant had entered into a partnership as dentists under an agreement that if either partner should be guilty of professional misconduct the other partner should be at liberty to determine the partnership. The plaintiff's name was recently removed from the Dentists Register for infamous conduct in a professional respect and the defendant thereupon gave the plaintiff notice to terminate the partnership. The plaintiff now claimed a declaration that the notice was invalid and an injunction to restrain the defendant from acting upon it. Mr. Justice Warrington granted the plaintiff both declaration and injunction. This judgment being of great importance we shall deal with the matter at greater length in a future issue.

MEDICAL MEN AND SECRET COMMISSIONS.

IN a recent issue of the *Medical Times and Hospital Gazette* there is an article entitled "Doctors and Secret Commissions." In the course of this article we find these words: "An optician jeweller and silversmith stated that recently a man of scientific eminence in Scotland received very large commissions for recommending a certain make of microscope. It is an open secret that hospital doctors receive commissions from makers of surgical instruments." Thus it would appear that on the authority of an optician a statement has been made that hospital doctors receive commissions from surgical instrument makers. We draw attention to this statement because it has appeared in the public press several times within the last few years and we are still without confirmation of it. We have received a letter from one well-known firm of instrument makers, with reference to the article in our contemporary, in which the writer says that he "during an experience of just over 40 years has never met with a single instance of anything of the kind mentioned, and it would appear a curious circumstance that an optician should know more about our

trade than one actually engaged in it. I think that this unmerited aspersion on the honour of hospital surgeons should be refuted in your journal, and I think you may rely upon the statement which I offer." Refutation of vague accusations is always a difficult thing to compass and we thank our correspondent for his forcible advocacy of professional rectitude.

THE WINTER EXHIBITION AT BURLINGTON HOUSE

THE thirty-eighth winter exhibition of the Royal Academy of Art was opened to the public at Burlington House on Jan. 7th. The exhibition is of great interest and comprises pictures by early Flemish and Italian Masters, many fine examples of the Dutch School, and various paintings by deceased British artists. To come to two pictures which have a more purely medical interest, No. 64, by Teniers, is a wonderfully painted little picture entitled "The Quack Doctor." He is represented standing on a bench on which are various objects connected with his trade. He is holding up a bottle in his right hand which presumably contains some nostrum. No audience is in the picture but he is evidently haranguing a crowd. Another picture is a very finely painted portrait of Dr. William Pearce of Bath, by Gainsborough. Gainsborough, as is well known, used to go to Bath for his health and lived in the Clous. Pearce was an intimate friend of the artist and also of Miss Burr, the lady who became Mrs. Gainsborough. Contrary to what we believe is the usual custom for professional men in the eighteenth century, Dr. Pearce is habited in light-blue coat with lace ruffles. Among the other pictures which deserve special attention are No. 91, the well-known portrait of Miss Linley, by Gainsborough; No. 93, the magnificent portrait of Mrs. Lee Acton (Mr. Acton's second wife), by Romney; and No. 98, a portrait of Mr. Acton's first wife, also by Romney. An interesting picture is No. 52, entitled "A Picture Gallery," by Haecht. No. 113, "Burning of the Houses of Parliament," is a magnificent specimen of Turner's later manner; and of other pictures by Turner Sir Donald Currie lends the 25 little vignettes in water-colour to illustrate Campbell's poems. In the water-colour room are also shown sundry studies by Lord Leighton. Altogether the exhibition is one of extreme interest.

A MEETING of the Royal Sanitary Institute will be held in Stafford on Feb. 16th. A visit will be made to the Hanley sewage works at 11 A.M. and at 3 P.M. Dr. George Reid, county medical officer of health of Staffordshire, will open a discussion on the question, To What Extent must Authorities Purify Sewage? Those attending and wishing to be present at the lunch must notify the secretary of the institute not later than Feb. 9th.

THE Lettsomian lectures of the Medical Society of London for 1907 will be delivered by Dr. Charles E. Beever. Lecture I. is to be delivered on Feb. 4th, Lecture II. on Feb. 18th, and Lecture III. on March 4th. The hour of delivery is 9 P.M., and the subject of the lectures is the Diagnosis and Localisation of Cerebral Tumours.

THE King has given to Dr. Oliver Avison His Majesty's Royal licence and authority that he may accept and wear the Insignia of the Fourth Class of the Order of the Tai-Ken, conferred upon him by His Majesty the Emperor of Korea in recognition of valuable services rendered by him. Dr. Oliver Avison is an M.D. of Toronto.

At the meeting of the Incorporated Society of Medical Officers of Health on Feb. 8th there will be a discussion upon a paper to be read by Mr. H. O. Pilkington, medical officer

of health of Preston, entitled "The Reduction of Infantile Mortality without Municipal Milk Depôts."

THE annual meeting of the After-care Association will be held at the Apothecaries' Hall, Water-lane, E.C., on Tuesday, Feb. 5th, at 3 P.M. The chair will be taken by Mr. E. Parker Young, the Worshipful Master of the Society of Apothecaries.

THE Department of Public Health of Queensland reports that for the week ending Saturday, Dec. 22nd, 1906, 1 fatal case of bubonic plague occurred. The patient was a male, aged 21 years, who was employed as a hairdresser.

Mr. Henry T. Butlin, D.C.L., consulting surgeon to St. Bartholomew's Hospital, will deliver the Hunterian Oration at the Royal College of Surgeons of England on Thursday, Feb. 14th, at 4 P.M.

THE RÔLE OF THE BLOOD PLASMA IN DISEASE.

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I.

THE human organism is made up of a vast congeries of cells, and its behaviour from the beginning to the end of life depends upon the inherent properties of these cells, and upon the outside influences which are brought to bear upon them. What are these influences? What, in other words, are the agencies which go to make up the individual cell-environments? They may be considered under two headings—the plasmic and the non-plasmic.

THE PLASMIC ENVIRONMENT OF THE CELLS.

All the cells of the body dwell, as did their remote unicellular ancestors, in a fluid saline medium.¹ This fluid—the tissue plasma or "lymph"—is derived from the blood, and, though it approximates in general character to blood plasma, its composition is peculiar for each kind of tissue, both because the capillaries of the different tissues yield different kinds of lymph and because every species of cell impresses its plasmic environment in a peculiar way.

According to Ludwig, whose views are forcibly supported by Starling, the lymph filters mechanically through the capillary wall, the quantity and quality of the filtrate being regulated by the amount of capillary blood pressure and the degree of capillary permeability. The greater the latter the more does the filtrating lymph approximate in composition to the blood plasma. Thus the highly permeable capillaries of the liver yield a lymph containing 8 per cent. of proteids and differing but little from the blood plasma, while the comparatively impermeable capillaries of the lower extremities exude a watery lymph containing no more than 4 per cent. of proteids.² Heldenheim, on the other hand, holds that the capillaries actually secrete the lymph by vital activity. What makes this view seem *a priori* probable is the consideration that the quality of lymph yielded by the capillaries could in this way be regulated with much greater nicety than by mere mechanical filtration; and, seeing that every species of cell has its own special lymph requirements, it surely would be of great advantage if each capillary were endowed with the power of secreting from the blood plasma just those ingredients, and those only, which are needed by the neighbouring cells, for in this case the latter would not need to

exercise any selection and their work would be correspondingly simplified.

The view that the quality of the exuding lymph is determined solely by mechanical means compels us to assume that the tissues are being constantly furnished with substances that they do not require, a conclusion which greatly complicates the problem of nutrition. Let me give a simple illustration. Certain substances are formed in the body for the purpose of influencing a limited group of cells. Such a one is *secretin*, the function of which is to excite the pancreas, and possibly also the liver, to specific forms of activity. Formed as it is in the duodenum it has, in order to reach these organs, to traverse the portal vessels, the pulmonary circuit, and the aorta, whence it is *dispersed throughout all the systemic capillaries*. Are we to suppose that this substance passes out of all these capillaries indifferently and is supplied in equal quantity to all the cells of the body—nervous, muscular, glandular, and the rest—when it is needed only by a limited number of them? It seems much more in accordance with the fitness of things that the capillaries of the pancreas and liver should exude it more abundantly than other capillaries. Is it possible that the pancreatic and hepatic cells attract secretin by chemiotaxis?³ Be this as it may, whatever the mechanism, or mechanisms, by which the passage of lymph through the capillary walls is regulated, whether by secretion, filtration, or chemiotaxis, singly or combined, one thing is certain: that mechanism, or those mechanisms, are not ideally perfect. Were the capillaries and surrounding cells endowed with perfect discrimination, so that only necessary ingredients were allowed to escape from the blood, it is clear that, except in the case of the excretory glands, no blood poison would ever be permitted to taint the extravascular plasma. This, as we know, is very far from being the case. A little thought, indeed, will show that the capillaries all over the body need to be permeable to poisons; for how otherwise could poisons engendered within the tissues be eliminated?

While, then, we must believe that discriminating agencies are at work regulating—imperfectly though it be—the quality of the lymph which the blood yields to the different tissues, we are probably right in assuming a tendency for all the constituents of the blood plasma, good, bad, and indifferent, to pass through the capillary walls, and in regarding the lymph of the body at large as having much the same composition as the blood plasma. We may, in fact, regard the two plasmas as kindred fluids, having their merits and defects in common, and we must assume that the slightest change in the one is reflected in the other, normal blood plasma thus meaning normal tissue plasma, abnormal blood plasma, abnormal tissue plasma, and *vice versa*. Whenever I use the unqualified term "plasma" it must be taken to mean either the blood or tissue plasma indifferently.

LOCAL PECULIARITIES IN PLASMA.

Though in general the plasma, and consequently the plasmic environment for individual cells, is much the same throughout the organism, yet local differences in it may exist sufficient to determine the occurrence of disease in some regions more than others. Apart from the fact that each variety of cell affects its environing plasma specifically, and apart from the fact that the bacterial invasion of a tissue causes a concentration of bacterial poisons in that tissue, local differences of plasmic constitution may occur as the result of local differences of circulation. It seems likely that a careful study of this subject would throw considerable light on the distribution of disease within the organism. Thus the blood-supply is more abundant in some tissues than others, and this tends to produce local variations in the character of the tissue plasma and in this way to determine the site of disease in particular areas. Those muscles, for example, which are most important to life, such as the heart and diaphragm, have a more abundant supply than other less important ones, and Ehrlich has shown that the distribution of vital staining is related to the degree of local blood-supply; thus in certain experiments with mice he found that the parts surrounding the central tendon of the diaphragm were more intensely stained than the peripheral portions, and he suggests that the distribution of paralysis in lead and arsenic poisoning may be explained on these lines.⁴ Similarly parts in which

¹ It is true that such cells as the superficial cells of the epidermis are not entirely surrounded by fluid, but these may be regarded as practically dead. All other surface cells, such as those of the serous and mucous membranes and of the cornea, have their free surfaces constantly bathed in fluid. Indeed, it may be said that no animal cell can maintain its vitality for any length of time unless entirely environed by fluid.

² "The cells of the capillary wall do not secrete tissue fluid. There is no evidence that they play any but a passive part in the formation and regulation of tissue fluid." (A. P. Reddard, *Some Recent Discoveries in Physiology*, edited by Leonard Hill, p. 617.) He holds that the tissue plasma is propelled out from the capillaries in obedience to osmotic, diffusive, and filtration.

³ In this connexion I may refer to the following quotation from A. P. Reddard. It seems likely that the living cells "institute the passage of nutriment from the blood to the tissue fluid, just as much as from the tissue fluid to themselves."—*Op. cit.*, p. 616.

⁴ *Studies in Immunity*, pp. 421 et seq.

the plasma is apt to stagnate are prone to disease. Sir William Gowers has argued that the arrangement of the veins opening into the superior longitudinal sinus is such as to predispose to venous stasis and consequent softening in this region from interruption of the intercellular plasmic flow; while Marie and Guillaumin have attributed the involvement of the posterior column of the cord in tabes to certain local peculiarities of the lymph circulation.⁵ Again, Sir Lauder Brunton suggests, and the suggestion is well worth consideration, that the absence, in subjects of high arterial tension, of the normal free expansion and contraction of the arteries may, by interfering with the due flow of lymph within their walls, predispose them to degeneration; and certainly the absence of rhythmic contractions in a muscle, and the consequent stagnation of plasma in its substance lead to its ultimate disorganisation.

There is possibly a further way by which local peculiarities in plasmic composition may be induced. Is it possible that when a parenchymatous cell (muscle, gland, or nerve cell) attracts a poison from the plasma, the damaged cell by the faulty metabolism thus ensuing affects its circumstant plasma injuriously, in such wise, e.g., as to irritate the local connective tissue? Can we in this way explain the otherwise puzzling fact that in genuine parenchymatous degenerations of toxic origin, the connective tissue in the neighbourhood of the affected parenchyma shows signs of irritation, while in other regions that tissue wholly escapes injury? Thus, in tabes dorsalis the pia mater over the posterior columns is thickened, and in granular kidney there is considerable induration of the renal capsules. When the poison causing the parenchymatous degeneration circulates freely all over the body, how comes it that, instead of causing a generalised fibrosis, it manifests a special tendency to set up fibrosis in the neighbourhood of those parenchymatous cells which specially attract it?

THE NON-PLASMIC ENVIRONMENT OF THE CELLS.

In the case of some cells, such as the blood corpuscles and connective tissue cells, the plasma constitutes the entire environment, but besides these plasmic influences most of the fixed cells of the body come under the direct influence of the nervous system; the human organism may, in fact, be regarded as consisting essentially of a nervous system having attached to the extremities of its efferent nerves—like so many leaves to the twigs of a tree—myriads of muscle and gland cells, all of which, in common with those of the nervous system itself, are held together by a connective-tissue framework, the whole being permeated by a complex vascular system containing blood and lymph. Thus it happens that nervous impulses are constantly flowing into the muscle and gland cells and influencing their activities; indeed, the very vitality of these cells—certainly of those of the voluntary muscular system, which constitutes no less than one half of the entire body weight—is dependent upon this constant inflow of nervous impulses, for when their motor nerve connexions are severed they disintegrate and die. And not only are muscle and gland cells directly influenced in this way by the nervous system, but contiguous nerve cells influence one another through their dendrites and axites, and in this way nerve impulses are enabled ceaselessly to reverberate throughout the entire nervous system.

In the case of the peripheral sensory neurons the non-plasmic environment embraces also those external agencies which operate upon the terminal expanses distributed to the organs of special sense, the integument, and the digestive tract. Such are the atmospheric and ether vibrations by which are produced the sensations of sound, heat, and light; such also are the grosser contacts which give rise to the sensations of touch, pain, and repletion. It is essentially these agencies which maintain the nervous system in that state of vibration by which it is agitated from the beginning to the end of life, and it is essentially through them, too, that a knowledge of the external world is gained and that the mental personality is gradually built up.

THE SOURCE OF THE BLOOD PLASMA.

The bulk of the blood plasma is made up of nutrient materials dissolved in water. These are derived from the food, and consist of the final products of digestion as poured by the hepatic veins and the thoracic duct into the general circulation. The ingested food first comes under the influence of the digestive juices, whereby the

proteids, saccharides, and fats are disintegrated; it then suffers a further change in its passage through the gastrointestinal epithelium; thereafter the whole of it, with the exception of a certain proportion of the fat (which travels by way of the lacteals), comes under the influence of the liver—which, putting the final touch upon the process of digestion, delivers into the general blood-stream fluid nutriment of a kind suitable for the nutrition of the tissues, be they the lowly elements of connective tissue or the more highly endowed cells of muscle, gland, or nerve.

We know very little concerning the changes which the liver effects in the plasma of the portal blood, but common sense, often more convincing than physiological experiment, points unmistakably to the conclusion that in the laboratory of this great gland the portal plasma undergoes its final preparation for entrance into the general blood-stream. Why, otherwise, should almost all the absorbed food be driven through this, the largest gland in the body, containing as it does much more glandular tissue than the entire digestive canal? Why, I say, should this occur, unless it be for the purpose indicated?

We may, I think, be sure that this digestive function is much the largest function, so to say, of the liver, for the glycogenic function, concerning which there is still great difference of opinion, may be regarded as only a part of the process of digestion (using this term in a comprehensive sense). The urea function, important though it be, might be carried on by a much smaller organ, seeing that its total daily output is less than a solitary ounce, and the biliary function again, by an organ no larger than the salivary glands, which yield as much saliva as the liver yields bile. In brief, we may safely conclude that at least three-fourths of the work done by the liver consists in preparing the portal plasma for entrance into the general blood-stream, a function which may be spoken of as "hepatic digestion," as distinguished from the "primary digestion," which takes place in the alimentary canal.

I have said that the bulk of the blood plasma consists of an aqueous solution of nutrient materials. But it may be asked, Why should it not contain as much waste as nutrient matter, seeing that in an individual whose weight remains stationary the daily quantities of each passing into the blood must be equal? In the case of the lymph environing the individual cells of the tissues it is probable that the two are on an average equal; but there can be little doubt that in health the blood contains a considerable excess of nutrient over waste material, and this must be because of the speedy elimination of the latter. How rapidly waste products are normally eliminated from the blood is shown by the rapid subsidence of dyspnoea in the well-trained athlete after, say, rowing the Henley mile.

But though the bulk of the solids of the blood plasma consists of nutrient materials elaborated by the digestive organs it would be a great mistake to think of the plasma as formed by any special organs or tissues, for in point of fact it is the product of the united activities of the tissues in general. Not a cell of the body but leaves its impress on this remarkable fluid, and that not merely in the sense of adding useless waste matter to it, but in the sense of providing it with constituents essential to the normal functioning of the tissues. Among the numerous substances thus produced are hormones, ferments, and antibodies.

The hormones are known to be produced by many different tissues, including the thyroid, thymus, adrenal, gastric, duodenal, pancreatic, ovarian, and testicular glands; and I shall presently argue that hormones are produced by all the tissues; certainly carbonic acid, a potent excitant of the respiratory centre, is. It is also probable that the plasmic ferments, which assuredly subserve some useful function, are produced outside the vascular system.

The fact that the blood plasma is elaborated by the tissues in general, and not by any special organs or tissues, is further shown by the phenomenon of antibody formation. We speak of the blood as forming these antibodies—antitoxins, antiferments, opsonins, bacteriolysins, precipitins, coagulins, and the rest—as though their elaboration were the function of the plasma itself; but the fact is that the power, the well-nigh limitless power, of producing antibodies belongs, not to the lifeless plasma, but to the living cells; and when we speak of the "memory of the blood" mean, not the memory of the lifeless plasma—a thing of the moment, undergoing ceaseless change—but of the tissues from which the antibodies are derived. What

⁵ See Dr. Ferrier's First Lumsden Lecture on *Tabes Dorsalis*, 1906.

these tissues are we do not certainly know, but it is probable that they include all the tissues of the body.

Inasmuch as the blood plasma is produced by all the cells in the body it follows that each single cell contributes to the plasmic environment of every other cell, and seeing that the activity of a cell is largely controlled by its plasmic environment it follows that all the remaining cells of the organism play some part in determining the activities of any particular cell. Observe that throughout life there take place a ceaseless action and reaction between the cells and the plasma, for, on the one hand, the activities of the cells determine the composition of the plasma, and, on the other hand, the composition of the plasma determines the activities of the cells.

THE COMPLEX CHEMICAL COMPOSITION OF THE BLOOD PLASMA.

These considerations regarding the source of the blood plasma show how subtly complex its chemical composition is. Indeed, as regards complexity of composition no fluid in nature can compare with plasma—be it that of the blood or the tissues. In thinking of the plasmic environment of individual cells let us ever bear this fact in mind. *Every active cell in the body is environed by a plasma containing a multitude of different chemical substances*, many of them of a highly complex constitution. These plasmic constituents may be grouped as follows: food-stuffs and free oxygen, ferments, hormones, anti-bodies, and excreta; and we shall best appreciate the highly complex nature of the plasma by inquiring—briefly though it must be—into the chemical composition of these various constituents. Such an inquiry brings into striking relief the meagreness of our knowledge regarding them. Most of them, indeed, defy the most delicate tests of the chemist.

Food-stuffs.—Even in regard to the nutritive constituents of the plasma—proteids, fats, saccharides, and salts—we have still much to learn. We have, it is true, a fairly accurate knowledge of the salts of the plasma, and we can estimate the percentage of serum albumin and serum globulin in this fluid, but our knowledge of the plasmic proteids is very incomplete. Our chemical knowledge of the plasmic fats and saccharides is equally limited; our ignorance of the former is shown by such a consideration as the following: when by means of exercise the weight of the body is reduced the stored fat is dissolved and carried to the muscles, there to be burnt off, and yet we are entirely ignorant as to the form in which it is conveyed.

Ferments.—Concerning the chemical composition of the ferments of the blood we know next to nothing; we are only able to judge of their presence by their power to induce fermentation.

Hormones.—The like is true of the numerous hormones which exist in the blood: we are all but entirely ignorant of their chemical composition. We know the composition of carbonic acid and of adrenalin, which can be now actually synthesised in the laboratory, but the analysis of the remaining hormones still baffles the chemist. To each of them we may apply Professor E. H. Starling's remarks concerning secretin: "We have no clue as to its chemical character." What chemist can detect the differences in respect of hormones between the blood of patients suffering respectively from exophthalmic goitre, myxedema, and Addison's disease, even though the hormonal defects in each of these affections may be such as profoundly to affect the metabolism of every cell in the body, to alter the individual in his entire being, and ultimately to compass his death? Where, again, is the chemist who can discover the hormonal differences, now known to exist, in the plasma of the menstruating and the non-menstruating, or the pregnant and the non-pregnant, woman?

We shall do well to reflect on this subject. The plasma contains numbers of these subtle essences, numbers of these mysterious messengers the function of which it is to incite the tissues to special forms of activity, and we are beginning to see how extensive is the rôle they play in health and disease. I venture to think that we shall have greatly to widen our conception of these remarkable substances, and that it will ultimately be found, as I suggested some years ago,¹ that many of the

products of cell activity, which we are wont to regard as merely useless or even harmful waste, serve a useful purpose. One of these purposes may be to stimulate the nervous system. It has long been known that the blood may from time to time contain waste products which depress nervous activity, but the possibility of certain waste products having normally an opposite stimulant effect has been lost sight of. That a waste product may act as a hormone is shown by the action of carbonic acid on the respiratory centre, which, as Starling suggests, may have evolved a special sensibility to this substance. This physiologist, indeed, hints that all the hormones may have been in the first instance waste products pure and simple. "We may, perhaps, assume that the more specialised messengers were at first accidental by-products of the selfish activity of the organ producing them, the first step in the development of a correlation being the acquisition of a sensibility to the substance in question by some distant organ."² It must not be forgotten that the waste products which are eliminated by the excretory glands have a hormonal action on those glands. In this sense such a substance as urea is hormonal as regards the kidneys, and by stimulating the renal epithelium to excretion may exercise a beneficial influence on it. Nay, we may go even further than this: the question may, I think, legitimately be raised whether the presence in the plasma in non-toxic proportions of cell excreta may not be beneficial to their vital activities. May it not be argued that cells which for myriads of generations have been bathed in plasma containing a large number of excretory substances, may have become so completely adapted to them that the complete absence of those substances from the plasma would be detrimental to cell activity? This view is rendered all the more probable from the fact that the tissues can to some extent adapt themselves to a decidedly toxic environment, so much so that a sudden removal of the toxic factor tends to a temporary lowering of function, as happens, for example, when the habitual opium-eater suddenly leaves off taking the drug.

The antibodies.—Though we generally attribute the presence of antibodies in the plasma to morbid conditions it is probable that they are also formed physiologically. In any case they are present in healthy blood, for after recovery from an infectious disease they persist, it may be for a long time, in the plasma. Concerning the chemical nature of these antibodies we know little or nothing.

Excreta.—Some may be inclined to think that, if our knowledge of the other constituents of the plasma is meagre, at least it is fairly complete concerning the excreta. Yet this is not the case. Two or three of these substances, such as carbonic acid, urea, and uric acid, have been satisfactorily analysed; but these are but a few among many. Numerous substances, concerning which we have no chemical knowledge whatever, are being continually eliminated by the lungs, skin, kidneys, and bowels.

Summary.—We must once for all rid ourselves of the notion that plasma consists simply of a few nutrient ingredients and useless excreta dissolved in water. We must, instead, think of it as an aqueous solution of an almost endless variety of substances, many of them possessing a highly complex composition and most of them defying the most careful and delicate methods of chemical research. And let us ever strive to keep clearly before us the fact that it is in a fluid of this kind that, from the beginning to the end of its career, every cell in the body lies bathed, and through it is subjected to an infinite variety of influences.

VARIABILITY OF NORMAL PLASMA.

The foregoing considerations by no means exhaust the subject of plasmic complexity. The composition of plasma differs normally in different races, in different individuals of the same race, and even in the same individual at different times. Each race—Caucasian, Mongol, and Negro—as well as every subrace of these races, every family—nay, every individual—has certain plasmic characteristics. No two humans, in fact, have exactly the same kind of plasma. Nor is this surprising, considering the exceedingly complex constitution of this fluid. These subtle individual differences do not, it is needless to say, admit of chemical demonstration. They can, however, be proved in a very simple way. There escape from the lungs, skin, and kidneys of every individual, numerous odiferous substances, which, coming as they do from the blood plasma, enable individual differences in plasmic composition to be detected during life by the sense of smell. We ourselves can detect some of the

¹ The convenient term "hormone" (from ὁρμή, I excite or arouse) has been suggested by Professor Starling, whose remarkable work with secretin on the subject of secretin has opened a new chapter in physiology.

² The Cravings for Stimulants, THE LANCET, Oct. 21st, 1903, p. 1001.

more decided of these differences, as those between the negro and the white man, and sometimes even between individuals of the same race; but certain animals, like the dog, have no difficulty in recognising the individual smell of anyone after quite a short acquaintance. A man's physical personality shows, indeed, as characteristically in his emanations and excretions as in his features and the conformation of his body.

And not only has every individual a plasmic constitution peculiar to himself, but one also which, as I have said, varies physiologically from time to time. Thus the plasma changes with every epoch of life, steadily altering through infancy, childhood, adolescence, maturity, and old age; and these changes determine, as we shall see, the functional and structural peculiarities of these successive epochs. Among other circumstances the composition of the plasma also varies with the season of the year, the time of day, with locality, climate, the nature and amount of food and drink consumed, and the amount of exercise taken. It is also considerably influenced by menstruation, pregnancy, and lactation. Just as individual plasmic differences can be detected by the sense of smell, so also can the differences met with in the one individual at different times, for these are all accompanied by characteristic emanations. We ourselves can sometimes detect these differences, though not generally until the limits of health have been passed.

VARIABILITY IN NORMAL METABOLISM.

Seeing that no two plasmas are the same in any two individuals, and that the metabolism of the cell must vary with the nature of its plasmic environment, it follows that no two individuals metabolise in exactly the same way. Seeing again that the plasma of any one individual varies considerably even in perfect health, it follows that his metabolism is normally subject to variation. In other words, the normal metabolism of man varies a billion-fold—a fact ever to be kept in mind. While recognising a fundamental plasmic and metabolic likeness between all, let us not forget these differences between individuals, and in the same individual at different times. Some of these metabolic differences are sufficiently obtrusive to be easily recognisable. Thus, some incline to fatness, others to leanness; some perspire readily, others with great difficulty; some are energetic, others lymphatic, and so on.

IMPORTANCE OF THE GLAND CELLS IN DETERMINING PLASMIC COMPOSITION AND METABOLISM.

The gland cells take precedence of all others in the elaboration of the plasma and in maintaining it in the normal condition, and consequently it is they more than any other cells which determine the character of the general metabolism—which strike, as it were, the metabolic note of the individual. It is they which elaborate the nutrient constituents of the plasma; it is they which furnish this fluid with all the recognised hormones (with the single exception of carbon dioxide); and they it is which purge the plasma of useless or harmful material. It may be, as I have suggested, that other cell types—e.g., muscle and nerve cells—yield the plasma substances which play a useful part in the economy; but even so they must be far inferior to the gland cells in their influence on the composition of this fluid. We must, therefore, assume that individual differences in the composition of the plasma, and in metabolism, depend chiefly upon differences in the vital activities of the glandular tissues. We cannot doubt that different individuals differ considerably in this latter respect, that marked individual differences obtain in the capacity of the gland cells to form such substances as pepsinogen and adrenalin, and that in some the gland cells elaborate substances different in character from those yielded by the corresponding gland cells in others. Doubtless similar differences obtain in regard to the biochemical activities of muscle and nerve cells, but one can hardly doubt that such differences are much less marked than in the case of the gland cells. One would expect the nature of the metabolism of nerve and muscle to be much the same in every one. While, however, the gland cells take precedence of all other cells in their influence on the composition of the plasma, and thus on the nature of metabolism, it must not be forgotten that the nervous system profoundly influences both the one and the other, not only through its direct connexion with the muscle and gland cells but indirectly through its control of the plasmic circulation.

MORBID PLASMA.

It is scarcely necessary to say that there is no sharp

line between normal and abnormal plasma; the one shades off imperceptibly into the other. There is, indeed, no such thing as an ideally normal plasma, for not only does the plasma vary, as we have just seen, for each individual, but for any given individual there are many grades of perfection—i.e., conditions of plasma consistent with what would generally be regarded as health.

It is not possible to deal adequately here with this enormous subject, concerning which our whole knowledge is but the veriest fraction—the merest fringe—of what is to be known. It must suffice to indicate some of the ways in which the plasma may be defective. The plasma may be faulty in respect of any of its normal constituents. It may, for example, contain too little or too much albumin, sugar, or fat, or these may exist in abnormal forms. Francis Hare contends with much force that an accumulation of carbonaceous material in the blood, a condition he terms *hyperpyramia*, is productive of many morbid results.¹ Or, again, there may be an excess, or deficiency, or perversion of the hormones or ferments normally present in the blood. Or, once more, there may be an accumulation of normal waste products. A second class of plasmic defects results from faulty metabolism, in consequence of which the plasma is poisoned by substances which do not properly belong to it. There are doubtless many such, though we as yet know very little about them. Such are *oboline* (found in the cerebro-spinal fluid of general paralytics) and its derivative *neurine*, also certain poisons met with in *uræmia* and *diabetic coma*.

The *toxæmia* of indigestion, or “*indigestion toxæmia*,” as we may conveniently term it, though it may often be largely due to bacterial poisons, results in the main from the absorption of the products of digestion—from what may be termed “*digestive metabolism*”—the substances thus formed being strictly *autogenetic*, which is not the case with bacterial poisons. Even in normal digestion albumoses, peptones, and other poisonous substances are abundantly formed, but these are either neutralised or are prevented from entering the blood stream as such by the gastro-intestinal epithelium and the liver. In indigestion such poisons may be formed in excess, and may successfully rush the two lines of defence and so contaminate the systemic plasma; and it is possible that weakness in these defences—e.g., from enteritis or hepatic disturbance—may have the same effect.

When we consider the infinite complexity of the digestive process in stomach, liver, and bowel, it is obvious that the opportunities for defective digestion are immense. And be it observed that there are innumerable different kinds of digestion—that no two individuals digest in the same way, that each individual digests differently at different times, that perfect digestion is an ideal seldom, if ever, attained; and that within the strict limits of what would by most be regarded as normal digestion there are innumerable grades of perfection, just as beyond those limits there are grades innumerable of imperfection. In an ideally perfect digestion the digestive products are delivered by the hepatic veins and the thoracic duct into the systemic blood stream, in the form most conducive to the normal metabolism of the tissues, and a little thought will convince the reader that there are myriads of ways in which this digestive output may show defect.

Last, but not least, the plasma may be contaminated by extraneous poisons—i.e., poisons either introduced as such from without (e.g., alcohol, nicotine, lead, tainted food) or formed within the body by bacterial agency. These bacterial poisons, which play so large and disastrous a part in disease, are yielded either by the bacteria themselves, or generated by a process of digestion which the bacteria set up in the plasmic proteids, in consequence of which albumoses, peptones, and kindred substances are produced.

Having regard then to the many individual respects in which the plasma may be faulty, and to the many different ways in which these various defects may be combined, it is no exaggeration to say that the varieties of defective plasma are, not many, but infinite.

Every disease, at least every general disease, is as it were mirrored in the plasma, though as yet we but rarely catch the reflection; but who can doubt that an all-wise physician might with very truth exclaim, “Show me the patient's plasma and I will tell you his disease.” And yet how little we know of the pathology of this subtly complex fluid—the arcanum of many pathological secrets, the repository of so many therapeutic indications. I have before me several

¹ Francis Hare, M.D.: *The Food Factor in Disease*.

be thoroughly boiled before being eaten; and (4) "untaugliches" flesh, that which must not be used for human food. The butcher is permitted to remove meat stamped as "tauglich," or quite healthy, to his shop and sell it freely to the public; all flesh bearing any other stamp must remain in the slaughter-house, the Berlin municipal officials being responsible for its further treatment and disposal. "Bedingt taugliches," or slightly diseased meat, is sterilised on the premises in large boilers and sold along with "minderwertiges," or poor meat, the former in its cooked and the latter in the raw condition, in an institution known as a "Freibank," which is attached to the slaughter-house. Such flesh is bought by the poorer classes, who come to the abattoir in order to obtain it.

Inspection.—All inspectors must be duly qualified veterinarians, having been specially trained in meat-inspection and having passed an examination on that subject as a test of their proficiency. They are divided into two classes, junior and senior, the former being much more numerous than the latter. It is the duty of the junior to go over and carefully to inspect every animal, in order to discover the presence or absence of disease. If the animals prove healthy then their carcasses and organs are stamped as "tauglich" or wholesome, and they may be removed by the butcher to whom they belong without further let or hindrance. Should disease of such a nature or degree be present as to prevent the junior from stamping them as "tauglich" then he pastes a label on their carcasses, bearing the words "preliminarily rejected and condemned, Dr. —, municipal veterinarian." The senior inspectors do not take part in the routine examination of every animal but confine their attention to those that are preliminarily rejected and condemned in order to determine whether they are diseased, and, if so, to what extent.

Mode of inspection followed by the junior inspector.—Slaughter has generally been in progress for some time before the junior comes on the scene. The slaughtered animals hang, cleaned and dressed, and cut into two through the vertebral column. The lungs, the heart, and the liver remain hanging to the carcass to which they belong by the trachea, which has not been entirely detached from the neck, so that the inspector may satisfy himself that they really belong to the animal in question. The heads, with the tongues attached, hang on hooks on the wall and all the organs belonging to each animal must be retained lest they should require to undergo examination or to be destroyed should the animal be condemned. A careful inspection of the following organs and parts is made. 1. The head. A general survey of the outer aspect (actinomycomata), lips, gums, and mouth (foot and mouth disease). The tongue is palpated (foot and mouth disease and actinomycosis); the latter is frequently found, generally in the form of a localised focus, which is merely cut out by the inspector, the rest of the organ being allowed to go free). The external and internal masticatory muscles are incised in such a manner as to expose their lymphatic glands which lie in that neighbourhood (cysticercus). The submaxillary, retro-pharyngeal, upper cervical and laryngeal glands are incised (tuberculosis, actinomycosis). 2. "Sling" (consisting of lungs, liver, and heart, all attached together, as removed from the animal). The lungs are carefully palpated and incised in a transverse direction (tubercle, inflammations, aspirations of blood, or stomach contents). The mediastinal and bronchial glands are incised (tubercle). The liver is inspected, palpated, and incised, along with the portal glands (degenerations, inflammations, tumours, tuberculosis, liver-flukes). The heart is incised in such a manner as to open into both chambers (endocarditis, degenerations, cysticercus, &c.). 3. The spleen is palpated and the splenic lymphatic glands are incised (tuberculosis, echinococci, &c.). 4. The mesentery. The glands are incised (tuberculosis). 5. The carcass. General aspect (hemorrhages, œdema, emaciation). Peritoneum and pleura (the diaphragm should be lifted lest it hang down and conceal something) (inflammations, tumours, tuberculosis). In the case of pleurisy in otherwise healthy animals the pleurae are carefully removed before the carcasses are stamped as "tauglich." 6. The sternum, the vertebral column, and the os pubis (tuberculosis, osteomyelitis). This concludes the examination made by the junior.

Mode of inspection followed by the senior inspector.—As already stated, the senior confines his attention to those animals preliminarily condemned by his junior colleague. These he subjects to a more thorough examination in order

to make up his mind if disease be present to any great extent, and if so whether the meat is to be entirely condemned and stamped as "untauglich" or unusable, or whether it may be possible for him to let it pass as "bedingt tauglich," in which case it is sterilised, or "minderwertig" (of poor quality), the two latter qualities being sold in the "Freibank." As tubercle is the disease from which animals are most frequently condemned a description of the mode of investigating such a case and the conclusions drawn therefrom may be given as an example. Two men who accompany the senior on his rounds attack the suspected carcass and mounting on ladders remove the following lymphatic glands, the one from the right, and the other from the left, half of the animal with the greatest dexterity, the process not occupying more than three minutes. 1. From the hind quarters.—External surface: (1) popliteal glands; and (2) kneefold glands. Internal surface: (1) superficial inguinal glands; (2) deep inguinal glands; and (3) internal iliac glands. 2. From the middle quarter.—Internal surface: (1) lumbar glands; and (2) renal glands. 3. From the fore-quarter.—External surface: prescapular glands. Internal surface: (1) lymphatic glands of inferior thoracic wall; (2) lymphatic glands of superior thoracic wall; and (3) upper, middle, and lower cervical glands. These glands are handed to the inspector, who, knife in hand, stands at a table and sections and examines them as they are brought. In the early stages of tubercle the glands become enlarged, and there is an increase in their fluid content; minute grey tubercles next make their appearance. Later the tubercles enlarge and become round in shape, while their centres show a cloudy appearance due to caseation, and finally a calcification takes the place of the caseation. Some of these calcified glands become greatly enlarged in size and so hard that they cannot be cut with a knife. It is very important that the inspector should be able to recognise the early stages of the disease, as, of course, glands which are beginning to enlarge and to exhibit minute tubercles are more dangerous than those in which calcification has already occurred. It is important to determine whether the disease is of a local or generalised character. Where extension has taken place through the lymphatics and not by means of the general circulation the tubercle is said to be local, whereas when the blood has conveyed the virus we speak of the condition as generalised. Generalised tubercle is of two forms: (1) acute, where the blood has become extensively infected by the bacilli and where in consequence we find many tubercles in nearly every organ; and (2) where there has been a slight infection of the blood with the formation of isolated tubercles in certain organs. It is interesting to note that it is the bases, and not the apices, of the lungs that first become affected with tubercle in bovine animals.

Professor Ostertag in the *Berlin Archives* says that the organs of cattle suffering from generalised tuberculosis are attacked in the following sequence. A uniform infection of the lungs and the liver, followed by an infection of the spleen and the kidneys, then the prescapular and the inguinal glands, the udder, the bones, and the joints. He also states that where the kneefold, the inguinal, the popliteal, the prescapular, and the axillary glands are tuberculous the bones of the extremities, the joints, and the skeletal muscles are also affected. Now it is taught that tubercle bacilli gain entrance into the muscular structures only when they are conveyed thither by the blood stream. Therefore the meat from animals suffering from generalised tuberculosis is injurious to health and must be condemned.

Much of the senior's inspection is merely confirmatory of that already undertaken by the junior. He should, however, prosecute his examination of organs and parts in a definite order: (1) meat, vertebral column, ribs, sternum, and pleura; (2) lymphatic glands (removed from carcass); (3) udder in female animals (palpation); (4) kidneys; (5) spleen (palpation, parallel longitudinal sections cut); (6) liver and portal lymphatic glands; (7) lungs, and adjoining glands; and (8) other internal organs. By proceeding thus, from the parts least likely to be affected to those that are generally diseased, he avoids, perhaps, selling healthy flesh by a knife already used to cut tuberculous material. Such an examination generally enables the inspector to decide without difficulty whether the disease is local or generalised.

Sanitary judgment.—If tubercle is present, even in isolated focus in any organ, the whole organ is to be condemned, as dangerous to health. Likewise, all appendages and lymphatic

small lymphatics running through it, or is the temperature which penetrates into the centre of a large roast of meat or other joint sufficient to effect the same purpose? Again, even if we grant that in the majority of cases the micro-organisms themselves are destroyed, we have yet to consider whether the toxins elaborated by their agency are affected by heat, and even if they are, whether their ingestion into the system is likely to prove injurious to health? Surely it is strange that in a country where meat is eaten twice, if not three times, a day by the majority of the inhabitants animals should still be permitted to be slaughtered in private abattoirs, situated often amidst the most insanitary surroundings and carried out without that degree of humanity, cleanliness, and precision which characterises the process in a country where all must be done under the eye of the skilled inspector.

THE REPORT OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRA- TIVE COUNTY OF LONDON.

II.¹

RESUMING our notice of this interesting report we observe that particular attention is devoted to an examination of the actual causes responsible for the sad waste of infant life which at an earlier stage of the report had been conclusively shown to persist in the metropolis. In a table contained in the report of the Committee on Physical Deterioration, to which frequent reference has been made in these columns, the infantile mortality in selected groups of English counties was compared in two quinquennial periods separated by an interval of 25 years. That table showed that in urban England throughout the quinquennium 1898-1902 infants died even more rapidly than in the period 1873-77, the maintenance of this high rate being especially due to excessive fatality from diarrhoeal diseases and from prematurity and congenital defects. In the report now before us a table for London is given showing the mortality in "trimesters" of the first half year of life in three quinquennia, commencing with the year 1888, when the deaths were first abstracted in periods of three months for the Registrar-General's reports. By this table the fact is established that whilst infantile mortality at ages under one year has increased since 1888 by nearly 1 per cent., it is in the first six months of life that the increase has been most conspicuous. As typical of what obtains in other London districts where the sanitary and social conditions are similar Sir Shirley F. Murphy quotes the case of St. Pancras, the medical officer of health of which borough has carefully analysed the present causes of infant mortality, comparing them with those that obtained in the same area a quarter of a century ago. In his recent annual report Dr. J. F. J. Sykes points out that so far from there having been improvement in recent years the infant mortality was slightly higher in 1901 than it had been in 1877. The death-rate from premature births and congenital defects in the earlier period was only about one-half that in the later, the mortality in 1901 being almost entirely confined to infants in the first week of life. Diarrhoeal diseases and diseases of the stomach and liver appear to have been more destructive in that year than in 1877 by about 50 per cent. In Dr. Sykes's opinion the statistics of St. Pancras indicate "that infants are dying at a younger and younger age, apparently from increased immaturity at birth, from diminished viability or capacity for survival, and from the increased prevalence of artificial feeding." Criticising the figures in the report of the Committee on Physical Deterioration, as well as those in the St. Pancras annual report, Sir Shirley Murphy is of opinion that the increases referred to in both cases may be apparent merely and may be due to natural causes. He thinks that better certification of deaths, especially those of children who survive their birth by a very brief period, would account for much of the apparent increase of mortality in early life from premature birth, &c. He further emphasises the well-known fact that diarrhoeal diseases are largely governed by temperature. With respect to this difference of

opinion between highly competent authorities, we would recall attention to what has already been shown in the present report—viz., that excessive infantile mortality is practically confined to the poor dwellers in overcrowded tenements. The facts are not before us, but we should regard it as highly probable that in their sufferings these luckless infants receive only a minimum of nursing or of medical care, the latter perhaps for only a few days or even hours before death. What proportion of these infants have been medically attended we know not, but from a cursory inspection of considerable samples of medical certificates relating to such cases we hesitate to base upon them any very definite conclusions on one side or the other.

With reference to artificial feeding and its well-known disastrous effects on infant health and life Sir Shirley Murphy quotes some interesting statistics prepared by Dr. W. J. Howarth, the medical officer of health of Derby, who has taken the trouble of analysing the causes of death of more than 8000 infants under one year of age and of recording in considerable detail their life-history. The figures show that, speaking generally and without reference to particular causes of death, hand-fed infants die in greater proportion than those who are fed first from the breast and afterwards by hand, and these again in greater proportion than those who are wholly breast-fed. The statistics of mortality from diarrhoea and epidemic enteritis are especially instructive, inasmuch as the numbers dealt with are sufficiently large to form a fair basis for calculation. From these we find that among 5278 breast-fed children only 86 died out of every 10,000 children born; among 1439 children first breast-fed and afterwards fed by hand, 216 died; whilst among 1626 exclusively hand-fed children not less than 517 died out of every 10,000 born.

Throughout London generally sanitary authorities and their officers are now devoting increased attention to the study and prevention of infantile mortality. In June, 1905, a conference was held at St. Pancras town hall under the presidency of Dr. R. M. Beaton, the present chairman of the public health committee. This conference was largely attended and resolutions were adopted which aimed at the bringing of newly born infants under the early supervision of the health authority, with a view of securing the better treatment and feeding of infants. In order to secure prompt information of the birth of infants female inspectors are employed by most of the London sanitary authorities and the Registrar-General has authorised the local registrars to supply these inspectors with the addresses of parents the births of whose infants have been registered. Moreover, the London County Council, as administrators of the recent Midwives Act, has arranged to receive from midwives weekly the names and addresses of patients attended by them and this information is forwarded to the medical officers of health concerned. From the fact that the returns received in this way are at the rate of about 30,000 births per annum, or about a quarter of the total births, the newly born infants in the poorest London districts will by this means be brought under supervision shortly after birth. The action hitherto taken by the sanitary authorities as a result of this information consists in the visitation of the mothers by female inspectors and the giving by them of printed and verbal advice as to the management and feeding of children. In Battersea, Lambeth, and Finsbury milk depôts have been provided either by the municipalities or by charitable effort, and in Holborn the borough council has made arrangements for the sale in suitable cases of wholesome milk for infant food at a reasonable cost to the parents.

Coming to the question of general mortality as it affects all ages of the population Sir Shirley Murphy provides the usual stereotyped tables and diagrams. In a preliminary table relating to the principal causes of death we note that the diseases showing excessive mortality in 1905 as compared with the decennial average are the following: pneumonia, cancer, and diseases of the urinary system; the remaining diseases, 17 in number, including those contributing most largely to the aggregate mortality, were in 1905 less fatal than the average. In another table the mortality in the several metropolitan boroughs is shown, the death-rates from certain diseases or groups of disease being given, after correction for deaths occurring in public institutions, and the deaths from cancer and pulmonary tuberculosis having been further corrected for age differences of population.

(To be concluded.)

¹ The first notice appeared in THE LANCET of Jan. 19th, 1907, p. 185.

ECONOMIC PROBLEMS IN THE PRACTICE OF MEDICINE.

DR. LAURISTON E. SHAW, President of the Marylebone division of the Metropolitan Counties branch of the British Medical Association, took the chair on Jan. 24th at a meeting held at the rooms of the Medical Society of London to discuss economic problems in the practice of medicine.

Dr. R. C. BUIST moved the following proposition:—

That the development of properly organized systems of mutual insurance for the costs of illness offers the most readily available method of reducing the admitted evils of excessive medical charity and the misuse of hospitals.

He said that so many people flocked to the great medical charities because they thought they were getting special skill at the hospitals that medical men must convince them that that skill was at their disposal by means other than by the abuse of the charities. For that purpose he suggested some system of insurance and the voluntary development of the principle seemed more practicable than the compulsory development of the plan. The provision offered by a voluntary system could be complete, including sick pay, medical attendance, and medicines. The essential conditions of satisfactory medical attendance were that the patient must be able to choose his medical man and that the remuneration to the latter must be adequate. Any such system must be based on the agreement of the whole profession. The work must be open to every practitioner who wished to do it and there must be local agreement as to the rates of remuneration for which the work must be done. He advocated the system called the Public Medical Service which was a local organisation undertaken by practitioners and served by all medical men who wished to take a part in the work. In those places where public medical service had been established the work was done economically and the patients had freedom to change their medical advisers if there was dissatisfaction.

Mr. H. W. ARMIT said that any properly organised system of insurance against the cost of sickness and accident which would apply to the mass of the population must be an enormous undertaking but would solve the problem if well conducted. The German system formed an excellent basis to work upon, even though it would not be wise to adopt it in its entirety in this country. All medical men should be prepared to take their share of the work at a reasonable rate of remuneration and all workmen earning less than £2 a week should be compelled to subscribe to the funds of the system. For the class of person earning from £110 to £300 a year no form of compulsory insurance was practicable. Workmen whose earnings are irregular would come under the Poor-law relief and those who spent their money in drink and other excesses could be dealt with in a penal way. The big insurance companies might be asked to issue policies to persons with incomes from £110 to £300 covering the charges made for medical attendance and for consultations with specialists when necessary. In such a scheme for each workman earning £2 a week a card would be issued and the medical practitioner would treat the patient according to contract and would receive payment from the institution insuring the workman. He contended that hospitals should only admit patients who produced their cards signed by the practitioner in charge of the case. No person whose income exceeded £300 per annum should be allowed to remain in hospital, except where it would be dangerous to remove the patient after first aid had been given. He thought that no voluntary insurance system for the lower wage-earner would meet with success. He suggested that the British Medical Association should prepare a Bill for compulsory insurance against sickness and accident.

Mrs. J. A. D. SCHARLIER, M.D., said that medical women must not be excluded from cooperation in any scheme suggested. Medical men and medical women must work together so that the whole profession would be able to do its duty to the poor of the country without undue pauperising and indiscriminate charity.

Dr. J. H. KEAY was disappointed with the position taken up by Dr. Buist. Dr. Keay did not consider that a scheme of optional insurance would meet the case. The time had gone by for relying upon anything but compulsory insurance.

Mr. G. GRUBBS said that actually there would be no difficulty in deciding what premiums were necessary in the case

of the different systems of insurance. Any national system would necessarily be more successful than an optional and partial one.

Sir HUGH BEEVOR sent a communication in which he said that the recent hospital conference recommended the provision of nursing homes, but he questioned whether nursing homes would be as efficient economically as hospitals. At first sight insurance seemed to be the most ready solution of the problem of hospital abuse, but he was not over-sanguine as to the possibility of this method of meeting the difficulty.

Dr. J. H. DAUBER said that the motion submitted appeared to him to be a counsel of perfection and he did not consider that the medical profession had any power to enforce it.

Mr. F. R. HUMPHREYS having addressed the meeting, Dr. R. BOXALL pointed out that the whole effectiveness of sick insurance depended on the system being properly organised.

Dr. BUIST having replied, the motion was put to the meeting and carried unanimously.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7874 births and 5584 deaths were registered during the week ending Jan. 26th. The annual rate of mortality, which had been equal to 22·4, 20·7, and 18·1 per 1000 in the three preceding weeks, rose again slightly to 18·2 in the week under notice. During the first four weeks of the current quarter the death-rate in these towns averaged 19·9 per 1000, the rate during the same period in London being 20·6. The lowest death-rates in the 76 towns during last week were 8·1 in Hornsey, 10·3 in Grimsby, 11·4 in Tynemouth, and 11·7 in Burton-on-Trent; the rates in the other towns ranged upwards to 25·6 in Hull and in Middlesbrough, 31·5 in Stockton, and 32·4 in Newport (Mon.). The 5584 deaths in the 76 towns showed an increase of 35 upon those returned in the previous week, and included 416 which were referred to the principal epidemic diseases, against 423 and 38 in the two preceding weeks; of these, 125 resulted from whooping-cough, 97 from measles, 80 from diphtheria, 45 from diarrhoea, 42 from scarlet fever, 25 from "fever" (principally enteric), and two from small-pox. The deaths from these epidemic diseases were equal to a mean annual rate of 1·4 per 1000 in the 76 towns; the rate in London from the same diseases did not exceed 1·1. No death from any of these epidemic diseases was registered last week in Sunderland, Gateshead, Wolverhampton, Northampton, or in nine other of the 76 towns; the annual death-rates therefrom, however, ranged upwards to 3·5 in Wigan, 4·6 in Walthamstow, 5·1 in Hull, and 6·1 in Middlesbrough. The 125 fatal cases of whooping-cough showed a further considerable increase upon recent weekly numbers, and caused an annual death rate of 1·7 in Willesden, 2·0 in Middlesbrough, 2·1 in Stockport, and 3·3 in Walthamstow. The deaths from measles, however, showed a further marked decline, although they caused rates of 1·8 in Wigan and in South Shields, and 3·5 in Hull. Diphtheria caused the largest proportional fatality in Derby, Berwick, Croydon, and Middlesbrough; scarlet fever in Newport (Mon.); and "fever" in Middlesbrough. The two fatal cases of small-pox occurred in Hull and in Cardiff. No case of small-pox has been under treatment in the Metropolitan Asylums Hospitals since the end of June last. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had steadily declined in the four preceding weeks from 3846 to 3405, had further fallen to 3291 at the end of the week under notice; 307 new cases were admitted to these hospitals during the week, against 285 and 325 in the two previous weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 718, 620, and 446 in the three preceding weeks, rose again during the week under notice to 484, and exceeded the corrected average in the corresponding week of the last five years by 92. The causes of 53, or 0·9 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, Salford, and in 47 other of the 76 towns; the proportion of uncertified deaths, however, again showed marked excess in Birmingham, Liverpool, St. Helens, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 22·9, 20·8, and 20·5 per 1000 in the three preceding weeks, further declined to 19·1 in the week ending Jan. 26th, but exceeded the mean rate in the 76 English towns by 0·9. The rates in the eight Scotch towns ranged from 15·6 and 15·8 in Leith and Aberdeen, to 22·0 in Edinburgh and 26·9 in Perth. The 662 deaths in the eight towns showed a further decline of 51 from the numbers returned in the three preceding weeks, and included 71 which were referred to the principal epidemic diseases, against 67 and 80 in the two previous weeks. These 71 deaths were equal to an annual rate of 2·0 per 1000, which exceeded by 0·6 the rate from the same diseases in the 76 English towns; they included 25 which were referred to "fever," 16 to whooping-cough, 16 to diarrhoea, seven to scarlet fever, four to diphtheria, three to measles, and not one to small-pox. The 25 deaths from "fever" showed a further marked increase upon recent weekly numbers, and included 21 in Glasgow, two in Edinburgh, and one each in Leith and Greenock; 20 of the fatal cases in Glasgow as well as the three returned in Edinburgh and Greenock were certified as cerebro-spinal meningitis. Of the 16 fatal cases of whooping-cough, showing a decline from recent weekly numbers, 11 occurred in Glasgow, and four in Aberdeen; and ten of the deaths referred to diarrhoea were returned in Glasgow. Three deaths from scarlet fever occurred both in Glasgow and Edinburgh, two from measles in Edinburgh; and two from diphtheria in Dundee. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 185 and 177 in the two preceding weeks, further declined to 134 in the week under notice, but exceeded the number returned in the corresponding week of last year by 24. The causes of 33, or 5·0 per cent., of the deaths registered during the week in the eight towns were not certified or not stated; the mean proportion of uncertified deaths in the 76 English towns during the same week did not exceed 0·9 per cent.

HEALTH OF DUBLIN.

The annual death-rate in Dublin, which had been equal to 31·9, 29·0, and 27·5 per 1000 in the three preceding weeks, rose again to 28·6 in the week ending Jan. 26th. During the first four weeks of the current quarter the death-rate in the city averaged 29·2 per 1000, the mean rate during the same period being only 20·6 in London and 21·3 in Edinburgh. The 214 deaths of Dublin residents during the week under notice showed an increase of eight upon the number in the previous week, and included seven which were referred to the principal epidemic diseases, against eight and 11 in the two preceding weeks. These seven deaths were equal to an annual rate of 0·9 per 1000, and included five from whooping-cough, one each from "fever," and scarlet fever, and not one either from diphtheria, measles, diarrhoea, or small-pox. The five fatal cases of whooping-cough corresponded with the number in the previous week. Six inquest cases and seven deaths from violence were registered during the week; and 80, or 42·1 per cent., of the deaths occurred in public institutions. The causes of four, or 1·9 per cent., of the deaths registered in the city during the week were not certified; the percentage of uncertified deaths in the week under notice was equal to 7·9 in Edinburgh, while in London all but one of the 1647 deaths were duly certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff Surgeon: A. H. Jeremy to the *Fox*, temporary, on recommissioning. Surgeons: H. B. Hill to the *Victory* for Physical Training School, G. D. Walsh to the *Hampshire*, and G. H. S. Milln to the *Halcyon*.

ROYAL ARMY MEDICAL CORPS.

Colonel J. J. Morris, administrative medical officer, Portsmouth Coast Defences, is granted leave of absence from Feb. 1st to April 9th next. His duties will be carried out by Lieutenant-Colonel W. G. A. Bedford, C.M.G. Major O. J. Healy, from Ceylon is appointed for duty at Londonderry. Captain B. S. Bartlett, from India, is posted to the Eastern

Command for duty. Lieutenant G. F. Rugg is posted to the Eastern Command.

ROYAL ARMY MEDICAL CORPS IN INDIA.

The following appointments have been made:—Lieutenant-Colonel D. O'Sullivan, to command the Station Hospital, Secunderabad; Lieutenant-Colonel T. J. R. Lucas, O.B., to command the Station Hospital, Bangalore; Major H. S. Peeke, to command the Station Hospital, Campbellpore; Major D. Shiell, to command the Station Hospital, Dinapore; Major M. Boyle, to Station Hospital, Bareilly, for duty; Captain A. O'B. Wroughton, to command Station Hospital, Malapuram; Lieutenant W. O. Nimmo, to Station Hospital, Fyzabad, for duty on completion of course of instructions in sanitation at Lucknow; and Lieutenant M. Keane, to Meerut on completion of course of instructions in sanitation at Lucknow.

The undermentioned officers, on arrival from England, are posted as follows: Lieutenant-Colonel H. S. McGill to 6th (Poona) Division; Lieutenant-Colonel R. L. R. Macleod to 4th (Quetta) Division; Lieutenant-Colonel H. P. G. Elkington to 5th (Mhow) Division; Lieutenant-Colonel J. J. O'Donnell to 5th (Mhow) Division; Major F. W. Begbie to 5th (Mhow) Division; and Captain H. G. Martin to 6th (Poona) Division.

INDIAN MEDICAL SERVICE.

The King has approved of the following promotions made by the Government of India. Lieutenants to be Captains (dated August 31st, 1906): Robert Kelsall, John Hay Burgess, Charles Hildred Brodrick, John McCallum Anderson Macmillan, Olifford Allchin Gill, William Edward James Tuohy, Terence Francis Owens, Richard Francis Steel, George Francis Innes Harkness, Arthur Charles Ingram, Gordon William Maconachie, Ernest William Charles Bradfield, Alexander William Montgomery Harvey, Charles Isherwood Brierley, John Brown Dalzell Hunter, and Edward Temple Harris.

ARMY MEDICAL RESERVE OF OFFICERS.

The undermentioned Surgeon-Lieutenant-Colonels having resigned their commissions in the Volunteers cease to belong to the Army Medical Reserve of Officers:—George England and Joseph Willoughby Hodgson.

IMPERIAL YEOMANRY.

Hampshire (Carabiniers): Surgeon-Lieutenant H. A. Ahrens to be Surgeon-Captain (dated Nov. 28th, 1906). *Montgomeryshire*: Surgeon-Lieutenant H. Connop resigns his commission (dated Dec. 1st, 1906).

VOLUNTEER CORPS.

Rifle: 2nd Volunteer Battalion, the East Surrey Regiment: Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel W. Gandy is borne as supernumerary whilst holding the appointment of Brigade Surgeon-Lieutenant-Colonel, Senior Medical Officer, East Surrey Volunteer Infantry Brigade (dated June 1st, 1906). 1st Volunteer Battalion, the Royal Sussex Regiment: Surgeon-Lieutenant H. V. Pryce resigns his commission (dated Jan. 1st, 1907). 5th (Glasgow Highland) Volunteer Battalion, the Highland Light Infantry: Surgeon-Lieutenant-Colonel A. Mappee is granted the honorary rank of Surgeon-Colonel and resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated Dec. 29th, 1906).

Royal Garrison Artillery (Volunteers): 1st Edinburgh (City): Surgeon-Captain R. B. Parves resigns his commission (dated Dec. 21st, 1906). 1st Kent: Surgeon-Lieutenant-Colonel O. Arrol is granted the honorary rank of Surgeon-Colonel (dated Jan. 1st, 1907).

Royal Engineers (Volunteers): 2nd Lanarkshire: Surgeon-Lieutenant J. A. Cook resigns his commission (dated Dec. 13th, 1906). 1st (Sheffield) Yorkshire (West Riding): Surgeon-Major O. H. Willey is granted the honorary rank of Surgeon-Lieutenant-Colonel (dated Dec. 30th, 1906). Surgeon-Major and Honorary Surgeon-Lieutenant-Colonel C. H. Willey resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated Dec. 31st, 1906).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Cheshire Bearer Company: Surgeon-Major George William Sidebotham, from the 4th Volunteer Battalion, the Cheshire Regiment, to be Major (dated Dec. 1st, 1906). East Surrey Bearer Company: John Alexander Preston, gentleman, to be Lieutenant (dated Dec. 8th, 1906).

ROYAL ARMY MEDICAL CORPS EXAMINATION.

The following is the list of successful candidates for commissions in the Royal Army Medical Corps at the recent examination in London for which 78 candidates entered, of the successful 30 candidates 14 were university graduates:—

Names.	Marks.	Names.	Marks.
W. R. Beaman ...	612	J. H. Garley ...	503
C. Cassidy ...	530	F. H. M. Chapman ...	507
A. D. Fraser ...	575	A. C. Elliott ...	503
M. P. Leahy ...	565	J. du P. Langrishe ...	503
F. T. Turner ...	555	W. G. Arvis ...	500
A. I. Fortescue ...	550	W. B. Pardon ...	497
H. G. Gibson ...	548	H. M. J. Perry ...	495
J. L. Wood ...	545	J. C. Hart ...	493
S. Field ...	533	M. O. Wilson ...	493
R. D. O'Connor ...	533	T. H. Scott ...	491
M. F. Mackenzie ...	523	L. A. A. Andrews ...	489
J. E. M. Boyd ...	523	G. F. Rudkin ...	484
G. Carlisle ...	517	V. T. Carruthers ...	482
E. M. Middleton ...	516	H. W. Farebrother ...	481
O. R. McEwen ...	510	F. Carement ...	479

ENTERIC FEVER IN INDIA.

The following subjects were discussed at the second meeting of the standing committee on enteric fever recently held at Simla, and resolutions passed concerning them—viz., removal and disposal of sewage, washing of clothes, appointment of special sanitary officers for large cantonments, organising regimental supervision of sanitation in lines, improved means for removing infected clothing from barracks to hospitals for disinfection, disinfectors for excreta, the provision of heat-exchange water purifiers for use in camps and on service, means of conveying meals from kitchens to barrack rooms, increasing the number of clinical laboratories at divisional and brigade headquarters.

It is satisfactory to be able to record a considerable and progressive decrease in the cases of enteric fever occurring recently amongst British troops, the fresh admissions under this heading throughout the whole of India being for the last three months as follows: September, 117; October, 66; November, 31. No doubt the increased attention paid by the authorities to sanitation has already contributed to this reduction.

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The January number of this journal contains many papers on a variety of subjects of more or less special interest to officers of the medical services, dealing as they do with sanitation in India, enteric fever, malaria, and diseases of hot climates, together with those incidental to life in the public services. The first article, by Major F. Smith, D.S.O., R.A.M.C., is on the Soldier's Heart and the Civilian's. The liability of the soldier to acquire an increased pulse-rate and palpitation has been often remarked upon and described under such titles as "irritable heart," the "trotting heart," &c. But as the result of an experimental comparison conducted on a limited scale Major Smith is led to conclude that the soldiers' hearts do not beat more rapidly than civilians' hearts, that the influences operating on soldiers are also operating on those of civilians, and he thinks that some valuable information might be gained by a more extended examination and inquiry into the subject. Colonel Francis J. Lambkin, R.A.M.C., has a report on "So-called Virulent Syphilis and its Treatment." This number also contains some good and discriminating reviews.

ADMINISTRATIVE MEDICAL OFFICERS.

The *Broad Arrow* states that the Army Council has decided that administrative medical officers shall in future have such administrative medical charge and authority as regards their areas as is now vested in principal medical officers. Administrative medical officers and senior medical officers of the larger stations will, before submission to higher authority, bring such questions to the notice of local commanders, in order that the latter may have an opportunity of expressing their opinions thereon.

SWANSEA GENERAL HOSPITAL.—At a meeting of the Swansea hospital board held on Jan. 22nd a resolution passed by the local branch of the British Medical Association was read. It stated that in consequence of the increasing abuse of the hospital as a charity organisation the Association urged the appointment of a special officer to investigate the circumstances of all applicants for treatment before they are seen by the medical staff. After some discussion it was decided to refer the matter to the house committee of the institution.

Correspondence.

"Audi alteram partem."

THE HOSPITAL FUNDS AND THE MEDICAL PROFESSION.

To the Editors of THE LANCET.

SIRS,—All friends of the voluntary hospital system are grateful to you for the constant help and encouragement you give to the great hospital funds which promise to be saving of our voluntary hospitals. This gratitude will only be increased by your leader of Saturday last on the steps taken by the King's Fund and the Hospital Sunday Fund respectively to place their constitution on a more permanent and satisfactory basis. Such a step on their part is the more reasonable from their increasing importance and the many indications of public confidence. Such confidence is a great treasure and cannot be too jealously guarded. One of its advantages is that it permits a candid criticism of both funds and of all doubtful or exceptional proposals. I ask leave to say two or three words on your loyal and friendly criticism.

First, in regard to Section 3 of the Bill providing for the management of the King's Fund and putting all power over the general council and the committees, over the monies collected and over their distribution into the hands of the Sovereign or, through him, those of the Heir Apparent. It will be astounding news to the profession and the public that such a proposal should be made in Great Britain, in a country which boasts of its voluntary hospitals and which rejoices in a king and heir so splendidly loyal to the constitutional principles which underlie all public finance, especially monies supplied on the voluntary principle. If free and unhampered discretion is not allowed to, or is not used by, those in the management who are supposed to represent the public, it may well be feared that the delicate system of voluntary institutions will be fatally impaired and that on the King or his Heir will fall all the blame. Doubtless we are in some degree spoiled by having such a King and Heir Apparent as at present. And we cannot doubt that the Council of the King's Fund—for we could never blame His Majesty or His Royal Highness the Prince for this remarkable proposal—have been misled by the subtle influence of this fact. Nevertheless, they must be reminded of their duties and cannot be excused for sinking their responsibilities as trustees of funds the scale of which is undoubtedly largely due to the benevolent and kindly nature of the Sovereign's interest in this great charity. Neither the King nor the British public will think the less of them for modifying or withdrawing a clause which shocks every principle of hospital or public finance.

Your reference to the action of the metropolitan branch of the British Medical Association and the Hospital Sunday Fund will, I am sure, be taken in good part by this Fund. But I am not so sure that the branch is so much aggrieved as it would have the public and the profession think. Certainly it has no such grievance as to justify it in opposing before the Privy Council the grant of a charter to the Hospital Sunday Fund on the ground of non-representation of the medical profession on the Fund. It is by more genial and friendly methods than this that the branch is likely to effect its objects. The objectors write as if the medical profession had no representative on the Fund. It may surprise the profession to know that Sir William Church, Mr. Bryant, Sir Dyce Duckworth, Mr. Willett, Sir Frederick Treves, Sir Stephen Mackenzie, and Mr. Pearce Gould are on the Hospital Sunday Fund, to say nothing of general practitioners, two of whom are on the Fund. Not only so. It is within my knowledge that the offer of a seat on the council has been made at least once to another general practitioner, highly respected and of much weight in the council of the British Medical Association and of the metropolitan branch thereof. Further, let me say that Sir William Church is a member of the distribution committee, if not chairman, and that Sir William Church was chosen very lately to preside over a very special and important meeting of the British Medical Association. I should be, of course, delighted to see more general practitioners on the council and this can easily be arranged through the action of the churches of London which contribute the money.

Under these circumstances, Sirs, I think you will agree

that the British Medical Association is rather apt at the creation of grievances and that the Hospital Sunday Fund might expect a little different treatment at its hands.

I am, Sirs, yours faithfully,
Highbury-place, N., Jan. 29th, 1906. JAMES GREY GLOVER.

THE DISCOVERER OF THE ETIOLOGY OF PUERPERAL FEVER.

To the Editors of THE LANCET.

SIRS,—Will you kindly grant me space for a few remarks on the question of the discovery of the etiology of puerperal fever and the claims of priority advanced on behalf of Oliver Wendell Holmes and of Semmelweis? I only wish to state certain conclusions the truth of which I hope soon to demonstrate to all unprejudiced readers of the history of medicine. There can be no real question of priority. Holmes did good service to obstetrics and consequently to humanity, but he discovered nothing; he added nothing to the sum of the scientific knowledge of obstetrics by his essay on "The Contagiousness of Puerperal Fever." Semmelweis, on the other hand, discovered the true cause of puerperal fever; he laid the scientific basis of our prophylaxis and so rendered a service to humanity comparable only with that of Jenner. Moreover, he devoted the whole of his too brief span of life to the spread of his doctrine (*Lehre*), and he lived long enough to put an end to the worst ravages of puerperal fever in the lying-in hospitals of Europe, for many, who openly jeered at his fanaticism and his eccentricities, privately applied his principles to the prevention of the disease in their own institutions. They gave their patients the benefit of the doubt.

Holmes collected evidence from the practical experience of other men, for he had comparatively little practical experience of his own, and, in some measure like a barrister, he marshalled this evidence and stated his conclusions in an essay of which the most striking feature is its extraordinary literary charm, at least in the estimation of those who are attracted by his style. Holmes entered upon his inquiry with the preconception which he held in common with most of his contemporaries that: "The disease known as puerperal fever is so far contagious as to be frequently carried from patient to patient by physicians and nurses." He gives this sentence a very prominent position in the reprint of 1855 as a quotation from the original essay of 1843; and I submit that the careful study of the essay as a whole must compel the reader to the conclusion that this quotation contains the author's whole contribution to obstetric science. The authorities quoted by him throughout, and his practical directions as to the means of preventing the spread of the disease, all go to prove that Holmes was a contagionist like his more thoughtful contemporaries, no more and no less. For example, the remarkable eulogy which he bestows upon Gordon of Aberdeen reveals the essential character of his own opinions. He quotes Gordon's "terrible evidence," and he prints in capital letters Gordon's allegation that he "could venture to foretell what women would be affected." But Gordon treated his cases exactly according to Denman's methods, except that the Aberdeen women revolted at the blistering; and these therapeutic measures prove that he had no new conceptions about the nature of the disease. As to "foretell," Walsh used the identical word with regard to exactly similar circumstances in an essay which he published ten years before Gordon's and which must have been as well known to Gordon as were Denman's works, which he quotes.

The fact is they all held the barren doctrine of contagionism, the spread of the disease by some pervading unknown agency, a miasm, a "cosmic, telluric, atmospheric influence." This doctrine is implied, almost stated, in one of the final paragraphs suggesting methods of preventing the disease from being conveyed by the medical practitioner: "He would do wisely to relinquish his obstetrical practice for at least one month, and endeavour to free himself by every available means from any noxious influence he may carry about with him." No candid interpretation of this paragraph can surely lead to any conclusion except that which I have just stated. It is rank contagionism, not so enlightened as Eisenmann's "Kindbettfeber" published in 1834. But O. W. Holmes himself laid no claim to originality or to any discovery; the distinction was thrust upon him in his later years by admirers of the distinguished man of letters who magnified out of all recognition the services of the undistinguished man of science.

"I do not expect ever to return to this subject," Holmes wrote when commenting on the amenities of controversy to which he and his essay had been subjected by some opponents. Could the discoverer of the cause of a pestilence which was year by year hurrying innumerable young mothers prematurely to the grave, and, to use his own words, bowing the strength of manhood into the dust, could such a man have ever found it possible to abandon "this subject"? Yes, if only the subject of a semi-literary task; no, if the subject of a creed and of a crusade to which a man's whole life must be devoted.

Now after considering this calm, philosophic, though eloquent, exposition of the contagious doctrine and its practical consequences, let us turn to the achievement of Semmelweis and his devotion to that which he conceived to be his duty to humanity. Can any man read without pity and admiration the tragic story of the discovery and its disastrous consequences to the discoverer in his life-long struggle to spread his doctrine and to stay the plague? We deplore while we sympathise with the sufferings of the tender-hearted man, helpless amidst the scenes of misery and death in the Vienna hospital, but we are soon filled with admiration for the steadfast will and the clear intellect which grasped the relevant constant elements amidst the apparent chaos of elusive details and conflicting circumstances, and ultimately brought certain factors into causal relationship with the phenomena of the disease. Semmelweis had solved a problem which had baffled the most observant and philosophic physicians for many generations.

The pestilence no longer depends upon some mysterious "influence"; it is reduced to the pyæmia already too well known to surgeons. It is the squalid product of filth, of actual contact with decomposing animal matter. "The carrier of the decomposed animal organic matter is the examining finger, the operating hand, the instruments anything which can be rendered unclean and then brought into contact with the genitals of the parturient or recently delivered woman." To compare this doctrine with opinions prevalent in New England or elsewhere about the same time is to compare unlike things; between them there is hardly a *tertium quid*. Semmelweis himself well expressed the consequent practical difference: "When English practitioners have the misfortune to lose several lying-in patients they are not satisfied with disinfection by means of washing with chlorine, but they set aside their midwifery practice for some weeks or take a tour of several weeks' duration in order to get completely rid of the puerperal contagion. We destroy the decomposed material by means of chloride washings and hold this disinfection for sufficient."¹

Here was the position which Semmelweis had reached after much tribulation. "I do not expect to return to this subject," exclaimed Holmes. Semmelweis was never to leave "this subject"; he was to devote his sad existence to the pathetic struggle to establish "Meine Lehre." "Should it so happen, which God forbid, that it is not vouchsafed to me to see with my own eyes the happy time when both inside and outside the maternity hospitals of the whole world only cases of self-infection may be occasionally found, still the conviction that such a time must come sooner or later after me will brighten my dying hours (*erheutern*)."

Fritsch, writing a quarter of a century later, declared: "In the history of obstetrics there is a dark page, and its heading is 'Semmelweis.' Who could avoid feeling the powerful impression produced by his book? Even to-day whole pages of his deductions might stand in the most modern work. And the annihilating logic of his statistics! We young men to whom antipathies were unthinkable! We whom coarse tirades against 'genius misunderstood' were only wearisome reading, we find it incomprehensible that the logical conclusions from the doctrine of infection were nowhere drawn."

But although the "*Lehre*" was at first greeted with derision or hostility by the occupant of almost every chair of obstetrics in Europe, the logical conclusions came ultimately to be drawn and applied everywhere. Much had to be done by bacteriologists and by surgeons, especially by our own Lister, before the vast service to mankind which had been rendered by Semmelweis came to be seen in its due proportion; but the era which he foresaw has arrived, and it is now generally, almost universally, recognised that to

Semmelweis, and to him alone, we owe the modern etiology and pathology of childbed fever—"Puerperal-Fieber ist Wund-Fieber: Wund-Fieber ist Wundvergiftung," and "all infection comes from without." Upon these doctrines our prophylaxis and our therapeutics are entirely based.

I am, Sirs, yours faithfully,

Manchester, Jan. 21st, 1907.

WILLIAM J. SINCLAIR.

To the Editors of THE LANCET.

SIRS,—Your annotation on "The Respective Merits of Semmelweis and Oliver Wendell Holmes in the Treatment of Childbed Fever" does not give credit to the man who first proclaimed its highly contagious character—viz., Gordon of Aberdeen; and although according to Dr. T. C. Allbutt of Cambridge "the benefactor to whom the world's gratitude and memorial are due is he who makes the thing go," we must not forget him, who at such an early date did what was possible in his day to enlighten the profession on the subject.

I am, Sirs, yours faithfully,

JOHN HADDON, M.D. Edin.

Denholm, Hawick, Jan. 22nd, 1907.

THE INTRAMEATAL OPERATION.

To the Editors of THE LANCET.

SIRS,—May I be allowed to once again encroach upon your valuable space in order to reply to the inaccuracies contained in Mr. F. Faulder White's letter in THE LANCET of Jan. 5th, to which my attention has only just been drawn.

Mr. White is under a serious misapprehension when he says that he is gratified to find that I am "now in favour" of the intrameatal operation. If he will consult the *Clinical Journal* of May 24th, 1899, he will find a paper by me on Ossiculectomy which will convince him that I have been "in favour" of that procedure for some considerable time. As regards the paper on the mastoid operation to which he refers, I in no way withdraw one single word of what I then wrote. Mr. White (who at one time advocated the curing of every case of otorrhœa by irrigation) has written much about his operation, to which he has given the name of "otectomy" (literally, removal of the ear), but I have never read any account of it that does not plainly show it to be merely an ossiculectomy, with removal of the outer attic wall. The latter addition I, in common with other otologists, have done for several years past, as reference to the Transactions of the Otological Society will show. Mr. White writes as if he alone had advocated ossiculectomy and that in the face of opposition from every otologist; as a matter of fact, Mr. White, starting with universal irrigation, now pushes universal "otectomy" as zealously as he once insisted on the wickedness of operating at all.

In conclusion, I would like to add one word of comment upon Dr. Frederick Spicer's letter in THE LANCET of Jan. 5th. Mr. Charles J. Heath's former paper was read before the Otological Society and was there severely criticised, and most justly so.

I am, Sirs, yours faithfully,

MACLEOD YEARSLEY.

Upper Wimpole-street, W., Jan. 17th, 1907.

ABORTION AMONG THE ANCIENTS.

To the Editors of THE LANCET.

SIRS,—Referring to an annotation under this title published in THE LANCET of Jan. 19th, p. 178, where a recent paper by me is discussed, allow me to state briefly that your critic or reviewer does not seem to have understood me perfectly.

I never dreamed of saying that "abortion was not considered immoral by the early Christians," but I stated that neither the Old nor the New Testament mention that subject. I showed that among the Pagan philosophers opinions varied about the immorality of abortion, but that there is good reason for supposing that the so-called Orphic sects condemned abortion very strongly. The same horror for the practice of abortion was found to prevail in early Christian literature (later than the Gospels), is in accordance with the morals of Orphism, and may very well have borrowed its expressions from that source. All those who have studied the "Purges of Orpheus in the Roman catacombs and the texts of the early Fathers, claiming Orpheus as a disciple of Moses, will readily acknowledge the possibility of an Orphic influence on the written morals of Christianity, wherever the point at issue has been left untouched by the Holy Writ.

I never said or thought that Virgil, in the passage, *Æneid* VI., 426-30, had meant the infant victims of abortion. But it is well known to scholars that Virgil, especially in that part of his poem, imitated and combined Greek sources, often at second hand, and without understanding them as a modern scholar would try to do. Now, I have shown that in the passage in question victims of an unjust, premature, and violent death are grouped together; the only apparent exceptions are the newly born babes. So I ventured to suggest that, in the Greek source lost to us, but known to Virgil and followed by him with some sort of sluggishness, that apparent exception did not exist and that the newly born babes were the victims of abortion. Further, by a quotation of the pseudo-Petrine gospel, which has many points in common with Virgil's Greek and Orphic source, I made it pretty clear that my hypothesis may almost be considered as a certitude, inasmuch as we have a right to reason about a text which we do not possess, with the help of other texts derived from it. I would be astonished if any professional scholar maintained a contrary opinion after having taken cognisance of mine. I am, Sirs, yours faithfully,

Paris, Jan. 22nd, 1907.

SALOMON REINACH.

THE OPERATIVE TREATMENT OF ADHERENT PERICARDIUM AND CARDIAC HYPERTROPHY.

To the Editors of THE LANCET.

SIRS,—On July 28th of last year you did me the favour to publish in THE LANCET a paper on Pericarditis in Childhood. My chief incentive in publishing that paper was the hope—not realised—that my proposals for the surgical treatment of adhesive pericarditis and cardiac hypertrophy might be discussed by physicians and surgeons whether by way of approval or condemnation. I endeavoured to show by a study of the growth of the heart both in embryo and under pathological conditions that what the labouring heart in certain circumstances requires is more room, whether to grow in or to act in. I mentioned that to the derision of a reviewer of my book on "Cardiac Failure" (1897) I had indicated cardiac symphysiotomy as a possible triumph of surgery and was met with the retort that I had in any case exhibited a triumph of imagination. Towards the end of my paper I remarked: "I am aware that in speaking thus (in advocacy of the procedure) I do so on theoretical grounds and not from actual experience, but such thought has frequently preceded action ultimately justified by results, and I am not unhopful that surgery, which has accomplished so much, may also in well-defined circumstances find a place in some cases of adherent pericardium. To return to our embryo, the growing organ requires a surplus of room to grow in; the overgrown organ requires more room to work in, and it may be that tethered by extraneous adhesion, or not so restricted, the hypermyotic heart may in the future and in some cases be provided with such by the genius and courage of some surgeon bold enough to undertake the task."

I was not aware when I wrote this passage, and indeed not until I read an interesting article on Some Points in the Pathology and Treatment of Adherent Pericardium by Professor Wenckebach of Groningen, which appeared in the pages of your contemporary the *British Medical Journal* (Jan. 12th, 1907), that all this had already been successfully done by surgeons acting under the inspiration of Professor Brauer of Heidelberg. The paper of the latter is published in Langenbeck's *Archiv für Klinische Chirurgie* (Vol. LXXI., 1903), and relates the result of the procedure in three cases. His patients were two men and a youth, aged respectively 50, 25, and 16 years. The principle of the operation undertaken was to provide the heart with more room to act in and less obstacle to pull against, and no attempt was made to open the pericardium or to break down possibly existent adhesions either within the sac or beyond the area of the external opening in the thorax which was made by the removal of ribs and cartilages and a portion of the sternum sufficient to allow of freer movement of the heart. In fact, there is nothing positive to show, notwithstanding the criteria of differential diagnosis given, that such adhesions existed, except that in the case of the man, 25 years of age, who died from influenza pneumonia ten months after decidedly beneficial operation, the pericardial sac was proved post mortem to be adherent to the heart. In Professor Wenckebach's case also, although

the diagnosis of adherent pericardium was made and the history warranted the diagnosis, costo-pericardial adhesions were not found and the sac was not opened. Nevertheless the result of allowing the hypertrophied heart more space to act in, and permitting it to gain that space through a non-resistant surface and not at the expense of the bone-bound thoracic contents, was decidedly beneficial. This is not the place to discuss the many interesting scientific questions which Brauer and Wenckebach raise in their papers, but I have mentioned the details given for this reason—namely, that Brauer's operation seems indicated, not merely in the comparatively rare cases of viscero-costo-pericardial adhesion, but also in the much commoner cases of hypermyosis of the heart with valvular lesion and without extraneous tethering.

The importance of a correct diagnosis, it appears to me, after reading Brauer's and Wenckebach's cases, is less as to whether we have actually to deal with adherent pericardium than as to whether we have to do with notable hypertrophy with or without dilatation, or with cases in which notable and persistent dilatation is the chief cause of a state which threatens the life of the patient. This is not always an easy matter to determine. For systolic recession of the interspaces may often be observed with a bulky heart which is untethered and which, from its very enlargement, is comparatively fixed in its extended area.

Thus, I had under my care last year at the Children's Hospital, Paddington Green, the case of a girl, 14 years of age, whose large, distressed heart with paradoxical pulse I regarded as one of adherent pericardium, but who improved so much under ordinary cardiac treatment as to render this supposition doubtful. She was indeed quite convalescent, but unfortunately contracted typhoid fever of a severe type and went through it for a month. At the end of that time she died exhausted but without notable retrograde stasis of the circulation, and at the necropsy her heart was found to be quite without hampering adhesions, and while hypertrophied and dilated not excessively so. It was a case of mitral stenosis. Even, however, should erroneous diagnosis in some cases lead to the operation of cardiomyolysis, as Brauer terms it, it is unlikely that the hypertrophied heart, judging from the results of the cases published, would be other than benefited by this procedure.

I must apologise, Sirs, for occupying so much of your space, but I consider the subject an important one, and it is one which has interested me for some ten years or so. I only blame myself for a conservative timidity which has prevented my putting these conclusions into practice sooner, and hope soon to have an opportunity of acting otherwise, in view of the results secured by Brauer and Wenckebach.

I am, Sirs, yours faithfully,

ALEXANDER MORISON.

Upper Berkeley-street, W., Jan. 28th, 1907.

TYPHUS FEVER IN TENERIFFE.

To the Editors of THE LANCET.

SIRS,—I have read with great interest the letter on this subject by Dr. W. H. Peile which appeared in THE LANCET of Jan. 26th. May I add the following? About a fortnight ago, whilst I was on board, the s.s. *Medio* called at the town of Santa Cruz, Teneriffe. She remained there 24 hours, but during that time no passengers were allowed to go ashore because of the existence of a few cases of typhus fever on the island. So far so good. The sanitary authorities of Santa Cruz, however, permitted dozens of semi-coloured hawkers to board the *Medio*. These hawkers, coloured, dirty, and repulsive, came aboard with fruit, silks, linens, &c. There is little doubt from what localities of Santa Cruz these people must have come—most probably from the fever-infested portions. Is this the usual way in which quarantine regulations are enforced?

I am, Sirs, yours faithfully,

Edinburgh, Jan. 25th, 1907. E. ACHER-BROWN, M.B. Edin.

MEAT DIET AND THE TEETH.

To the Editors of THE LANCET.

SIRS,—In a letter on this subject published in THE LANCET of Jan. 26th Dr. Edmund Spriggs gives a candid criticism on some facts and opinions which I presented at a recent meeting of the Pathological Society, and which were reported in your issue of Dec. 29th, 1906. As some of the statements

in this letter may have given your readers an erroneous impression both as to the facts and to the author's interpretation of them, perhaps you will kindly allow me to reply to his criticism.

Dr. Spriggs states that "in the specimens shown at the Pathological Society on Dec. 18th, 1906, a distinct difference was apparent between a tooth germ in the meat-fed and one in the bread-and-milk-fed animal. The section of the head of a meat-fed rat, thrown upon the screen in order to demonstrate the bone changes, showed a developing tooth which was not a normal one," &c. The first of these statements is correct; the second is entirely wrong. Dr. Spriggs having been led into error through an imperfect acquaintance with the fallacies involved in this department of histological work. As the point may be of some interest to future observers and can be more authoritatively dealt with by an expert, I have asked Mr. Gibbs to reply to Dr. Spriggs's comment on the histological appearances of the teeth.

My critic further writes: "At that meeting of the Pathological Society I suggested, as reported in THE LANCET of Dec. 29th, 1906, that Dr. Chalmers Watson was mistaken in ascribing many of the effects observed by him to a meat diet and that they were probably due to a deficiency of lime and other bases." In my reply to this criticism I pointed out that my communication was restricted in its scope to a demonstration of the structural changes which had followed the use of an excessive meat diet; it did not include the consideration of the causation of any of the changes observed. The experiments referred to by Dr. Spriggs in support of his contention that the deficiency of lime in the diet was the cause of the structural changes were well known to me, as were also other experimental data relevant to this subject. I had also considered the view that the deficiency of lime might be an important factor in the production of some of the changes but had refrained from forming any definite conclusion on this point, and, with all due deference to Dr. Spriggs's views, I am still of opinion that it is inadvisable to form any theory as to the causation of the structural changes until the investigation is more complete. I would like, however, to point out that the changes in the osseous system, which seem to have particularly attracted Dr. Spriggs's attention, are, in my opinion, among the least important of the structural changes demonstrated at my meeting.

The most important point in Dr. Spriggs's letter remains to be dealt with—viz., the statement: "Indeed, whether the results produced in rats are due to the want of lime and other bases or whether they are an expression of the failure of a naturally omnivorous animal to rapidly adapt itself to a purely flesh diet it is clear that they cannot be directly applied to the case of civilised man, who never in ordinary circumstances lives upon a diet of meat alone." This criticism raises an issue of very great interest and importance and with your permission I would like to answer it in some detail. Before doing so, however, I would like to feel assured that I correctly interpret Dr. Spriggs's position in regard to some facts relevant to the issue which were demonstrated at the meeting of the Pathological Society. Might I ask him whether there is, in his opinion, any essential difference between the histological appearances of the bones in the second generation of meat-fed rats and those of the bones of the infant aged 16 months, the child of a tuberculous subject who had been fed for a prolonged period prior to and during gestation on a diet containing a great excess of meat? Photographic reproductions of the actual slides shown at the meeting are given in a paper published in THE LANCET of Dec. 8th, 1906.

I am, Sirs, yours faithfully,

CHALMERS WATSON.

Edinburgh, Jan. 27th, 1907.

To the Editors of THE LANCET.

SIRS,—In reply to the first part of Dr. E. I. Spriggs's letter in THE LANCET of Jan. 26th, p. 252, I must express my surprise that he should come to any conclusions as to the histology of a tissue merely from seeing thrown on a screen a photomicrogram of a low-power magnification of an object which he had never examined under the microscope itself. Dr. Spriggs is also possibly unaware of the very great difficulties that beset the histological investigation at the same time of such fully calcified tissues as enamel and dentine and of the soft tissues immediately in contact with them. Owing to very great numbers of sections having to be cut and examined the paraffin method was the only practicable

one, the result being that a certain proportion of sections, so far as the dental tissues were concerned, had to be discarded owing to the very obvious artifacts they showed. I have re-examined *microscopically* the sections, photographs of which Dr. Spriggs saw on the screen, and it may interest him to know that for the purposes of the investigation both of these sections were rejected for this reason. I might also point out that in investigating such a difficult subject one does not draw conclusions from a comparison of any two sections but from a comparison of a very large number.

b) The photo-micrograms shown by Dr. D. Chalmers Watson were not from any of the three rats I referred to as having hypoplastic teeth; and, as stated in a previous letter, neither Mr. G. W. Watson nor I was able to detect any sufficiently constant variations in the tissues, hard or soft, to warrant us in concluding that there were any essential histological differences between the teeth of meat-fed and of bread-and-milk-fed rats. I am, Sirs, yours faithfully,

Edinburgh, Jan. 27th, 1907.

J. H. GIBBS.

THE PROPHYLAXIS OF CANCER AS INDICATED BY THE PARASITIC THEORY.

To the Editors of THE LANCET.

SIRS,—No one can have followed the progress of cancer research in this and other countries without being impressed with the vast extent of the knowledge which has been acquired in recent years, and yet he must also be impressed by the present limitations of that knowledge and must feel how little progress has been made in the matter of actual dealing with the disease. In the course of this research certain facts relating to cancer seem to have come into special prominence of late. To the writer, as an outside observer, these seem to be the following: (1) the widespread and almost universal distribution of cancer; (2) the extraordinary powers of growth exhibited by the cancer cells within the body; (3) the great vitality exhibited by these cells without the body; and (4) the ever-increasing evidence that in a large proportion of cases of cancer infection is by direct inoculation from without.

These facts seem to throw some light on those portions of the life-history of cancer which hitherto have lain in obscurity. Of one part of that life-history we know something. We trace the primary growth presumably from a single cell. This by its rapid growth soon becomes a tumour containing thousands of cells, each of which when carried away by the lymph or blood may become a secondary growth. Thus by the end of life one cell has become a million, and then with the patient's death they once more pass out of our sight. These facts to which I have referred seem, however, to indicate that the life-history of cancer does not end with the life-history of its host, but that long persisting in the bodies of the dead they may in all probability withstand the forces which destroy those tissues and in some resistant spore-like form become by slow degrees disseminated through the soil, carried by worms or birds, or by the deep water channels and thus account for the far-reaching distribution of the disease, its universality, and its widespread incidence. If this be so, it bears some analogy to the dissemination of tubercle bacilli, with their wide distribution in nature, their great resistant powers during extra-corporeal life, and their somewhat difficult "adhesion" to the human host, and their powers of growth when once they gain access to that host.

In the present argument the cancer cell is regarded as the infecting agent. This is generally admitted to be the case when dissemination takes place within the body and the effect of radical operation strongly supports this view. Evidence has been brought forward to show the extraordinary powers of resistance to chemical agents, cold, &c., of these cancer cells outside the body and the history of cancer-infected mice cages and of cancer houses is also in favour of their vitality being long maintained under such conditions. The primary incidence of cancer, so rarely on the lungs, but so commonly on external surfaces and again, at similar points where the blood stream might carry heavy organisms, such as a cell, which is very widely distributed in nature, and which may, though with difficulty, be inoculated from food, clothing, or other means of contact, but which is hardly ever air-borne. The difficulty of

inoculation bears resemblance to that of tubercle, only is much more marked. Once established, however, the powers of growth in the human body are far greater, but the tissue reaction excited is much less, this, again, being in favour of an infection due to some cellular organism closely resembling the body cells rather than to any extraneous micro-organism.

Finally, the contrast between the growth and multiplication of these cells within and without the body is most remarkable. Within we can trace the development from a single cell of the millions of cells represented by the secondary growths of "general dissemination." Without, while we have much evidence of the maintained vitality of the cancer cells, we know of no conditions under which they may continue to grow or to multiply. In the human subject we recognise that the virulence and infectivity of cancer vary in direct ratio to the rapidity of cell growth—in other words, to the number of cells. Is it not, therefore, reasonable to suggest that the widespread distribution of cancer is due to those myriads of cells committed to the soil with every patient dying from cancer, which subsequently by slow degrees become disseminated throughout nature?

Turning now to the question of the treatment of cancer, we feel that so far little progress has been made. No specific has yet been found and no antiserum has been obtained. Vaccine treatment in the case of mice seems to have given some result, but the difficulties of applying any such treatment to the human subject can readily be imagined and we still remain with only one cure—namely, early and complete excision. In recent years medical science has been increasingly occupied with the prevention rather than with the cure of disease. In the case of tubercle the importance of this is being more and more realised, as we see in the active crusade against the dissemination of tuberculous sputa and the efforts at isolation of advanced cases. No effort, however, seems to have been made to deal with that large source of tubercle bacilli which is found in the dead bodies of tuberculous patients which probably contributes largely to the distribution of the bacilli in nature. This may be of importance in tubercle, but from the arguments above brought forward is far more likely to be so in the case of cancer. Hence the writer would put forward a strong plea for an attempt at the prophylaxis of cancer, a goal which should not be unattainable if the above suppositions are correct. Granted this, the prophylaxis should be relatively easy, for in this case the great source of infection must be the bodies full of secondary growth which are committed to the soil at death, while other sources, such as cancerous discharges and infected excreta, are comparatively unimportant and easily dealt with.

The cancer cells are readily destroyed by heat, and thus if cremation of all those dying from cancer can be legally enforced the great source of the disease will be eliminated, and it is not unreasonable to hope that by such methods a gradual diminution in the frequency of the disease or even its ultimate eradication may be attained. The writer can lay no claim to any share in the work of cancer research which has been carried on with so much ability and perseverance, but having followed its progress with the deepest interest he ventures to bring forward those suggestions which have been prompted by the work of others.

I am, Sirs, yours faithfully,

H. V. WENHAM.

St. Bartholomew's Hospital, E.C., Jan. 23rd, 1907.

ELECTRIC LIGHT IN MARYLEBONE.

To the Editors of THE LANCET.

SIRS,—Your reference to the failure of the electric light in Marylebone within the past few weeks and your warning to surgeons undertaking to perform operations with the aid of artificial light within the limits of the borough to provide against the recurrence of such a contingency is extremely opportune. However, the statement that while such events are unusual in other parts of London they have been frequent in Marylebone since the council undertook the lighting is more open to question. As a user of electric light, both under the old régime and since it has been taken over by the borough, I am in a position to say which is the greater weekly occurrence. Indeed, the failures were so frequent that a deputation of medical practitioners waited upon the council and asked them to take some action to put an end to

the diagnosis of adherent pericardium was made and the history warranted the diagnosis, costo-pericardial adhesions were not found and the sac was not opened. Nevertheless the result of allowing the hypertrophied heart more space to act in, and permitting it to gain that space through a non-resistant surface and not at the expense of the bone-bound thoracic contents, was decidedly beneficial. This is not the place to discuss the many interesting scientific questions which Brauer and Wenckebach raise in their papers, but I have mentioned the details given for this reason—namely, that Brauer's operation seems indicated, not merely in the comparatively rare cases of viscero-costo-pericardial adhesion, but also in the much commoner cases of hypermyosis of the heart with valvular lesion and without extraneous tethering.

The importance of a correct diagnosis, it appears to me, after reading Brauer's and Wenckebach's cases, is less as to whether we have actually to deal with adherent pericardium than as to whether we have to do with notable hypertrophy with or without dilatation, or with cases in which notable and persistent dilatation is the chief cause of a state which threatens the life of the patient. This is not always an easy matter to determine. For systolic recession of the interspaces may often be observed with a bulky heart which is untethered and which, from its very enlargement, is comparatively fixed in its extended area.

Thus, I had under my care last year at the Children's Hospital, Paddington Green, the case of a girl, 14 years of age, whose large, distressed heart with paradoxical pulse I regarded as one of adherent pericardium, but who improved so much under ordinary cardiac treatment as to render this supposition doubtful. She was indeed quite convalescent, but unfortunately contracted typhoid fever of a severe type and went through it for a month. At the end of that time she died exhausted but without notable retrograde stasis of the circulation, and at the necropsy her heart was found to be quite without hampering adhesions, and while hypertrophied and dilated not excessively so. It was a case of mitral stenosis. Even, however, should erroneous diagnosis in some cases lead to the operation of cardiolysis, as Brauer terms it, it is unlikely that the hypertrophied heart, judging from the results of the cases published, would be other than benefited by this procedure.

I must apologise, Sirs, for occupying so much of your space, but I consider the subject an important one, and it is one which has interested me for some ten years or so. I only blame myself for a conservative timidity which has prevented my putting these conclusions into practice sooner, and hope soon to have an opportunity of acting otherwise, in view of the results secured by Brauer and Wenckebach.

I am, Sirs, yours faithfully,

ALEXANDER MORISON.

Upper Berkeley-street, W., Jan. 26th, 1907.

TYPHUS FEVER IN TENERIFFE.

To the Editors of THE LANCET.

SIRS,—I have read with great interest the letter on this subject by Dr. W. H. Pells which appeared in THE LANCET of Jan. 26th. May I add the following? About a fortnight ago, whilst I was on board, the s.s. *Medio* called at the town of Santa Cruz, Teneriffe. She remained there 24 hours, but during that time no passengers were allowed to go ashore because of the existence of a few cases of typhus fever on the island. So far so good. The sanitary authorities of Santa Cruz, however, permitted dozens of semi-coloured, hawkers to board the *Medio*. These hawkers, coloured, dirty, and repulsive, came aboard with fruit, silks, linens, &c. There is little doubt from what localities of Santa Cruz these people must have come—most probably from the fever-infested portions. Is this the usual way in which quarantine regulations are enforced?

I am, Sirs, yours faithfully,

Edinburgh, Jan. 26th, 1907. E. ARCHER-BROWN, M.B. Edin.

MEAT DIET AND THE TEETH.

To the Editors of THE LANCET.

SIRS,—In a letter on this subject published in THE LANCET of Jan. 26th Dr. Edmund Spriggs gives a candid criticism on some facts and opinions which I presented at a recent meeting of the Pathological Society, and which were reported in your issue of Dec. 29th, 1906. As some of the statements

in this letter may have given your readers an erroneous impression both as to the facts and to the author's interpretation of them, perhaps you will kindly allow me to reply to his criticism.

Dr. Spriggs states that "in the specimens shown at the Pathological Society on Dec. 18th, 1906, a distinct difference was apparent between a tooth germ in the meat-fed and one in the bread-and-milk-fed animal. The section of the head of a meat-fed rat, thrown upon the screen in order to demonstrate the bone changes, showed a developing tooth which was not a normal one," &c. The first of these statements is correct; the second is entirely wrong. Dr. Spriggs having been led into error through an imperfect acquaintance with the fallacies involved in this department of histological work. As the point may be of some interest to future observers and can be more authoritatively dealt with by an expert, I have asked Mr. Gibbs to reply to Dr. Spriggs's comment on the histological appearances of the teeth.

My critic further writes: "At that meeting of the Pathological Society I suggested, as reported in THE LANCET of Dec. 29th, 1906, that Dr. Chalmers Watson was mistaken in ascribing many of the effects observed by him to a meat diet and that they were probably due to a deficiency of lime and other bases." In my reply to this criticism I pointed out that my communication was restricted in its scope to a demonstration of the structural changes which had followed the use of an excessive meat diet; it did not include the consideration of the causation of any of the changes observed. The experiments referred to by Dr. Spriggs in support of his contention that the deficiency of lime in the diet was the cause of the structural changes were well known to me, as were also other experimental data relevant to this subject. I had also considered the view that the deficiency of lime might be an important factor in the production of some of the changes but had refrained from forming any definite conclusion on this point, and, with all due deference to Dr. Spriggs's views, I am still of opinion that it is inadvisable to form any theory as to the causation of the structural changes until the investigation is more complete. I would like, however, to point out that the changes in the osseous system, which seem to have particularly attracted Dr. Spriggs's attention, are, in my opinion, among the least important of the structural changes demonstrated at my meeting.

The most important point in Dr. Spriggs's letter remains to be dealt with—viz., the statement: "Indeed, whether the results produced in rats are due to the want of lime and other bases or whether they are an expression of the failure of a naturally omnivorous animal to rapidly adapt itself to a purely flesh diet it is clear that they cannot be directly applied to the case of civilised man, who never in ordinary circumstances lives upon a diet of meat alone." This criticism raises an issue of very great interest and importance and with your permission I would like to answer it in some detail. Before doing so, however, I would like to feel assured that I correctly interpret Dr. Spriggs's position in regard to some facts relevant to the issue which were demonstrated at the meeting of the Pathological Society. Might I ask him whether there is, in his opinion, any essential difference between the histological appearances of the bones in the second generation of meat-fed rats and those of the bones of the infant aged 16 months, the child of a tuberculous subject who had been fed for a prolonged period prior to and during gestation on a diet containing a great excess of meat? Photographic reproductions of the actual slides shown at the meeting are given in a paper published in THE LANCET of Dec. 8th, 1906.

I am, Sirs, yours faithfully,

CHALMERS WATSON.

Edinburgh, Jan. 27th, 1907.

To the Editors of THE LANCET.

SIRS,—In reply to the first part of Dr. E. I. Spriggs's letter in THE LANCET of Jan. 26th, p. 252, I must express my surprise that he should come to any conclusions as to the histology of a tissue merely from seeing thrown on a screen a photograph of a low-power magnification of an object which he had never examined under the microscope itself. Dr. Spriggs is also possibly unaware of the very great difficulties that beset the histological investigation at the same time of such fully calcified tissues as enamel and dentine and of the soft tissues immediately in contact with them. Owing to very great numbers of sections having to be cut and examined the paraffin method was the only practicable

allow his valet to pour out more, and ordered him to take it to me to see if I could explain the cause. A few simple tests soon told it was contaminated with copper. I observed the flask, which was made of copper, had been once "tinned" inside and silver-plated outside. The tin coating had all been eaten away and the copper walls could be easily seen. I advised the gentleman to procure a glass flask in future and he would be saved a like experience.

I am, Sirs, yours faithfully,

Exeter, Jan. 23rd, 1937

A. R. CLARK.

ADVERTISEMENT BY POST.

To the Editors of THE LANCET.

SIRS.—As an appendix to the history of the year which has just closed it may interest your readers to have placed upon record the number of advertisements the writer has received through the post during the last four years.

His name first appeared in the Medical Register and in Churchill's "Medical Directory" in 1933. The address given was just beyond the four-mile radius in the North-Eastern postal district of the metropolis—that is, it appeared to be that of an ordinary general practitioner and not of "a consultant." From the first it was decided to note down in a diary the actual number and the cost of the postage of the advertisements by post which were received during the year, for an early assurance was given (by post) that "a letter or post-card is the cheapest and most reliable traveller" and that "a halfpenny stamp is the best advertiser." The personal calls of agents, travellers, canvassers, and touts were not recorded. On very few occasions were proffered samples applied for. In each year August was the month when the fewest communications were received—namely, on an average, a dozen. The largest number was received at varying periods, thus: in 1933, December, with 30; in 1934, October, with 44; in 1935, May, with 46; and in 1936, March, with 52.

A rough classification of the nature of the advertisements was made; a few examples are appended. As was to be expected the very large majority referred to proprietary preparations, drugs, special food-stuffs, papers, medical publishers' circulars, catalogues, and price lists. Several of these were repeated monthly—this recurrent insistence and persistence was not confined to American advertisers. Very few peculiarly local advertisements were received and practically no begging letters. The fair fame of the record was tarnished for the first time during the very last week when a lottery prospectus was received despatched from Copenhagen. This year four technical diaries came to hand.

The following is a statistical summary:—

	1933	1934	1935	1936
Total advertisements received through the post	245	310	371	330
Spirits, wines, and tobaccos	19	10	20	37
Insurance societies' prospectuses	17	13	23	11
Samples (uninvited)	16	22	13	9
Nursing homes and retreats	12	14	15	14
Moneylenders	4	12	10	7

The figures for 1933 are abnormal as the register of names published in 1932 probably was used by advertisers in the early part of the following year. In addition to the figures given above for 1936 the following may be quoted: drugs, foods, &c., 150; papers and price lists, 74; mineral waters, spas, &c., 13 (chiefly in April); instruments, appliances, and other goods, 44.

The cost of postage was recorded during the last three years. The cost of the carriage of samples is not included and a few stamps from Italy, Switzerland, and Denmark are omitted.—In 1934: £1 2s. 0d.; 48 cents; 55 centimes; 30 pfennigs. 1935: £1 0s. 10d.; 40 cents; 95 centimes; 30 pfennigs. 1936: £1 0s. 6d.; 40 cents; 80 centimes; 50 pfennigs. This means that the revenue from such postage was about 25s. in the case of each medical practitioner to whom these advertisements were sent—a not inconsiderable sum when it is remembered that about 20,000 medical practitioners are registered as living in the British Isles. In the writer's experience, to have one's name in the

Law List induces very few advertisers to use the post office service for a similar purpose to that detailed above.

I am, Sirs, yours faithfully,

STANLEY B. ATKINSON.

Cawley road, N.E., Jan. 31st, 1936.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Slaughter of the Innocents.

THE frequent references to the mortality in young children from burning will perhaps be thought wearisome, but the cruelty of the death is so grievous and the loss to the nation is in the aggregate so great, that the question may well be asked again. Can nothing be done to check it? The city coroner, Dr. E. A. Gibson, made some strong remarks on it yesterday, when three cases of fatal burning had to be inquired into. Last week there were four, and there have been 14 since the beginning of the month. In addition "there are eight cases in the Manchester Infirmary practically at the point of death suffering from burns." Yesterday also an inquest was held on a child aged four years who was burnt to death at Warrington. The coroner, Mr. Brighouse, said that he had held 20 similar inquests since Nov. 6th. He remarked: "Material wealth was very well, but the wealth of the nation consisted in keeping its children alive." Oldham has added several cases of fatal burning to the total during the past few weeks and yesterday three more were notified to the borough coroner. Another case is reported from near Wigan, where a child aged 11 months was placed in a cradle before the bedroom fire and too near it. And yesterday also the Bury coroner received the report of the death of a girl aged ten years in the Bury Infirmary. On the previous Saturday morning she and a young brother were in the house alone. He fell off a stool in front of the fire, and in picking him up her flannelette skirts caught fire and she was fatally burnt. But danger is not confined to fire alone, for the same catalogue of slaughter includes the case of the young daughter of a labourer at Bradwell who was playing near the fire, her mother being absent, when a pan of boiling water fell on her and she was terribly scalded. This is a serious and shameful record, not standing alone, but one that might be repeated many times over from the country at large, yet, as Mr. Brighouse said, "so far the legislature was unmoved by the appeals of coroners and the Prevention of Cruelty Society." Dr. Gibson fears that the public do not realise the gravity of the question or something more would be done. There seems to be an agreement among coroners that the absence of fireguards is a frequent cause of these so-called accidents and they would have their use made compulsory. As Dr. Gibson says, "parents might be punished for not taking proper precautions to protect their children from fire, and people might be prevented from clothing their children in inflammable garments, particularly flannelette," which is especially dangerous in its ordinary state, though there are some varieties of it where the danger is greatly lessened. But the mothers look at the price of the material and prefer the cheap and dangerous to the safer if the latter is a fraction higher in price. As the laudable effort made by the Mayor of Huddersfield, followed, as it has been and seems likely to be, in other places, has been successful in largely reducing the infantile death-rate, something of the kind might be tried in order to save the children from death by burning. The plan does not appeal to the higher motives, but though it rests on the love of money rather than on the love of their offspring, the result is that the mothers take more care of their children than they did. It pays to keep them alive and a similar plan might serve the children as an insurance against fire.

Overlying.

Three cases of children being found dead in bed were inquired into by the city coroner a few days ago. In one case the mother said that the child was "apparently all right" when she went to bed early on Sunday morning, but later she had found it dead on her arm. She had had 15 children, of whom five died while babies. Inquests were held on two of them who were about a month old. The jury returned an open verdict on account of these inquests having been held, but the coroner said that it would facilitate matters

or mitigate what was described as a nuisance and a positive danger. One eminent surgeon went on to describe how a day or so previously, while he was performing a serious operation on a child, the light had suddenly gone out and how he had grasped the severed end of an artery between finger and thumb while with the other hand he groped for his waistcoat-pocket for a wax vesta to give some light while candles were being procured.

It was this that largely influenced me as a member of the borough council in supporting the proposal that the municipal authorities should take over the electric lighting of the borough. I am not defending them; they may have acted unwisely in the matter, but it is as well to remember that great pressure was brought to bear on them at the time by a large and important section of the consumers, including the surgeons in the district.

I am, Sirs, yours faithfully,

Thayer-street, Manchester-square, W.

M. C. WALSH.

AMYL NITRITE IN HÆMOPTYSIS.

To the Editors of THE LANCET.

SIRS,—Permit me to make a final reply to the last communication of Dr. Francis Hare in THE LANCET of Jan. 19th. I have not been guided by preconceived theories but by clinical facts respecting the hæmostatic action of amyl nitrite and references in the literature to such facts were cited in my last letter. Dr. Hare expresses correctly my theory of action of the drug in question. The fact that the drug is equally efficacious whether given intravenously, by the mouth, or by inhalation is no evidence in contravention of my theory. Chloroform whether administered by inhalation or through other portals is capable of exercising its narcotic properties, and like amyl nitrite may excite profound reflex phenomena by virtue of its local irritant action on the nasal mucosa. Such phenomena range from coughing to cardiac inhibition. Because the hæmorrhage following the removal of parovarian cysts and that of ectopic gestation is controlled by amyl nitrite is no evidence in refutation of my theory until it has been demonstrated that in the structures implicated there are no muscular fibres. Finally, respecting the vaso-motor hypothesis advocated by Dr. Hare in explanation of the mechanism of the asthmatic paroxysm, if the hypothesis in question were correct, then amyl nitrite would in its action fulfil the requirements of the old principle—viz., "*Naturam morborum ostendunt curatione.*" The fact is that amyl nitrite is rarely efficacious, even temporarily so, in inhibiting a paroxysm, and I believe that anyone who has used it for this purpose will substantiate my statement. The failure of action is evident. In asthma, as I have shown elsewhere, the longitudinal fibres of the bronchial musculature are enfeebled; hence the action of amyl nitrite is correspondingly diminished. In hæmoptysis the action of the drug is more forcibly expressed, inasmuch as we assume that the muscular tonicity of the bronchial musculature is not compromised.

I am, Sirs, yours faithfully,

Paris, Jan. 22nd, 1907.

DR. ALBERT ABRAMS.

THE TREATMENT OF CICATRICES.

To the Editors of THE LANCET.

SIRS,—I fear we do not give the attention to this subject that it deserves, both from the annoyance and disability occasioned by scars, especially adherent ones, and the great relief that may be afforded by suitable treatment. I thought these facts were pretty well understood, but two recent cases, both treated at large hospitals here, suggest that one may venture to draw attention to the subject again. In the first case a dock labourer had suffered an extensive laceration of the outer side of the leg and healing had left a scar two or three inches across. The scar was very thin, of a glazed surface, a bright red in colour, and so adherent to the underlying fascia that the patient was unable to follow his occupation owing to pain and lameness on movement. I introduced a tenotome beneath the skin and separated the cicatrix from the fascia beneath it completely, leaving no wound but the puncture of the tenotome. The man was kept up and by walking about and gentle movements of the skin further adhesions were prevented. He was soon able to resume work and the bright glazed skin became almost normal in appearance, though I confess that owing to the size of the cicatrix I feared sloughing would occur.

In another case a man had had the superficial flexor tendons of the forearm divided and the cicatrix in the skin covering the wound became adherent to the tendons and fascia over an extent of some three inches. He was unable to bend his fingers in the slightest degree on his discharge from hospital. He then presented himself at another of our largest hospitals and was subjected to prolonged treatment, so he says, by elaborate mechanical appliances. Being still unable to flex his fingers and his hand being entirely useless he came to the Bootle Borough Hospital and begged that the hand might be amputated, so that he might replace it with a more useful hook. I declined to oblige him but separated the scar subcutaneously from the tendons beneath it. This, with a subsequent freeing of fresh adhesions by my house surgeon, has enabled him to flex his fingers to such an extent that he is able to get a slight grasp with them, powerful as far as it goes, and to do his work.

I have drawn attention to these cases because they had both been under hospital treatment and had both been discharged suffering from serious disability that was readily overcome. It appears as though we were neglecting some old teaching on the treatment of cicatrices. We should do well to remember how much can be done for these cases and where unsightliness is the only difficulty how astonishingly the damaged skin may regain a normal appearance when separated from adhesions that strangle, rather than develop, its blood-supply.—I am, Sirs, yours faithfully,

Liverpool, Jan. 21st, 1907.

GEORGE A. HAWKINS-AMBLER.

SPIROGRAPHS OR NASAL "BREATH PICTURES."

To the Editors of THE LANCET.

SIRS,—Under the above heading Dr. Wyatt Wingrave in his letter in THE LANCET of Jan. 26th, p. 253, described a spiograph made of vulcanite designed to test the degree of actual or relative nasal patency. Aqueous vapour exhaled through the nostrils is condensed on the cool surface of the vulcanite and a fleeting "breath picture" thus obtained, which may be temporarily fixed by lightly powdering the surface with calcined magnesite or fine starch.

It may be of interest to describe the pneumodograph, designed by Courtade of Paris, by means of which he obtains permanent records of the degree of respiratory nasal sufficiency. The instrument consists essentially of two sufficiency. The instrument consists essentially of two plates of glass, graduated in squares, fixed at right angles to each other, T, by means of detachable catches. One plate of the pneumodograph is held horizontally against the upper lip a short distance below the nostrils, consequently the other plate hangs vertically downwards a few inches in front of the mouth. The patient is asked to breathe several times in the manner habitual to him. Condensation of aqueous vapour on the horizontal plate records the degree of nasal patency and a similar condensation on the vertical plate indicates the presence and degree of buccal respiration. Taken in connexion with one another the two spiographs may be used as a practical test of nasal respiratory sufficiency in any particular case, which is often a more useful factor than the degree of nasal patency alone. Permanent records are readily made by pressing sheets of paper specially impregnated with safranin on the surface of the glass plates, the pink colouring matter being liberated by the condensed aqueous vapour. Courtade's pneumodograph is made by Collin of Paris and can be obtained in London through Messrs. Mayer and Meltzer.

I am, Sirs, yours faithfully,

Birkdale, Jan. 23th, 1907.

ALFRED ERNEST BURROUGHS.

THE ACTION OF POTABLE SPIRITS ON METAL.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Dec. 29th last, p. 1821, I observe you have a note on brandy being contaminated with copper. Might I be permitted to mention that I had a flask with whisky sent me by a sportsman some years ago? The flask had been filled and was daily carried to the moor, but no occasion had arisen for using the contents for over two weeks, and when the valet was in the act of filling a glass the colour was observed to have changed and had become turbid and dark. The gentleman would not

about three times as many men as women in the institutions, but it is satisfactory to note that the number of children coming under the care of the guardians is diminishing. The pressure on the accommodation is so great that as a temporary expedient the guardians have taken on lease a large factory in the neighbourhood of the workhouse in which they intend to provide accommodation for some 250 paupers. The absolute necessity for this is shown by the fact that there are at present 818 inmates in the workhouse alone, which is 311 above the number which it is officially certified to accommodate.

Jan. 25th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Ayr District Asylum.

Dr. O. O. Easterbrook, the medical superintendent of this asylum, makes in his annual report some comments on insanity which are of more than local interest. He discusses very fairly the question as to the increase of insanity in Scotland. He deducts from the number of total admissions patients who had been in the asylum previously; also patients who had been transferred from other institutions or from their own homes who had formerly been certified. In this way a total admission of 137 is reduced to 110. Of the 110 admissions 27 had suffered from one or more previous attacks for which they had been certified but from which they had recovered. The remaining 83 persons represented those who had been certified as insane and placed under control for the first time. This bears out the statement of the central lunacy authorities that the number of persons placed on the register of the insane for the first time in their lives is year by year not increasing to a greater extent than can be accounted for by the increase of population. Under the causes and kinds of insanity stress is laid on the observation that in no instance could there be excluded, prior to the actual attack of insanity, the existence of a morbidly reacting brain in the patient, the outcome of faulty inheritance, or of faulty modes of living, or of previous disease experiences, or of these combined. Specially important was the evidence afforded by the temperaments of the patients; thus it was often found that persons who had become insane had been known as "queer," or "funny," or "peculiar," and Dr. Easterbrook accentuates the necessity of recognising these and other manifestations as indications of a temperament which supplies a soil favourable to the cultivation of insanity. He holds that persons with such abnormal reactivity might be wholly or largely prevented by intelligent observation and careful upbringing from becoming insane. Such persons being potential subjects for psychoses or neuroses must so far as is within their power avoid all causes which will tend to throw an undue stress on their nervous system, and must live more quietly and more carefully than their fellows if they would avoid a breakdown. He also does not share the view that insanity is to be looked on as a toxæmia; he evidently looks more at the constitutional factor as providing the favourable conditions for the action of the toxin. It is further to be noted that all new cases are admitted to, and kept under treatment in, the hospital department where rest and fresh air as well as medicinal treatment are much relied on for their curative influence.

Infirmaries and the Working Man.

In the *Glasgow Herald* of Jan. 28th a very interesting article contributed by a special correspondent appears on the duty of the working man towards the upkeep of the infirmaries in Glasgow. With reference to the £300,000 still required for the rebuilding of the Royal Infirmary, it is suggested that the managers need not look to the present body of annual subscribers or to the middle class as a whole, but that this burden should be undertaken by the working classes. The first argument brought forward is that the middle classes have already contributed to the Glasgow infirmaries far more than their share for building, endowment, and current expenses. Again, the working classes are liable to forget that the general hospitals exist almost exclusively for them, their families, and dependents. The writer goes on to prove that the working man is able to do much more in this direction than he has hitherto done. Quoting from the last report of

the Chief Registrar of Friendly Societies, it appears that the accumulated funds on Dec. 31st, 1905, of the working classes in their several building societies, friendly societies, co-operative societies, trade unions, and other similar thrift societies, and the Post-Office Savings Banks were £402,256,600, a capital fund reported to be increasing at the rate of £14,000,000 per annum. If it be allowed that one-half of the amount in the Post Office Savings Banks, or £82,800,000, belongs to the middle class, the invested funds amount to £319,456,600, of which Scotland's share (based on population) would be £31,000,000, yielding an income of not less than £1,000,000. Thus no great drain upon the invested capital would be made should the £300,000 still needed for the Royal Infirmary be taken from it and the amount could easily be spread over four years. Finally, it is pointed out that the purely sectional legislation of the last session of Parliament, as indicated in the Trades Disputes Act, the extension of the Workmen's Compensation Act, and the Free Meals for School Children Act, all of which were promoted directly by the Labour Party and cast heavy burdens on the middle-class community, is being answered by a feeling that upon emergency the working classes must be left to find more for themselves.

Jan. 29th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Royal College of Surgeons in Ireland.

THE annual dinner of the Royal College of Surgeons in Ireland took place on Jan. 26th, when the Lord Lieutenant was present and delivered an interesting speech in which, however, he did not commit himself to any party political opinions. He expressed his admiration of the outgoing Chief Secretary, Mr. Bryce. The Attorney-General also spoke of the high qualities of Mr. Bryce and his regret that he was obliged to leave Ireland after such a short term of service. General Lord Grenfell said that he should like to say a word about the Army Medical Department and to express his gratitude to those physicians and surgeons who had given such assistance to it by their advice and example. Before the dinner the honorary Fellowship of the College was formally conferred on Mr. J. Priestley Smith, professor of ophthalmology in the University of Birmingham. It will be remembered that the present President of the College, Mr. H. R. Swanzy, is himself a distinguished ophthalmologist and author.

Cerebro-spinal Meningitis in Belfast.

Four children in one family having succumbed to a toxæmia in the course of 24 hours, an inquest was opened at which Professor W. St. Clair Symmers made a provisional diagnosis of cerebro-spinal meningitis. Other cases have since been reported and considerable apprehension is felt in the city. To-day (Wednesday) 29 cases are reported with fatal issue in 17 of them. There is fear in Dublin lest the epidemic should visit the capital and increase its present very high death-rate. No cases have been reported there, however, and there have been none in Dublin since 1900.

The Consumption Problem in Belfast.

At the last meeting of the public health committee the chairman gave an outline of a projected preventive scheme, when the Lord Mayor (the Earl of Shaftesbury) urged that it was a most important question and hoped it would come before the council at an early date on the recommendation of the committee. A special meeting of the public health committee is to be held with a view of preparing a recommendation to the corporation on the question.

The Irish University Question.

On Jan. 25th Mr. Bryce, M.P., who was then still Chief Secretary for Ireland, delivered a most important speech in which he outlined the scheme which the Government proposes to bring forward for dealing with the problem of university education in Ireland. Practically Mr. Bryce accepts the recommendation of the Lord Chief Baron and four other Commissioners, as contained in Note 2 to the report of the Trinity College Commission. He proposes to make Dublin University the natural parent university for the whole country, and that Trinity College, Dublin, Queen's College, Belfast, Queen's College, Cork, and a new college in Dublin shall be the constituent colleges of the University. The new national university and the new

if they would say whether death was due to suffocation or to convulsions, so the jury later returned a verdict of death from convulsions due to natural causes. How the verdict was arrived at is not mentioned, but perhaps they as well as the coroner thought matters should be facilitated. It is not improbable that if the mothers were sufficiently bribed there would be fewer cases of "overlying."

Plomaine Poisoning at Wigan.

There have been considerable excitement and anxiety lately at Wigan on account of a sudden outbreak of sickness. It appears that 30 or 40 people were taken ill on one day and many more since, so that about 100 people have suffered. Meat bought at one particular shop is suspected. Analyses and bacteriological investigations are being carried out, but no authoritative statement has been made as to the cause of the outbreak, though it is generally attributed to plomaine poisoning.

Bad Meat: Butchers sent to Prison.

A serious case of having in possession diseased meat for sale came before Mr. Yates, K.C., the stipendiary magistrate, at the county police court on Jan. 21st. Three butchers, two of Gorton and one of Ardwick, were summoned for being "in possession of meat deposited for sale and unfit for food." Dr. A. W. Martin, medical officer of health of Gorton, stated that he inspected the meat with Mr. Ingram, veterinary surgeon, and the right hind- and fore-quarters of a beast were condemned and removed. When Longden, one of the Gorton butchers, was asked by Mr. Holburn, chief veterinary surgeon to the Manchester corporation, for the other quarters he said that he had not got them and that he bought the meat from a man on the road. The quantity destroyed was 6½ hundredweights. Dr. Martin said that the meat was dropsical, of an unhealthy pale red colour, and there was extensive general tuberculosis. This meat had not been to the corporation abattoirs where it would have been seen. It seems that this man Longden is a "alnk butcher" in rather an extensive way, for the sanitary inspector to the Bucklow district council, Cheshire, found at the quiet village of Mobberley a building used as an unlicensed slaughter-house by Longden in which were four sides of beasts which were destroyed as unfit for food. The position of this man seems to be well known, one of the police sergeants saying that he did an extensive business in the district. This does not speak well for the farmers who have dealings with him. Mr. Yates characterised the case as a very bad one which a fine would not meet. The chief offender was sent to prison for three months, the second defendant, a brother, for one month, and the third man, against whom there was no evidence that he had dressed the meat, was discharged. It is satisfactory that at last a case has been followed up and that the offenders have gone to prison instead of merely paying a trifling fine.

Cotton Districts Convalescent Fund.

It seems a far cry to the days of the American Civil War and the cotton famine resulting from it that caused such widespread distress through the manufacturing districts of Lancashire. But a meeting of the governors of the Cotton Districts Convalescent Fund held on Jan. 25th reminds us of what was not only a gigantic and most beneficent scheme, but one which was carried through with enduring energy and devoted patience. Many of the chief actors are gone but some remain, among whom is Earl Egerton of Tatton, whose resignation of the chairmanship of the board was received with much regret. The Earl of Derby was elected chairman for 1907. When the cotton famine was over the funds remaining were devoted in great part to the convalescent hospitals of Southport and Buxton, and an active interest is taken in those institutions. During the past year 2933 patients were sent to these hospitals at a cost of £5219, against 2896 sent at a cost of £5506 in the previous year.

Jan. 29th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

Appointments at the General Infirmary.

At a meeting of the governors specially summoned for the purpose Mr. W. H. Brown, who recently resigned his position as surgeon to the institution, was elected an honorary consulting surgeon. This position entitles the holder of it to the use of six beds in the infirmary and is one which

falls without special election to those who have served the institution as members of the full staff for a period of 20 years, or who while acting in that capacity have attained the age of 60 years. As Mr. Brown's resignation was determined by ill-health it required a special meeting of the governors to entitle him to his new post, and that they have carried out the recommendation of the board in making the election is a source of pleasure to his colleagues who may confidently hope that his health will improve with his relief from the more strenuous of his infirmary duties. Mr. Joseph F. Dobson was on the same day elected honorary assistant surgeon to the infirmary. His appointment will cause a vacancy in the position of honorary assistant surgeon in charge of the two semi-convalescent hospitals which he has held for about two years. At a meeting of the faculty the following resident appointments were made: Mr. J. B. F. Wilson was appointed house physician to Dr. T. W. Griffith, Dr. M. G. L. Walker, house surgeon to Mr. E. Ward, and Dr. F. G. Dobson to Mr. R. L. Knaggs.

Appointments at the University.

Some time ago the increase in the amount of bacteriological work, which was carried out at the medical school on behalf of the various county councils, necessitated the appointment of an additional demonstrator most of whose work was in that department. Dr. R. D. Smedley who held the position having been appointed demonstrator of pathology and bacteriology in the University of Sheffield, the council has appointed Dr. Myer Ooplans as his successor, who has begun his duties as demonstrator of bacteriology. The council has also appointed Dr. Charles Porter as honorary demonstrator of public health. Dr. Porter holds the position of assistant medical officer of health of the city of Leeds. Dr. J. S. Cameron is, of course, professor of public health in the University, as well as medical officer of health of the city. The easy coördination of work which arises from this enables great facilities to be put in the way of medical students or those attending classes for the Diploma of Public Health for the study of matters dealing with municipal sanitation.

Meeting of Sanitary Inspectors.

Under the chairmanship of Mr. T. Pridgin Teale, the President, an interesting meeting of the north-eastern centre of the Sanitary Inspectors' Association has lately been held in Leeds. Mr. F. S. Sharp read an instructive paper on Ancient and Modern Methods of Constructing and Testing Drains. He laid it down as an important principle that drains should be of the smallest diameter that was consistent with the amount of work which they had to do and to secure thorough scouring there should be a proper fall. He was a warm advocate of the water-test for drains in all cases where it could be carried out thoroughly. The President referred to times well within his recollection when the system of drainage in Leeds involved the lifting up of a flag in the cellar kitchen and the removal of black sludge in buckets. The drains were of the old-fashioned brick-built character. He referred to the recent excavations in Crete, where in what was taken to be the Palace of Minos terra-cotta pipes with flanges were found, which seemed to indicate that the water-carriage system had been employed so long as 4000 years ago and that sanitary matters were in this respect in a more advanced condition than they were at Windsor Castle at the beginning of the last century. Mr. Teale also said he was glad to learn that the building clauses committee and the sanitary committee of Leeds now worked in harmony and that their work was coördinated. The writer of this paragraph has some experience of the former state of affairs and the result of this was that in his house a soil pipe of some three and a half inches diameter was fitted into a drain pipe of six inches instead of into one of four or four and a half inches in diameter with, as a consequence, a joint which was imperfect.

Overcrowding at the Workhouse.

During the last 20 years the amount of pauperism in the Leeds union has steadily increased. In 1887 the returns showed that on Jan. 1st the total number of inmates of the workhouse and of the infirmary attached thereto was 874—383 in the former and 491 in the latter. The numbers for Jan. 1st of the present year are respectively 832 and 838, a total of 1670, an increase of nearly 100 per cent., and an increase out of all proportion, of course, to that of the population. There are

Handbook of Obstetrics embodying his personal experience. More recently he published a treatise upon midwifery in collaboration with his pupil, Dr. Demelin, and finally he wrote a most interesting book "The Nursing," in which may be found an account of his admirable and patient researches into the hygiene and treatment of infants. An English translation of this work has just appeared. Professor Budin was, with M. Strauss, the founder of the League against Infantile Mortality, and was the first to institute consultations for nurslings (*consultations de nourrissons*) in the hospitals. He has left behind him the reputation of an indefatigable, scrupulous, and patient worker, and an admirable professor of his science. His rectitude, the soundness of his teaching, and his deep sympathy with and tenderness towards his patients combined to make him one of the best respected and loved professors of his day.

Jan. 28th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Medical Practice Abroad.

Dr. J. Schwalbe, the editor of the *Deutsche Medizinische Wochenschrift*, has recently drawn attention to the fact that medical practice abroad tends to become more and more difficult for German medical men in consequence of restrictions imposed by foreign legislation. In the United States of America, for instance, 20 years ago the majority of the States admitted foreign practitioners without an examination and almost without any formalities. At present, however, an examination is required nearly everywhere in America and a licence must be obtained. In the French part of the Riviera where formerly medical men of all countries resided, to the great advantage of foreign visitors, the strict application of the French law of 1892 has induced the foreign medical men to leave with the exception of a few who were there previously to the enactment of the law. Also in Italy the Santini party endeavour to deprive foreign practitioners of the right which they have hitherto had of practising among their countrymen. More than 100 German medical men residing in the Riviera would thus be obliged either to obtain Italian qualifications or to give up their practices. Dr. Schwalbe therefore proposes to mitigate these drawbacks by international treaties of reciprocity in which the states concerned would agree to a mutual recognition of diplomas. Similar conventions exist in certain Swiss cantons and between Italy and England. Moreover, Germany and some of its neighbouring countries also recognise the diplomas of medical men residing in frontier towns, but of course only for practice in the frontier districts. It has been argued that if such treaties were concluded foreign medical men would be induced to settle in Germany, but this argument is obviously erroneous. Apart from the difficulty of the language the overcrowding of the profession in Germany would certainly prevent foreign medical men from seeking their livelihood there. It would be only in some watering-places and health resorts frequented by foreign patients that foreign medical men would have a chance of prospering to the detriment of the German local practitioners, but this they are at the present time quite at liberty to attempt under existing legislation, provided always that they are careful not to assume a medical title by which patients may be induced to believe that they are duly qualified in Germany. The suggestion of Dr. Schwalbe that Germany should follow the example afforded by the arrangement already made between Italy and Great Britain is therefore very reasonable.

Insanity in the Russian Army during the Russo-Japanese War.

In the *Russische Medizinische Rundschau*, a medical journal in the German language, edited by Russian medical men and issued in Berlin, a paper by Dr. Borischpolski deals with the subject of insanity among the Russians engaged in the war with Japan. Dr. Borischpolski, who was attached to a military hospital at Harbin, blames the inadequacy of the preparations made by the Russian war department for the care of the sick and wounded soldiers. Owing to the absence of an effective system of organisation medical officers sent from Russia to the seat of war had to stay for months at Harbin or Chaborovsk without occupation. After the great battles five or six army medical officers had

sometimes to attend 700 wounded, whilst a few miles further away there were numerous surgeons with little or nothing to do. The possibility of the occurrence of mental diseases was never considered, although numerous cases of insanity had been observed during the military operations in China. At the beginning of the war the insane were kept in the military hospitals among the other soldiers and were under the care of medical men without special knowledge of mental diseases. Insane officers were, for instance, placed in the syphilitic department of the hospital. In course of time the number of insane increased so much that in the summer of 1904 two houses were specially fitted up for them, one house for officers and the other for soldiers, where the patients were better attended and cared for than in the general hospitals. Until December, 1904, when the care of the insane was left to the Russian Red Cross Society, 111 officers and 289 soldiers were conveyed to the provisional lunatic asylum. As there was room only for 30 patients they had to be sent home very soon, whilst quiet cases were conveyed to other hospitals. Until December, 1904, there were 263 patients sent home in batches of 30 to 35 men. The patients travelled on the railway at first in ordinary passenger carriages but afterwards in carriages fitted up with bars and gratings for the conveyance of prisoners. The journey as far as Irkutsk, the capital of Siberia, required from three to four weeks. A statistical table shows that alcoholic psychoses and progressive paralysis were the more frequent mental diseases in the army; also traumatic psychosis, epilepsy, dementia, and hysteria were frequent among the lunatics.

The Congress of Internal Medicine.

The German Congress of Internal Medicine will meet this year at Wiesbaden, Professor von Leyden being in the chair. The official subject of discussion is the treatment of neuralgia and Professor Schultze of Bonn will read the introductory paper. Other subjects already announced are: Chronic Poisoning by Manganates, by Professor Jaksch of Prague; the Present State of Percussion of the Heart, by Professor Trempel of Frankfurt; and the Coronary Circulation and the Heart Muscle, by Dr. Hirsch and Dr. Spalteholz of Leipzig. The Congress will meet from April 15th to 18th.

Jan. 28th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Foreign Medicines.

THE pharmaceutical interest outside Italy is directly struck at by an ordinance just issued from the Direzione Generale di Sanità prohibiting the introduction into the Italian kingdom of all medicines prepared in foreign countries. The motive of this measure is officially stated to be the "protection of public hygiene" and the "desire to obtain for our own products of a similar kind a more favoured treatment abroad." This prohibition, the ordinance hastens to add, is "not absolute but relative," since medicines of foreign preparation will be allowed to come into Italy if the Direzione di Sanità shall have previously been notified as to their composition. In terms of this proviso the Customs houses at the frontier will have the right to examine the medicine or medicines seeking a market in Italy. The result would seem to be that, having obtained from the Italian Government "il brevetto di privativa" (certificate of special privilege), the foreign pharmacist may be relieved of any further obligation to disclose the composition of his medicines if sold in Italy. In any case the preliminaries cannot but be vexatious, if not costly; indeed, the ordinance is of a piece with the attempt, so often renewed of late years, to deprive the non-Italian, particularly the English-speaking, practitioner of the right to exercise his profession in Italy unless provided with an Italian diploma.

Honours to Camillo Golgi.

On Jan. 23rd the Aula Magna of the University of Pavia was thronged with students, past and present, the academic authorities, the magistracy, communal and municipal, and representatives of the various civic interests to witness the bestowal on Professor Golgi of an illuminated parchment setting forth the congratulations of his pupils on his having been awarded the Nobel Prize for pathological research.

Dublin college for Catholics are to be undenominational in their constitution. The scheme, which seems on paper a bold and broad-minded one, has on the whole been received favourably, but, of course, everything will depend on the details, such as the functions and powers of the Senate and the amount of autonomy enjoyed by the federated colleges.

The Cork Sanatorium Project.

The Cork sanatorium board decided on selecting a site at a place called Myshall, about 12 miles from Cork. The Tullip river, which is a tributary of the Lee, runs through the grounds. One of the city medical men wrote to the newspapers pointing out that the Cork water-supply is derived from the Lee and that if the patients at the sanatorium carelessly expectorated into the river there would be danger that consumption would be spread among the citizens. Professor E. J. McWeeney, bacteriologist, Dublin, wrote in reply, practically asserting that there would be no such danger. The corporation became alarmed and appeared by counsel at the Local Government Board inquiry held last week. The proceedings extended over four days and attracted considerable attention. Dr. O. Theodore Williams of London gave evidence expressing general approval of the site. Mr. Fairley, engineer, of London, described the methods which it was proposed to adopt for the disposal of the sewage and said that the effluent might be safely discharged into the Tullip river. Professor McWeeney, in his evidence, stated there was no danger to be apprehended from the sewage. He did not think there was much chance of the citizens of Cork being injuriously affected by the patients expectorating into the river. In the course of cross-examination he stated that tubercle bacilli can live in river water, but not for an unlimited time, and that it would be highly dangerous to drink a tumbler of water into which a consumptive patient had expectorated. Dr. A. E. Moore, lecturer on bacteriology at the Queen's College, Cork, in the course of his examination said he disapproved of the effluent being conveyed into the river and pointed out how the arrangements for purifying the sewage might break down with the result that intestinal tubercle bacilli could find their way into the river. He considered the fact of the patients expectorating into the river would be a distinct source of danger. Dr. A. R. Parsons of Dublin, visiting physician to the Newcastle Sanatorium, and Mr. F. K. Edinger, superintendent of Ootswold Sanatorium, considered the site unsuitable for a sanatorium. Amongst other witnesses examined were three Cork medical men and two of the Cork engineers. The value of sanatorium treatment was discussed. There was a very strong bar and from a scientific point of view the proceedings were extremely interesting. The decision of the Local Government Board is awaited with some apprehension and the citizens, apart entirely from the question of danger, regard with repugnance the idea of establishing a consumptive sanatorium on the bank of a river which provides their water-supply. It is believed that if the decision of the Local Government Board should be in favour of the Myshall site the Cork corporation will appeal to a higher tribunal.

Jan. 30th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of Pre-Sclerosis.

M. Huchard made a communication upon the above subject to the Academy of Medicine on Jan. 15th, and the occasion was notable not only on account of the importance of the subject and the position of the reader of the paper but also because it gave rise to a most interesting discussion among those leaders of the French medical profession who have studied the subject. M. Huchard began by saying that by the name pre-sclerosis he meant the clinical period which is characterised by arterial hypertension more or less pronounced, without, however, any definite arterial lesion. Hypertension preceded vascular lesions and was not consecutive to them. It is caused above all by poisons derived from the digestive system which act upon the coats of the vessels, upon the medulla which is the regulator of the heart, and also upon the kidney, which the passage of these poisons irritates so that it becomes less permeable than it ought to be. Hypertension thus having come into existence the arteries take on

a certain compensatory hypertrophy, as does every organ which is forced to do greater work than the normal. Arterial sclerosis is thus brought about which is extremely difficult to cure, although the stage of pre-sclerosis is very accessible to treatment. Among agents for lowering the arterial tension M. Huchard pointed out that the chief were the nitrites and the serum of milk or the lacto-serum of Blondel, massage, muscular exercises, carbonic acid baths, the "cure" carried out at Bourbon-Lancy, and the use of high-frequency currents, but these last, said M. Huchard, apparently only bring about a temporary improvement. Finally, the diet must be carefully attended to. M. Lancereaux, M. Hayem, and M. Ohantemesse could not altogether agree with M. Huchard's opinion upon the mechanism of the production of arterial sclerosis, for they considered that it was very often anterior to the hypertension. M. Huchard replied that if the arterial lesions existed at the commencement of the hypertension they were only extremely slight and impossible to diagnose in the living body. M. Albert Robin said that he was able to confirm on all points the researches of M. Huchard who, he considered, had brought about a veritable revolution in the treatment of morbus cordis and diseases of the blood-vessels, and the effects of these researches were much more widespread than was generally thought. Certain cases of dyspepsia, for instance, occasionally present crises of hypertension and the dyspepsia can only be cured by treating the hypertension. Moreover, added M. Robin, the question whether the arterial lesions are cause or effect matters very little. The essential point is that the treatment advocated by M. Huchard incontestably causes the disappearance of the hypertension, and with the disappearance of this the arterial sclerosis also disappears.

Hygiene and the Prevention of the Freezing of Drinking Water.

General Jourdy, the new Governor of Verdun, having in his inspection of barracks noticed that the standpipes were covered up with manure to prevent them from freezing, came to the conclusion that there was great danger of contamination of the water from this practice. He has therefore issued an order that only clean materials of vegetable or animal origin shall be used for the purpose, such as straw, sawdust, shavings, rags, or hair, which must previously to being used be conveyed to the hospital, there to be sterilised.

Wound of the Heart by a Foil; Suture; Recovery.

At a meeting of the Society of Surgery held on Jan. 9th M. Quénu, on behalf of M. Baudet, read the account of the case of a man, aged 25 years, who was wounded in the fifth left intercostal space by a thrust with a foil. M. Baudet turned up a flap of the thoracic wall and found a small wound in the heart. This was sutured and the flap being replaced the wound was dressed without any drainage. At the end of 12 days the patient was well.

The Treatment of Tuberculosis by Marmorek's Serum.

At a meeting of the Academy of Medicine held on Jan. 15th M. Charles Monod gave an account of some researches which had been carried on since 1903 by various physicians, mainly in foreign countries, upon the treatment of tuberculosis by Marmorek's serum. It appeared from the results of the inquiry that the serum at any rate did no harm and that in many cases good had resulted from its use, especially in cases of surgical tuberculosis. The most favourable reports had been sent in by Lewin in pulmonary tuberculosis and by Hoffa and van Hueller in surgical tuberculosis.

Death of Professor Budin.

Professor Budin died on Jan. 22nd at Marseilles, succumbing to an attack of pneumonia contracted while visiting that town for a conference of the League against Infantile Mortality, of which body he was the president. He was born at Enancourt-le Sec (Oise) on Nov. 9th, 1846, and was therefore just over 60 years of age. In 1871 he became interne des hôpitaux, Paris, and nine years later agrégé to the Faculty of Medicine in the University. In 1888 he was elected to the Academy of Medicine, and in 1898 he succeeded his distinguished master, Professor Tarnier, as professor of clinical obstetrics in the University. His scientific, practical, and literary work has been very inclusive in the direction of midwifery and the care of the newly born. He completed Tarnier's classic "Traité des Accouchements," and in 1886 published an important

In Toronto he attended meetings of the medical profession on three occasions, on one of which at the Ontario Medical Library he unveiled a portrait of the late Dr. James E. Graham, formerly professor of medicine in the University of Toronto and one of the most distinguished physicians whom this continent has ever produced. This portrait was a present to the library by the widow and the son, Dr. J. S. Graham of Toronto.

The Toronto Board of Trade and Tuberculosis.

The Toronto Board of Trade has protested to the Government of the Dominion of Canada against admitting into Canada immigrants already the victims of tuberculosis, stating that the immigration inspectors are lax in their duties. The board bases its charge on the facts as secured from the Muskoka Free Hospital for Consumptives and from the Toronto Free Hospital for Consumptives at Weston, Ontario. At the former institution, out of 243 patients treated in the last hospital year, 83, or one-third, were of foreign birth, and an analysis of these individuals' cases shows that a goodly proportion of these left their homes already the victims of the disease. The board requests the Government that steps should be immediately taken to prevent embarkation for Canada of any emigrants suffering from any pulmonary or contagious diseases.

The Canadian Militia Medical Service.

Lieutenant-Colonel G. Carleton Jones, M.D. (Halifax, Nova Scotia), has been appointed Director-General of the Army Medical Service of the Canadian Militia at Ottawa, to succeed Lieutenant-Colonel Fiset who has been made deputy minister of militia. Lieutenant-Colonel H. S. Birkett, M.D., A.M.O. (Montreal), has been appointed principal medical officer of the Quebec Command, vice Dr. O. W. Wilson resigned. Lieutenant-Colonel and Hon. Colonel George Stirling Ryerson, M.D. (Toronto), has been transferred to the reserve of officers. Lieutenant-Colonel A. B. Osborne, M.D. (Hamilton, Ontario), has also been transferred to the reserve of officers. Major A. N. Hayes, M.D. (Sarnia, Ontario), becomes lieutenant-colonel, vice Colonel Ryerson transferred.

The Toronto Provincial Hospital for the Insane.

Dr. Charles K. Clarke, medical superintendent of the Toronto Provincial Hospital for the Insane, has been instrumental in securing the appointment by the Ontario Government of a resident pathologist to the institution over which he presides. The appointed officer, who will devote all his time to the work in this institution, is Dr. J. H. Fitzgerald, a graduate of recent date in the University of Toronto, who for the past two years has been pursuing special studies in psychiatry in Johns Hopkins Hospital, Baltimore, and other hospitals of the United States. Dr. Clarke has made a distinct advance in this subject in Canada by securing this appointment.

The Deportation of Insane from Ontario.

The deportation of insane from the province of Ontario—that is, of those who have lived for less than two years in the province—is being actively conducted under the department of the Inspector of the Provincial Hospitals for the Insane. The Dominion Government Immigration Act provides for this and the province is taking advantage of the provisions of the Act. In the case of the English immigrants the correspondence and technical work are conducted through Canada's High Commissioner, Lord Strathcona. During the three months ending with November one was returned to Russia, two were returned to the United States, and five to England. There were then four awaiting return to England and one to Sweden. It is estimated that the province saves \$2000 by each deportation.

Hospital Abuse in Montreal.

Now that the hospitals of Montreal are so constantly filled to overflowing hospital abuse seems to be more glaring. According to the medical men the Montreal General Hospital is the one hospital in that city which suffers most from hospital abuse. Day after day women drive up to the doors of the out-patient departments in cabs to receive free treatment at the hands of the physicians in attendance. It is quite plain that they could as well afford to pay for their medical advice and medicines as for their cabs, furs, silk clothes, and smart bonnets.

Jan. 21th.

Obituary.

JOHN NEWNHAM WINTER, M.R.C.S. ENG.,
M. AND L.S.A.

THE death of Mr. John Newnham Winter on Jan. 18th at his residence near Kew Gardens after a few days' illness from influenza removes one who was for many years extremely well known to the profession at Brighton. Educated at a private school at Winchester, of a type now practically extinct, he received his medical training at Guy's Hospital, qualifying as a Member of the Royal College of Surgeons of England and a Licentiate of the Society of Apothecaries in the year 1853. From 1853 to 1855 he was house surgeon at the Sussex County Hospital at Brighton. After a brief journey to Egypt and Palestine he joined his father, the late Mr. Thomas Bradbury Winter, in practice at Brighton. Here he rapidly acquired a very extensive practice and for a great many years there were few more familiar figures among the medical men of the town. For several years he was in partnership with his brother-in-law, the late Mr. F. W. Salzmann. Of an extremely retiring disposition, he shrank from all public office and he was too busy to discharge the duties incidental to professional appointments, but at the time of his death he was honorary consulting surgeon to the Brighton and Hove Hospital for Women and a few years ago he was elected a member of the Society of Apothecaries and frequently attended the meetings of the Court. On his relinquishing practice in 1900, at the age of 70 years, he settled at Kew, no doubt determined in his choice by his devotion to flowers and gardening. He was a recognised authority on filmy ferns and was frequently consulted by those interested in such subjects.

His funeral at Brighton on Jan. 21st produced many testimonies to the respect in which he was universally held.

ALEXANDER PEDDIE, M.D. EDIN., F.R.C.P. EDIN.

By the death of Dr. Alexander Peddie a venerable link with the past has been removed from the medical life of Edinburgh and of Scotland. Born in 1810 he was in his ninety-seventh year. He was the son of the Rev. Dr. James Peddie who was minister of the United Associate Congregation in Bristo-street, Edinburgh, for 62 years. He died in his house in Rutland-street, Edinburgh, on Jan. 19th. Until quite recently he could from time to time be seen in the streets at the west-end of Edinburgh, where his erect figure and white hair hardly revealed his age. His advanced age has naturally turned men's minds to think of all that the world has passed through in the span of one man's life, while to the medical man it is little short of incredible that there is so much difference between the profession of to-day and of 90 years ago, and yet Dr. Peddie lived and worked during the greater charges which signalled the last half of the nineteenth century. Dr. Peddie began his medical life by becoming an apprentice to Professor James Syme in November, 1830; in 1835 he became a Licentiate of the Royal College of Surgeons of Edinburgh and took the degree of M.D. at the University of the same city. In 1845 he was admitted F.R.C.P. Edin. The autumn and winter of 1835 were spent on the continent in travel and study. On his return to Edinburgh he began general practice. For many years, first in conjunction with Dr. John Brown and Dr. Cornwall and then alone, he carried on a hospital and dispensary at Minto House when Syme gave it up on being appointed to the staff of the Royal Infirmary. His contributions to medicine, written in the earlier years of his career, were published in the *Edinburgh Medical Journal* and it is interesting to note that in 1854 he published a paper suggesting that inebriety was a manifestation of insanity and that he treated delirium tremens without stimulants or opiates. He dealt in another paper with Legalised Arrangements for the Treatment of Dipomania. He was regarded as such an authority on the question that he on two different occasions gave evidence before committees investigating the question. In this he was much in advance of his time. As early as 1845 he wrote on the "Contagious Nature of Puerperal Fever" and in 1849 he was advocating the establishment of a hospital for sick children. He thus showed himself to be possessed of some of the higher faculties of the physician which might have still further enriched the medical literature of Edinburgh, but he devoted his time and

Signed by the students in other faculties besides the members of his class, the inscription runs as follows:—

Camillo Golgi—culus nomen—ob mirabilis scientiæ artisque medicæ inventa atque incrementa—lampadem—summa laudibus honoribusque ubique concelebratam—nuperime præsum nobilissimum—ollum ab Alfreda Nobel scientiæ ac merito propositum—decoravit, provexit, adauxit—tauto viro—qui sic et ipsius et civitatis et patriæ—famam ac decus ære perennius—coram omnibus nationibus confirmavit asseruitque—Atheniæ Ticinensis Alumni—uno animo una voce—gaudentes gratulantes—honoris memoriæque causa—tabulam membranaceam arte depictam—magnæ admirationis parvum documentum dictam consecratamque—voverunt.

[To Camillo Golgi, whose name, long celebrated universally with the highest praise and honour for the marvellous discoveries with which he has enriched the science and art of medicine, and which, quite recently, the prize offered by Alfred Nobel for scientific merit has adorned, promoted, and enhanced—to the distinguished man who, in the eyes of all nations, has thus confirmed and vindicated for his city and country a fame and a glory more enduring than brass, the students of the University of Pavia, with one mind and voice, have, with joy and congratulation, and in perpetuation of the honour, wished solemnly to dedicate this artistically illuminated parchment as a humble proof of their profound admiration.] The design and execution of the parchment, I may add, are due to Professor Provini, well known for his skill in that *métier*, and the inscription is from the pen of Pietro Rasi, the eminent occupant of the Latin chair in the Lombard University.

The Red Cross at the Pontine Marshes.

THE LANCET has from time to time taken cognisance of the service organised by the Red Cross in the Roman Campagna—a service which has already gone far to minimise the death-rate from malaria in that region—a service, moreover, which is now, on the initiation of the Prefect, to be extended farther south, to the deadly level of the Palude Pontina. On Tuesday next (29th inst.) he will confer in Rome with the communes of that "zona malarica" from Velletri to Tarracina, the meeting being further reinforced by the Società per gli Studi della Malaria, by the Conforzio Idrantico Pontino, by representatives of the agrarian schools, and by other bodies interested, so as, in concert with the Red Cross, "to institute a permanent sanitary service" in that notorious and much-neglected "fever preserve." So constituted and equipped, with the admirable record of its "campagna antimalarica" to guide and encourage it, the "Red Cross Extension" may ere long be expected to reduce the all too heavy returns of disease and death on a seaboard held, from a remote antiquity, in the worst hygienic repute.

Jan. 25th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

A New Hospital.

THE Ottoman Government has decided to build a new hospital in Stambul as an annexe to the Hamidié Hospital at Shishli. The new building will be provided with a special section for midwifery and gynecological cases. I am informed that the Sultan intends to give a substantial sum from his private purse to enable the erection of the annexe to be begun as soon as possible.

Adulteration of Foodstuffs.

It has been found that macaroni and other similar articles of alimentation imported into Turkey are almost always adulterated. Chemical analysis undertaken by the laboratory of the Custom House reports that a certain kind of macaroni imported from Italy is coloured with dyes which are prejudicial to health. It has therefore been decided strictly to prohibit any further importation of the sophisticated article and to confiscate all which is already imported and offered for sale at the *bacals* (grocers).

The Water supply of Damascus.

The present water-supply of the city of Damascus is far from being satisfactory. Damascus is provided with water from a distant source which, before it arrives for distribution at Damascus, runs through plains, valleys, and villages, and becomes in its course contaminated by various impurities. Those settled around the source and the course of the water-supply throw into it all imaginable refuse. In the

city itself the water receives new impurities in passing from house to house, and the cause of the prevalence in Damascus of typhoid fever requires no further explanation. It is intended now to remedy this dangerous state of affairs. The same source will be used, which is in itself perfectly pure, but a complete system of iron tubes will be provided and other general measures will be taken in order to make contamination impossible.

Disastrous Inundations.

The local newspapers have given full details of the terrible floods in the vilayet Aydin. Immense spaces have been transformed into lakes, causing incalculable damage. Villages have been destroyed, many people have perished, and entire flocks of sheep and cattle have been drowned. The distress of the panic-stricken population was indescribable. It is estimated approximately that the material losses suffered by the surroundings of the locality of Sarouhan alone amount to 150,000 Turkish liras (one lira=18 shillings). The local authorities of the vilayet have done all in their power to lessen the sufferings of the population. Help has been sent from Constantinople. In Smyrna a special commission has been instituted, under the presidency of the Governor-General of the vilayet, with the purpose of collecting subscriptions for the calamity-stricken population and similar collections have been made in other important centres of the province.

The "Mangal."

In most of the houses in Constantinople as well as in other cities of Turkey heating in winter is done by means of the so-called *mangal*. This consists principally of a receptacle for burning charcoal. A *mangal* may be nothing else than such a simple brass or iron receptacle or may be quite an artistic and expensive article of most rare and valuable workmanship. The charcoal is first thoroughly burned through, and when it no longer emits any flame or odour the *mangal* is brought into the room for purposes of heating. Sometimes it happens that proper attention is not paid to the burning charcoal with not infrequent fatal results.

Jan. 19th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Typhoid Fever in Ontario.

DURING the month of November, 1906, there was an abnormal prevalence of typhoid fever in the province of Ontario. As regards its chief city, Toronto, the intake pipe to the city reservoir runs on the bed of Toronto Bay, into which all the sewage is discharged, but although this pipe had a break and the drinking water was contaminated there was not much of the disease in the city. The prompt action of the medical health officer and the continuous advertisement of "boil the water," as well as the acceptance of the advice on the part of the people, cut short any chance of an epidemic. Throughout the entire province of Ontario about 1500 cases of the disease were treated and 113 deaths from it were recorded. Following immediately the break in the conduit in Toronto Bay the city held its annual municipal elections, but the ratepayers refused authority to the city council to deal effectively one way or another with the sewage problem, voting against the proposed by-law for a trunk sewer.

Typhoid Fever in Montreal.

In the city of Montreal and the immediate surrounding municipalities there are at the present time nearly 1000 cases of typhoid fever, and two young Montreal practitioners have succumbed to the disease. Dr. John D. Cameron, who graduated from McGill University in 1893, died on Jan. 4th from the disease at the age of 38 years. He was at the time of his death assistant gynecologist to the Montreal General Hospital. The other victim was Dr. G. A. L. Payne, aged 27 years, who had only graduated from McGill University last year. All the hospitals in Montreal are filled. The Quebec board of health, through its secretary, Dr. E. Pelletier, will investigate and make a report on the outbreak.

Professor Osler's Visit.

During the latter part of December, 1906, Professor W. Osler with his family was visiting in Toronto and Montreal.

experiment ought to be a distinct success. The *Annals* will be edited by Professor Ronald Ross, with whose work Dr. J. W. W. Stephens, Dr. John L. Todd, Dr. H. Wolferstan Thomas, Dr. Anton Brühl, Mr. Robert Newstead, and Sir Robert W. Boyce will be associated. The subscription (10s. 6d. per annum, post free) can be forwarded at once to the secretary of the Liverpool School of Tropical Medicine, B 10, Exchange buildings, Liverpool.—We reviewed the first edition of MacCabe's "War with Disease" in our issue of Jan. 17th. A second and enlarged edition in a cloth cover has now been published at 1s. net by Messrs. Baillière, Tindall, and Cox. This edition is dedicated, by permission, to H.R.H. the Duke of Connaught.—Messrs. Methuen are issuing a work on the alcohol question entitled "The Drink Problem in its Medico-Sociological Aspects," and edited by T. N. Kelyack, M.D. Vict., M.R.C.P. Lond., honorary secretary of the Society for the Study of Inebriety.

ROYAL UNITED HOSPITAL, BATH.—A public meeting was held at the Guildhall, Bath, on Jan. 22nd, under the presidency of the Mayor, to consider the financial position of the Royal United Hospital and the best means of reducing the debt of £5000 which exists on the institution. The Mayor will make an effort to wipe off the debt during his year of office and stated that he had already received several subscriptions for this purpose. After some discussion the meeting pledged itself to support the mayor in his admirable determination to place the Royal United Hospital on a sound financial basis.

FRIENDLY SOCIETIES AND THEIR MEDICAL OFFICERS.—Replying to the toast of "The Medical Officer" at the annual dinner of the Pioneer Benefit Society, held recently at Warminster, Wiltshire, Mr. F. I. Flower, M.R.C.S. Eng., said that although both the social condition of working men and their wages had been raised the medical officers to working men's clubs were very inadequately remunerated. He thought that in all clubs there should be special fees for cases of fractured limbs and operations and that in time it would have to be so.

UNREGISTERED MIDWIVES AT TRURO.—An inquiry was held at Truro, Cornwall, on Jan. 24th relative to the death of a newly born infant. The mother of the child had been attended by an uncertified midwife. The coroner (Mr. E. Carlyon) said that there was no suspicion of foul play, but he warned the midwife against continuing to act as such. Mr. Carlyon added that of all the midwives practising in Truro only two were registered. The jury eventually decided "that the attention of the Cornwall county council should be called to the fact that there were women practising midwifery in Truro without certificates."

THE NEWLY UNITED CLINICAL SCHOOL OF THE UNIVERSITY OF LIVERPOOL.—The first annual dinner of the united clinical school in connexion with the University of Liverpool was held at the Adelphi Hotel, Liverpool, on Jan. 24th. Sir James Barr, the chairman of the united clinical school, presided, and there was a large gathering of members of the profession and leading citizens. Prior to October last the united hospitals clinical school, comprising the David Lewis Northern Hospital, the Royal Southern Hospital and the Stanley Hospital, competed in friendly rivalry with the Royal Infirmary in training medical students in clinical work. Largely owing to the tactful efforts of Dr. T. R. Bradshaw, as gracefully acknowledged in his speech by Sir James Barr, a union has been effected by which one large and greatly strengthened clinical school is provided for the medical students of the University of Liverpool. Professor A. M. Paterson, in proposing one of the toasts, said that the union of the hospitals for the purpose of clinical teaching suggested to him and others the establishment of one central local authority for the administration and control of all the hospitals—general, civic, and Poor-law. Objection was taken to this suggestion by Sir Robert Hampson, the President of the Stanley Hospital, on the ground that it might promote "central control and officialism," and by Mr. Ralph Brocklebank, the chairman of the Royal Infirmary, who deprecated any step that would tend to bring the voluntary hospitals on to the rates. However, it ought not to be impracticable to devise some scheme whereby the individuality of the general hospitals should be maintained and at the same time the advantages of combination might also be attained.

BOOKS, ETC., RECEIVED.

A. STUNER'S VERLAG (CURT KANITZSCH), Würzburg.

Diagnose und Therapie der Anämien. Nach funktionellen Gesichtspunkten auf Grundlage Quantitativer Blutuntersuchung. Besonders für Aerzte und Studierende. Bericht von Dr. Joseph Arnebt, Privatdozent an der Kgl. Universität Würzburg. (Würzburger Abhandlungen aus dem Gesamtgebiet der praktischen Medizin. Herausgegeben von Prof. Dr. Joh. Müller und Prof. Dr. Otto Seifert. I. Supplement-Band.) Price M.9.

ASSOCIATION OF AMERICAN PHYSICIANS. (Dr. Solomon Solis Corbry, Recorder of the Association, 1525, Walnut-street, Philadelphia, U.S.A.)

Transactions of the Association of American Physicians. Twenty-first Session, held at Washington, D.C., May 15th and 16th, 1906. Volume XXI. Price not stated.

BLACK, ADAM AND CHARLES, Soho-square, London, W.

The Writers' and Artists' Year-book, 1907. A Directory for Writers, Artists, and Photographers. Second Year of New Issue. Price 1s. net.

The Englishwoman's Year-book and Directory, 1907-8. Edited by Emily James, Organising Secretary to the National Union of Women Workers of Great Britain and Ireland. Twenty-seventh year. Price 2s. 6d. net.

CATHOLIC TRUTH SOCIETY OF SCOTLAND, Glasgow. (ROBERT GINSON AND SONS (GLASGOW, LIMITED), 45, Queen-street, Glasgow.)

A Modern Miracle (Pierre de Rudder). By Alfred Deschamps, S.J., M.D., S.C.D. Translated from the French by Felix Rankin, S.J. Price 6d.

CARTON PUBLISHING COMPANY, Clun House, Surrey-street, Strand, London, W.C.

The Nursing. The Feeding and Hygiene of Premature and Full-term Infants. By Pierre Budin, Professor of Obstetrics, University of Paris, Director of the Clinique Tarnier, Member of the Academy of Medicine. Authorized Translation by William J. Maloney, M.B., Ch.B., Fellow of the Obstetrical Society of Edinburgh, Fellow of the Edinburgh Research Society, &c. With an Introduction by Sir Alexander R. Simpson, M.D., LL.D., D.Sc., Emeritus Professor of Midwifery and Diseases of Women and Children, University of Edinburgh. Price 21s. net.

CHATTO AND WINDUS, 111, St. Martin's-lane, London, W.C.

Herbert Fris's Royal Guide to the London Charities. Edited by John Lane. New and revised edition—the Forty-third. Price 1s. 6d.

CHURCHILL, J. AND A., 7, Great Marlborough-street, London, W.

Guy's Hospital Reports. Edited by F. J. Steward, M.S., and Herbert French, M.D. Vol. LX., being Volume XLV. of the Third Series. Price, to subscribers, 6s.; to non-subscribers, 10s. 6d.

Reports of the Society for the Study of Disease in Children. Volume VI. Session of 1905-1906. Editor: George Carpenter, M.D. Price 12s. 6d. net.

CORLENTZ, OSCAR, Maassenstrasse, 13, Berlin, W.30.

Die Therapie der Haut- und Geschlechtskrankheiten. Für praktische Aerzte. Von Dr. Reinhold Ledermann, Spezialarzt für Hautkrankheiten in Berlin. Dritte durchgesehene und erweiterte Auflage des Therapieutschen Vademecum der Haut- und Geschlechtskrankheiten. Price M.6.

FISCHER, GUSTAV, Jena.

Die Koronararterien des menschlichen Herzens unter normalen und pathologischen Verhältnissen. Dargestellt in stereoskopischen Röntgenbildern. Von Dr. F. Jamin, o.o. Professor und Dr. H. Merkel, Privatdozent. Aus der medizinischen Klinik und dem pathologischen Institut zu Erlangen. Price M.10.

Die Lehre von der Krebskrankheit von den ältesten Zeiten bis zur Gegenwart. Von Sanitätsrat Dr. Jacob Wolff, Prakt. Arzt in Berlin. Price M.20.

Handatlas der Entwicklungsgeschichte des Menschen. Von Dr. Julius Kollmann, O. Professor der Anatomie an der Universität, Basel. Erster Teil: Progenie, Blastogenie, Adnexe Embryonis, Forma Externa Embryonum, Embryologia Ossium, Embryologia Musculorum. Price M.13; bound, M.15.

GRIFFIN, CHARLES, AND COMPANY, LIMITED, Exeter-street, Strand, London, W.C.

The Year-Book of the Scientific and Learned Societies of Great Britain and Ireland. Compiled from Official Sources. Twenty-third Annual Issue. Price 7s. 6d.

J. B. LIPPINCOTT COMPANY, Philadelphia and London.

Pediatrics. The Hygiene and Medical Treatment of Children. By Thomas Morgan Rotch, M.D., Professor of Pediatrics, Harvard University. Fifth edition, rearranged and rewritten. Price 25s. net.

J. U. KERN'S VERLAG (MAX MÜLLER), Telchstrasse, 8, Breslau.

Geschichte der Pestepidemien in Russland von der Gründung des Reiches bis auf die Gegenwart. Nach den Quellen bearbeitet von Dr. med. F. Dörsch, Primararzt am Französischen Hospital St. Marie Magdalena zu St. Petersburg. (Abhandlungen zur Geschichte der Medizin. Herausgegeben von Geh. Medizinalrat Professor Dr. Hugo Magnus. Heft XVIII.) Price M.6.

energies to a large family practice, and in this work few men won more confidence and affection from their patients than Dr. Peddie received. He was, however, possessed of varied gifts; he was an enthusiastic musician and a keen sportsman, his special delight being salmon fishing. His last salmon was caught when he was 84 years of age. He belonged to the United Presbyterian Church for many years and was present when that body united with the Free Church in 1900.

He has been widely known as the intimate friend of Dr. John Brown, the author of "Rab and His Friends." In 1890, when President of the Edinburgh Harveian Society, his oration was devoted to reminiscences of his old friend and this oration was amplified into a larger biographical sketch. Dr. Peddie was buried in Warriston Cemetery, Edinburgh, on Jan. 23rd, the funeral being attended by the Presidents of the Edinburgh Royal Colleges of Physicians and of Surgeons and many other members of the medical profession. Mrs. Peddie predeceased her husband by a few years.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—H. A. Fenton (Section II.), St. Mary's Hospital; O. P. N. Pearn (Sections I. and II.), Westminster Hospital; D. E. G. Pottinger (Sections I. and II.), Edinburgh; and S. Singh (Sections I. and II.), Glasgow.

Medicine.—M. L. Ford (Section I.), London Hospital; D. B. O. Pottinger (Section II.), Edinburgh; O. S. Spencer (Sections I. and II.), Manchester; A. R. Wade (Section II.), St. Bartholomew's Hospital; and C. J. Wolfe (Section I.), Edinburgh and London Hospital.

Midwifery.—O. F. Curtis, Manchester; and A. C. J. Elwin and J. F. McQueen, King's College Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: O. P. N. Pearn and D. B. O. Pottinger.

UNIVERSITY OF OXFORD.—In a congregation held on Jan. 24th the following degrees were conferred:—

B.M., B.Ch.—H. G. F. Spurrell, Merton College; H. A. Philpot, New College; H. R. Ransbotham, Brasenose College; B. R. A. Batt, Trinity College; C. Beards, Jesus College; and H. H. Carleton, Keble College.

D.Sc.—G. F. H. Smith, New College.

FOREIGN UNIVERSITY INTELLIGENCE.

Baile: Dr. Oppikofer has been recognised as *privat docent* of Otolaryngology. **Bonn:** The title of Professor has been conferred upon Dr. Karl Grouven, *privat docent* of Dermatology; Dr. Eduard Hummelsheim, *privat docent* of Ophthalmology; and Dr. Julius Strassburger, *privat docent* of Internal Medicine. **Erlangen:** Dr. Spaeth, a well-known writer on medical chemistry, has been granted the title of Professor. **Freiburg:** Dr. W. Spielmeier has been recognised as *privat docent* of Mental Diseases. **Halle:** Dr. Louis Wullstein, *privat docent* of Surgery, has been granted the title of Professor. **Harvard:** Dr. Walter B. Cannon has been appointed Professor of Physiology. **Heidelberg:** Dr. Franz Fleschler has been recognised as *privat docent* of Medicine. **Kiel:** Dr. Julius Raacke of the Clinic for Mental Diseases has been granted the title of Professor. **Odessa:** Dr. Shchegoleff, Extraordinary Professor of Surgery, has been promoted to an Ordinary Professorship. **Vienna:** An Institute of the History of Medicine is to be established under the direction of Professor Neuburger and Professor von Töply. **Würzburg:** Dr. Adolf Treutlein has been recognised as *privat docent* of Marine and Tropical Hygiene.

DONATIONS AND BEQUESTS.—By the will of Mr. Aubrey Hillman, of Lewes, Sussex, £1000 are bequeathed to the Lewes Dispensary and Infirmary and Victoria Hospital, Lewes. The executors of the late Mr. J. L. Toole have sent to Charing Cross Hospital the sum of £900 for the purpose of endowing a bed in memory of the famous actor. The executors have also given to the National Hospital for the Paralysed and Epileptic, Bloomsbury, £225. The residue of the estate of the late Mr. William Bykur of Selwood, Dorset, which will probably amount to £20,000, will be

divided among the following institutions: Royal Free Hospital, Guy's Hospital, the London Hospital, Middlesex Hospital, the East London Hospital for Children, Shadwell, the Victoria Hospital, Bournemouth, the North London or University College Hospital, and the Westminster Hospital.

St. John's House, for many years in Norfolk-street, Strand, has removed to 12, Queen-square, Bloomsbury.

UNIVERSITY OF CAMBRIDGE.—The Third M.B. Examination, Part II, will begin on Tuesday, April 23rd, and the examination for M.C. on Thursday, April 25th. The names of the candidates have to be sent to the Registry by April 9th.—Dr. R. M. Simon has been appointed an examiner in medicine in the place of Professor W. Osler.

SELF-WILLED LEPERS.—A number of lepers some time ago, discontented with their lot, went to St. Petersburg to air their grievances, and after a time were sent back to the leper establishment of Yamburg. Now the head medical officer of the Alaphusovsk Hospital has reported the receipt of a letter from them, says the *Noroe Vremya*, stating that they have no medical man in attendance and that very soon they will again betake themselves to St. Petersburg to be cared for there; and he hopes that the requisite measures will be adopted to prevent their proposed second unsolicited visit to the capital.

THE HOSPITAL SATURDAY FUND.—At a meeting of the board of delegates held on Jan. 19th at the offices of the Fund, Gray's Inn-road, under the presidency of Sir Savile B. Crossley, it was unanimously resolved, on the recommendation of the distribution committee, that a sum of £23 89s 14d. should be awarded to the 106 participating hospitals, dispensaries, and convalescent homes as follows: 31 general hospitals, £8102 2s; 15 cottage hospitals, £312 14s; 76 special hospitals, £7938; 31 dispensaries, £911 10s; 23 convalescent homes, £1469 14s; 17 nursing institutions, £385 8s; and 13 miscellaneous (including ambulance, distribution, and surgical appliance committee), £4779 6s.

PUBLIC VACCINATORS AND POOR-LAW MEDICAL OFFICERS.—At a meeting of the Liskeard board of guardians held on Jan. 19th a discussion arose in reference to the appointment of a district medical officer. The guardians had made a stipulation with this gentleman, who was a public vaccinator as well as a district medical officer, that if he resigned one office he must resign both. The Local Government Board, however, would not sanction the appointment if these conditions were imposed as it held that the medical officer was eligible for either position as long as he resided in the district. Eventually a member gave notice that at a future meeting he would move that the appointment should be given according to the instructions of the Local Government Board.

THE ITALIAN HOSPITAL.—The annual meeting of the supporters of the Italian Hospital in Queen-square, London, W.C., was held on Jan. 18th, the Italian Ambassador, who is the president of the hospital, being in the chair. The committee's report stated that upwards of 14,000 patients, including more than 6000 British subjects, had been treated during the year. Dr. Michael Castaneda, consulting physician to the hospital and chairman of the committee, said that the King of Italy had sanctioned a scheme which had been brought forward to establish an endowment for the hospital. A subsequent speaker complained of the heavy local rates which absorbed between £250 and £300 a year. It was stated that the Italian Government made an annual grant of £100 and that £500 had been received from King Edward's Hospital Fund for London. The members of the committee were re-elected and the proceedings terminated with the usual votes of thanks.

LITERARY INTELLIGENCE.—The Liverpool School of Tropical Medicine is issuing a new periodical entitled "The Annals of Tropical Medicine and Hygiene," which bids fair to be of great value to the medical profession. The first number of the Annals will appear early in 1907 and will replace the series of separate memoirs of the Liverpool School of Tropical Medicine, several of which have been published. Many of these memoirs have been noticed in our columns as they appeared, and if the standard of their excellent printing and profuse illustration is maintained in the new Annals we think that the

KING EDWARD VII. SANATORIUM, Midhurst, Sussex.—Junior Assistant Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and attendance.

LIVERPOOL HOSPITAL FOR CONSUMPTION.—Honorary Assistant Physician.

LONDON LOCK HOSPITAL.—Surgeon to Out-patients.

MANCHESTER, ANCOATS HOSPITAL.—Resident House Physician. Salary £20 per annum, with board, &c.

MANCHESTER, MOSCOPPE FEVER HOSPITAL.—Fourth Medical Assistant. Salary £100 per annum, with board, lodgings, and washing.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—House Surgeon for six months. Salary £25, with board and residence.

NEWCASTLE UPON TYNE, CITY HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Assistant. Salary £104 per annum, with board, lodging, &c.

NEWCASTLE UPON TYNE AND NORTHUMBERLAND SANATORIUM FOR CONSUMPTION, Barrasford-on-Tyne.—Resident Medical Officer. Salary £150 per annum, rising to £220, with board and laundry.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—Honorary Anaesthetist.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Assistant House Surgeon for six months, renewable. Salary £50, with board, residence, and washing.

REETH UNION DISTRICT AND WORKHOUSE, Yorkshire.—Medical Officer. Salary £57 10s.

ROYAL EAR HOSPITAL, Dean street, Soho, W.—Two Clinical Assistants for six months.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City road, E.C.—Resident Medical Officer for six months. Salary at rate of £120 per annum, with apartments, board, and washing.

ST. BARTHOLOMEW'S HOSPITAL.—Surgeon and Assistant Surgeon to the Throat Department.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon for six months. Salary £31, with board, residence, and laundry.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

TENBORO, ISLE OF WIGHT, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Assistant Resident Medical Officer, unmarried. Salary £100, with board and lodging.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—Physician to the Out-patients.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon, unmarried. Salary £50 per annum, with board, residence, and washing.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Honorary Surgeon.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeon under the Factory and Workshop Act at Malton, in the county of York, and at East Linton, in the county of Haddington.

Births, Marriages, and Deaths.

BIRTHS.

BATTLE.—On Jan. 21st, at Harley-street, Cavendish-square, W., the wife of William Henry Battle, F.R.C.S., of a son.

COOKE.—On Jan. 25th, at Bridge-street, Cambridge, the wife of Arthur Cooke, F.R.C.S., of a son.

ELLIS.—On Jan. 23rd, at London-road, Leicester, the wife of L. Erasmus Ellis, M.D., of a son.

ROGERS.—On Jan. 24th, at Sutherland-avenue, W., the wife of David de Sola Cohen Rogers, L.D.S. R.C.S. Eng., of Buenos Aires, of a son.

MARRIAGE.

HEDLEY-HALLIDAY.—On Jan. 12th, at St. Mary's, Harrow, by the Rev. T. Wayland Joyce, assisted by the Rev. R. Howel Brown, vicar of Enfield, Dr. John Prescott Hedley, son of Dr. and Mrs. Hedley, Middlesbrough to Miss Kathleen Halliday, daughter of Mr. and Mrs. James Halliday, Fishers, Harrow.—At home, 11, John-street, Mayfair, W., March 12th to 17th, 1907.

DEATH.

OLDHAM.—On Jan. 24th, at Brighton, Charles James Oldham, F.R.C.S., aged 62 years.

N.B.—A fee of 1s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

COPPERED PEAS.

At the Bournemouth police court on Jan. 18th a number of local grocers were each fined 40s., including costs, for selling bottled green peas mixed with copper salt. According to the analytical reports of the borough analyst, Mr. F. A. Cripps, F.I.O., the five samples contained copper in quantities equivalent to copper sulphate in the following proportions per pound of the whole sample and of the sample exclusive of liquor: 2.04 grains and 3.35 grains; 2.5 grains and 3.9 grains; 2.02 grains and 3.05 grains; 1.85 grains and 2.8 grains; 1.59 grains and 2.45 grains. As from one-quarter to two grains is the quantity allowed by the British Pharmacopoeia as an astringent, it was stated that three or four ounces of some of the samples would contain a good astringent dose. Mr. Cripps said he had found that from 30 to 60 per cent. of the copper salt was dissolved by pepsine in two hours. In six hours 90 per cent. was dissolved, while in pepsine and pancreatine almost the whole was digested. He further gave it as his opinion that the cause of the divergence of medical opinion as to the effects of copper salts on the human system was that some of them conducted their experiments with the inorganic salts while others used the organic. Mr. P. W. G. Kunn, medical officer of health of Bournemouth, also gave evidence for the prosecution and suggested that the eating by a child of a quantity of the peas under consideration would lead to serious or even fatal consequences. Copper was a coloring "fakement" and did not add to the food value of the product. There were bottled peas on the market prepared without the addition of copper sulphate and he had eaten them himself. Sulphate of copper being a poison, its use for this purpose was risky.

Without entering into the vexed question of whether small quantities of copper salts are harmful or not, we can say in the most emphatic way that all foodstuffs containing this or any other colouring matter should be definitely labelled with an intimation of the quantity of the colouring matter per pound employed and with a statement of its nature. The argument of the traders who use these colouring matters is always the same: first, they argue that it does no harm; and secondly, that people will not buy the foodstuff unless it is coloured. This being so, it can do no harm to trade to let the customer know that he is buying, according to the trader, a harmless substance, and one which he likes. But until such labelling is made compulsory the trader will never sell goods with such a label, for he knows very well that most people would not buy peas or other foodstuffs if they were told that they contained copper salts. The Departmental Committee on Food Preservatives recommended the absolute prohibition of copper salts for "greening" vegetables.

A POINT IN ETHICS.

To the Editors of THE LANCET.

SIRS,—Will you kindly give me your opinion upon the following case? Last Friday I was called to a woman who had just had a miscarriage. I attended her for some hours and left her quite comfortable. I visited her every day and on the fourth day I found her sitting up and she told me she had been moving about from one room to another for a short time. On the sixth day I am called urgently to her and found her in pain and losing blood. I gave some ergot and on examination found nothing to account for it. There was no febrile reaction. She passed a rather bad night, but in the morning was more comfortable. On going to see her on the same evening I am told by the servant that her mistress has called in a nurse who has brought her own doctor. How should I act in those circumstances?

Jan. 25th, 1907.

I am, Sirs, yours faithfully,

MIDWICHS.

* * * If the patient wishes in future to be attended by the nurse's "own doctor" she has a right so to be attended and our correspondent should withdraw from the case. The nurse's "own doctor" would, however, be acting unprofessionally if he took over the case without previously informing our correspondent.—Ed. L.

HASTINGS AND ST. LEONARDS.

At the request of the mayor and town council of the borough of Hastings Dr. A. Scarslyn Wilson, medical officer of health of the borough, has written a small pamphlet entitled "Notes on Hastings and St. Leonards," dealing with the climatology and sanitary condition of the borough. The pamphlet is intended for the information of medical men who may be called upon by their patients for advice in the selection of a suitable health resort. It is a pity that our home health resorts do not receive a larger amount of patronage than is usually accorded to them. Certainly the climate of Hastings offers advantages to certain classes of invalids, abundance of sunshine and the relative absence of fog being two of the chief features. The pamphlet, which contains in a brief compass some very useful and interesting information, is illustrated by several reproductions of photographs of Hastings and St. Leonards.

KEGAN PAUL, TRENCH, TRÜBNER, AND CO., LIMITED, Dryden House, Gerrard-street, London, W.

The International Scientific Series. Edited by F. Legge.

The Mind and the Brain. By Alfred Binet, Directeur du Laboratoire de Psychologie à la Sorbonne. Being the authorised Translation of *L'Âme et le Corps*. Price 5s.

KING, P. S., AND SON, 2 and 4, Great Smith-street, Westminster, London, S.W.

Our Heritage in the Land. By Harold E. Moore, F.S.I., F.S.S., Author of "Hints on Land Improvements," "Back to the Land," &c. With Introduction and Scheme for State Aid by Sir William Mather, LL.D., M.I.C.E. Second edition. Price 1s. net.

LEHMANN, J. F., Heustrasse, 20, München.

Lehmann's Medizinische Atlanten. Band IV. Atlas der deskriptiven Anatomie des Menschen. Von Dr. med. J. Sobotta, a.o. Professor und Prosektor der Anatomie und der anthropologischen Anstalt in Würzburg. III. Abteilung. 2 Lieferung: Die Sinnesorgane des Menschen, nebst einem Anhang: Das Lymphgefäßsystem des Menschen. Preis M.6. Text-Band dazu, Preis M.6.

LONGMANS, GREEN, AND CO., 39, PATERNOSTER-ROW, London, E.C.

Human Personality and its Survival of Bodily Death. By Frederic W. H. Myers. Edited and abridged by his son, Leopold Hamilton Myers. Price 10s. 6d. net.

Longmans' Civil Engineering Series. Sanitary Engineering with respect to Water-Supply and Sewage Disposal. By Leveson Francis Vernon-Harcourt, M.A., M.Inst.C.E. Price 14s. net.

Thirty-second Annual Edition of the Classified Directory to the Metropolitan Charities for 1907. By W. F. Howe, Editor of each of the Thirty-two Editions. Price 1s.

MURRAY, JOHN, 50A, Albemarle-street, London, W.

Recent Progress in the Study of Variation, Heredity, and Evolution. By Robert Heath Lock, M.A., Fellow of Gonville and Caius College, Cambridge. Price 7s. 6d. net.

NEW SYDENHAM SOCIETY, London. (Agent: H. K. Lewis, 135, Gower-street, London, W.C.)

An Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology. Compiled for the New Sydenham Society. (A Continuation of the "Atlas of Pathology.") Chiefly from Original Sources. Fasciculus XXV. bis. (Double Number) Being XXII. and XXIII. of The Clinical Atlas. Variola, Vaccinia, and Varicella. Price to non-subscribers, one guinea.

RICHARDS, E. GRANT, 7, Carlton-street, London, W.

The Birds of the British Islands. By Charles Stonham, O.M.G., F.R.C.S., F.Z.S. With Illustrations by Lilian M. Medland. In 20 Parts. Part IV. Price 7s. 6d. net.

SIMPKEIN, MARSHALL, HAMILTON, KEST, AND CO., London.

A History of Dancing. By Reginald St. Johnston, M.R.C.S., L.R.O.P., Author of "The Dream Face," &c. Price not stated.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. (Secretary: WILLIAM D. HAGGARD, M.D., 148, Eighth-avenue, N., Nashville, Tennessee, U.S.A.)

Transactions of the Southern Surgical and Gynecological Association. Volume XVIII. Eighteenth Session, held at Louisville, Kentucky, Dec. 12th, 13th, and 14th, 1905. Edited by W. D. Haggard, M.D. Price not stated.

SPRINGER, JULIUS, Monbijouplatz, 3, Berlin.

Medizinisch-klinische Diagnostik. Lehrbuch der Untersuchungsmethoden innerer Krankheiten für Studierende und Aerzte. Von Professor Dr. F. Wesener, Oberarzt des Städtischen Elisabeth-Krankenhauses zu Aachen. Zweite, umgearbeitete und vermehrte Auflage. Price M.18.

SWAN SONNENSCHEIN AND CO., LIMITED, 25, High-street, Bloomsbury, London, W.C.

The Tourist's India. By Eustace Reynolds-Ball, F.R.G.S., F.R.O.I. Price 10s. 6d.

THE ACADEMY OF MOTORING, LIMITED, 85, New Bond-street, London, W.

The Motorists' Hand book and Calendar for 1907. Price 2s. 6d.

VIGOT FRÈRES, 23, Place de l'École-de-Médecine, Paris.

La Stérilité chez la Femme. Son Traitement par les Agents Physiques. Par le Dr. B. Hugon, Ancien Chef de Clinique Gynécologique. Price Fr.2.

Notions Élémentaires de Prophylaxie des Maladies Tropicales. Par R. Wurtz, Professeur agrégé, Chargé de Cours à l'Institut de Médecine Coloniale de Paris. (Extrait de la Revue de Médecine et d'Hygiène Tropicales.) Price Fr.1.

Manuel Pratique de Massage et de Gymnastique Médicale Suédoise. Par J. E. Marfort, Ex-Professeur de Massage et de Gymnastique Médicale et Orthopédique à l'Institut de l'Empereur Nicolas 1^{er}. Troisième édition. Price Fr.5.

Traité des Urines. L'Analyse des Urines considérée comme un des Éléments de Diagnostik. Par le Dr. E. Gérard, Professeur de Pharmacie et de Pharmacologie à la Faculté de Médecine et de Pharmacie de Lille. Deuxième édition corrigée et augmentée. Price Fr.8.

Manuel de Gynécologie Pratique. Par J. Barozzi, Ancien Interne des Hôpitaux de Paris, Lauréat de la Faculté de Paris. Préface de M. L.-G. Richelot, Professeur agrégé à la Faculté de Médecine de Paris. Price Fr.10.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BEGG, CHARLES MACKIE, M.D., M.R.O.P. Edin., has been appointed Public Vaccinator at Wellington, New Zealand.

BLUCKE, HENRY FREDERICK STOKES, L.R.O.P., M.R.C.S., has been appointed Medical Officer of Health of Shaftesbury, Dorset.

CANN, FRANCIS JOHN HUGHES, M.B. Lond., L.R.O.P., M.R.C.S.; has been appointed Honorary Medical Officer to the Dawlish Cottage Hospital.

CHEATLE, O. T., M.R.C.S., L.R.O.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Burford District of the county of Oxford.

COPLAND, MYER, M.D. Lond. (State Medicine), D.P.H. Camb., has been appointed Demonstrator of Bacteriology in the Faculty of Medicine of the University of Leeds.

ELDER, DOUGLAS, M.B., Ch.B. Liverp., has been appointed Pathologist to the King Edward VII. Sanatorium, Midhurst, Sussex.

FENTON, W. J., M.D. Cantab., M.R.C.P. Lond., has been appointed Assistant Physician to the Hospital for Consumption and Diseases of the Chest, Brompton.

HOGG, ALEXANDER WILSON, M.B., B.S. Edin., has been appointed Public Vaccinator at Wellington, New Zealand.

HUDSON, ARTHUR, L.R.O.P., M.R.C.S., D.P.H. Camb., has been appointed Honorary Medical Officer to the Dawlish Cottage Hospital.

LAWRENCE, O. J. MONTAGU, L.S.A., has been appointed Junior House Surgeon at the Borough Hospital, Birkenhead.

LOVELY, CHARLES NEWTON, M.D., B.S. Durh., has been appointed Honorary Medical Officer to the Dawlish Cottage Hospital.

MCCORMICK, WILLIAM MILLIGAN, M.B., M.S. Glasg., has been appointed Public Vaccinator at Tokomairiro, New Zealand.

RAVES, LESLIE, M.R.C.S. Eng., L.R.O.P. Lond., has been appointed Junior Resident Medical Officer at the Royal Waterloo Hospital for Children and Women.

ROBINSON, H. BETHAM, M.S. Lond., F.R.C.S., has been appointed Surgeon to St. Thomas's Hospital.

SAWARD, A. H. M., M.R.C.S., L.R.O.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Richmond District of the county of Surrey.

STEVENS, WILLIAM MITCHELL, M.D. Lond., M.R.O.P. Lond., M.R.C.S., has been appointed Honorary Consulting Physician to the Royal Hamadryad Seamen's Hospital, Cardiff.

STUART, HACKWORTH, M.D. Lond., F.R.C.S. Eng., D.P.H. Cantab., has been appointed Medical Officer to the Staffordshire County Industrial School, Werrington, Stoke-on-Trent.

THIPP, CHARLES LLEWELLYN HOWARD, M.R.C.S., L.R.O.P., L.S.A., has been appointed Honorary Medical Officer to the Dawlish Cottage Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BATH ROYAL UNITED HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with board, lodging, and washing.

BIRMINGHAM, QUEEN'S HOSPITAL.—Honorary Physician.

BRECON AND RADNOR JOINT COUNTY'S ASYLUM, Talgarth, R.S.O., Breconshire.—Assistant Medical Officer, unmarried. Salary £140 rising to £170 per annum, with apartments, board, washing, and attendance.

BRISTOL EYE HOSPITAL.—House Surgeon. Salary £80, with board and residence.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road.—Registrar for In patients. Salary 20 guineas a year.

CHELSEA, BROMPTON, AND BELGRAVE DISPENSARY, Manor street, King's-road, Chelsea.—Visiting Medical Officer.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £25 per annum, with board and washing.

GLASGOW DISTRICT ASYLUM, Gartloch.—Resident Assistant Medical Officer. Salary £125, with board and lodging.

GLOUCESTER GENERAL INFIRMARY AND GLOUCESTERSHIRE EYE INSTITUTION.—Surgeon.

HAMPSHIRE GENERAL HOSPITAL.—Resident Medical Officer. Salary £20 per annum, with board and residence.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon for six months. Honorarium £20, with residence, board, and washing.

TUESDAY (5th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Dr. J. W. Carr: Clinique. (Medical.) 5.15 P.M.: Lecture.—Mr. E. T. Collins: Physiological Appearances of the Fundus Oculi.

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—10 A.M.: Dr. Moullin: Gynaecological. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Skiagraphy. Dr. Abraham: Diseases of the Skin. 5 P.M.: Clinical Lecture.—Mr. Dunn.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—10.30 A.M.: Clinique.—Medical Out-patient (Dr. Auld). 2.30 P.M.: Surgical Operations (Mr. Carson). Cliniques: Gynaecological Out-patient (Dr. Gilles). Surgical Out-patient (Mr. Edmunds).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. R. T. Hewlett: Medicine. 3.15 P.M.: Mr. Carless: Surgery. 4 P.M.: Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Skin. 3.15 P.M.: Special Lecture.—Mr. Carless: Some Injuries about the Elbow.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queens-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture.—Dr. J. Taylor: Epilepsy.

CHARING CROSS HOSPITAL.—4 P.M.: Demonstration.—Dr. I. Bruce: (Electrical). (Post-Graduate Course.)

WEDNESDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Dr. J. Pardee: Clinique. (Surgical.) 5.15 P.M.: Lecture.—Dr. E. Cautley: Constipation in Infancy and Childhood.

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: Operations. Skiagraphy. 5 P.M.: Dr. Bedard: Practical Medicine.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—2.30 P.M.: Cliniques.—Dermatological (Dr. Meachen). Ophthalmological (Mr. Brooks). Medical Out-patient (Dr. Whipple). 4.30 P.M.: Lecture.—Mr. R. P. Brooks: Ocular Headaches.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. R. Wells: Medicine. 3.30 P.M.: Mr. Cargill: Ophthalmology. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M.: Demonstration.—Dr. A. Wyllie: Pharynx.

THURSDAY (7th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M.: Lecture.—Dr. F. J. Smith: Some New Ideas on the Old Subject of Indigestion.

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: Operations. Skiagraphy. Mr. Dunn: Diseases of the Eye. 5 P.M.: Lecture.—Mr. Baldwin: Practical Surgery.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—2.30 P.M.: Gynaecological Operations (Dr. Gilles). Cliniques.—Medical (Dr. Whitting). Surgical Out-patient (Mr. Carson). 3 P.M.: Clinique.—Medical In-patient (Dr. Chappel).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. G. Rankin: Medicine. 3.15 P.M.: Sir W. Bennett: Surgery. 4 P.M.: Dr. H. Corper: Radiography. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—6 P.M.: Chesterfield Lecture.—Dr. M. Dockrell: Syphilis as it modifies other Eruptions of the Skin: Symptoms, Diagnosis, and Treatment.

CHARING CROSS HOSPITAL.—4 P.M.: Dr. Galloway: Demonstration (Medical). (Post-Graduate Course.)

HOSPITAL FOR SICK CHILDREN (St. Ormond-street, W.C.).—4 P.M.: Lecture.—Dr. Batten: Cerebellar Tumours.

FRIDAY (8th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Dr. J. Horne: Clinique. (Throat.)

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—10 A.M.: Dr. Moullin: Gynaecological. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Skiagraphy. Dr. Abraham: Diseases of the Skin. 5 P.M.: Lecture.—Dr. Abraham: Cases of Skin Disease.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—9.30 A.M.: Clinique.—Surgical Out-patient (Mr. H. Brooks). 2.30 P.M.: Surgical Operations (Mr. Edmunds). Cliniques.—Medical Out-patient (Dr. Auld). Ophthalmological (Mr. Brooks). 3 P.M.: Clinique.—Medical In-patient (Mr. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. R. Bradford: Medicine. 3.15 P.M.: Mr. McGavin: Surgery. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Skin. 2.15 P.M.: Special Lecture.—Dr. R. Bradford: Thoracic Aneurism.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queens-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture.—Dr. J. Taylor: Optic Nerve Changes in Nervous Diseases.

SATURDAY (9th).—POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose and Ear. 2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: Operations. Skiagraphy.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

During the week marked copies of the following newspapers have been received: Scarborough Evening News, Bedford Standard, Cornish Times, Westminster Gazette, Liverpool Post, Manchester Guardian, St. Andrews Sentinel, Dublin Telegraph, Manchester Dispatch, Brighton Evening Argus, Manchester Weekly Times, Medical Gazette, Leeds Mercury, &c.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1906, which was completed with the issue of Dec. 29th, were given in THE LANCET of Jan. 5th, 1907.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1906 are now ready. Bound in cloth, gilt lettered, price 18s., carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2s., by post 2s. 3d.

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

Will Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsgents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and not to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

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METEOROLOGICAL READINGS.

(Taken daily at 5.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 31st, 1907.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Wet-bulb.	Foliar Bulb in Vapour.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 25	30.452	E.	...	35	35	28	...	23	Overcast
" 26	30.420	N.E.	...	65	34	28	...	31	Cloudy
" 27	30.440	W.	...	42	41	27	...	32	Overcast
" 28	31.024	W.	O.C.S.	56	51	32	41	31	Overcast
" 29	19.622	W.	O.C.	71	45	39	37	39	Fine
" 30	29.640	N.	...	65	43	36	37	40	Cloudy
" 31	30.034	N.E.	...	66	38	32	...	33	Fine

Medicine. 3.15 P.M.: Mr. W. Turner: Surgery. 4 P.M.: Mr. W. Turner: Out-patient
Thomson: Diseases of the Throat, Nose, and Ear. 12 noon: Ear
Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Ear
and Throat.

An Address

03

THE TRUE AIM OF MEDICAL EDUCATION
AND THE EVIL OF THE EXAMINATION FETTER.*Delivered before the Hunterian Society on Feb. 15th, 1907.*By LAURISTON E. SHAW, M.D. LOND.,
F.R.C.P. LOND.,PHYSICIAN TO GUY'S HOSPITAL AND MEMBER OF THE SENATE OF
THE UNIVERSITY OF LONDON.

GENTLEMEN,—The subject matter of the annual orations given before the Fellows of the Hunterian Society has not been quite so varied as might have been expected if every Fellow invited by the Council to undertake the duty had been given as free a choice of theme as was kindly allowed to me on the present occasion. Possibly in the earlier days of its institution the authorities expressed a wish that the address should deal definitely with the life and work of the great man whom now as then it is our delight to honour. Even without any such hint the entrancing interest of John Hunter's personality may have led my predecessors in this office to turn again and again to the pleasing task of laying before their fellow practitioners the stimulating example of this great researcher's life-long labours. Every medical man who studies the history of Hunter's life will be encouraged to do what lies within his power to forward the science and art of his profession. Need I then apologise for bringing before you the subject of medical education which in its broadest sense lies at the root of all medical progress? Education rightly carried out may enable every future medical practitioner to follow to some extent, however humbly, in Hunter's footsteps, but unintelligently pursued may so deaden the germ of observation with which all of us are born that none but a genius of the first rank will be able to rise above the dull level of average authority.

The records of the first years and the last hours of John Hunter's life afford material for thought to those interested in medical education. The absence of any formal instruction in school work such as at the present day constitutes what is called preliminary education has not escaped the notice of his numerous biographers. At the age of 21 years, when John Hunter commenced his study of medicine in his brother's dissecting room, it is certain he could not have passed the simplest preliminary examination in arts that has ever been imposed by any diploma granting body upon its intending students. No one, perhaps, would say that this absence of ordinary routine school education was the cause of Hunter's later extraordinary mental development. It is, however, an open question whether a firm disciplinary control by schoolmaster and university tutor over Hunter's earlier years might not have so curtailed his inquisitive and reflective faculties as to have changed one of our most brilliant thinkers into a merely successful practitioner. The failure of the schoolmaster to exercise control over budding genius is an outstanding feature in the biographies of many great men. The relation between this early refusal to be guided by masters and the subsequent power to lead mankind is worthy of careful study. Geniuses are too rare and too eccentric to allow us lightly to draw deductions as to the proper methods of their cultivation. This common feature in the early history of many brilliant men should, however, give pause to our efforts to force into a common mould every expanding brain for whose development we may be responsible.

Turning to the tragic circumstances of Hunter's painful and sudden death may we not speculate that the evening of our great man's life was sacrificed to his own appreciation of the evils of traditional bondage in educational matters? The excitement which caused his fatal heart failure at the age of 65 years was due to his vigorous protest before his colleagues at St. George's Hospital against the exclusion from the advantages of his teaching of men whose preliminary instruction fell short of official requirements. No doubt Hunter recognised that if the same barriers had been set up in his own case he would have been shut out from the

in which he could not but know that he had attained remarkable success.

While these incidents at either end of Hunter's life raise interesting questions as to the need and value of systematic education a perusal of his writings directs the reader's attention to the effect of its absence upon his own literary style. Professor T. Clifford Allbutt, whose keen criticism of his medical brethren's English hangs over all of us like a nightmare, can only forgive Hunter's defective powers of expression because of the genius of the man. "John Hunter," he says, "an illiterate genius clutching inarticulately at the evasive shadows of truth commands our labour and our time." The two-fold power so seldom owned by one man of searching out the hidden facts of nature and of telling in clear language the truths that he has learnt will always command our highest admiration. The graceful literary style which lures us on to read the immature reflections of the untrustworthy observer is one of the most dangerous possessions. Might not a facile pen have too early drawn John Hunter from his bench to his writing table? If he could have told us more fluently what he saw would he have seen so much?

These aspects of Hunter's life and work serve to remind us of the great power for good or evil which the method of his education may have upon each individual of the medical profession. The society founded to commemorate Hunter's work seems a very proper body to consider how far this power is sufficiently taken into account at the present day. I submit the subject of this address to my fellow Fellows of this society confident of their interest in the matter and of their power to influence public opinion if they are convinced of the necessity of change. Improvements and modifications of methods of education are seldom welcomed by those actively engaged in carrying out existing schemes. If we would reform our universities we must not appeal exclusively to the Dons; nor can we rely on the initiative of the headmasters to remove defects from our great secondary schools. It is from the general public, and especially from the parents of intending scholars, that the motive power for general educational reform must come. In any movement for applying modern educational principles to the course of study for medical practitioners the Fellows of such a society as our own, showing by their fellowship their interest in the progress of medical knowledge and unfettered by the traditions that bind too many of our teachers, may surely be trusted to take an active part.

You will, I think, be glad to hear that it is to general principles rather than to details that I propose to ask your attention. I do not propose to enter into the vexed question of the length of the different stages of the curriculum nor of the actual subjects appropriate to each stage. On the much-debated point of the subjects of the preliminary education demanded before admission to technical instruction I will only say this. In my opinion the profession would be well advised to refrain from adding to the existing difficulties of the schoolmaster by requiring an intending medical student to specialise in any way during his school days. We want to give the best brains of the best boys from the best schools the opportunity of being devoted to medicine and we can well take the risk as to the particular material stored within those brains being of the sort we should expect *a priori* to be most useful.

The point to which I would particularly ask your attention is the blighting influence of the examination system upon the whole work of teachers and pupils from beginning to end of the modern medical curriculum. I desire to maintain the thesis that the examination fetter, if I may so call it, is year by year gaining a greater hold on medical education; that its influence is wholly detrimental to our true aims and has a demoralising effect upon both the parties engaged in teaching; and, moreover, that this is the case, notwithstanding the fact that the peculiar features of medical education make it easier than in almost any other branch of study to free ourselves from the trammels of the system if those interested could be brought to appreciate the evils of the present position. The task of gaining a general agreement upon the failure of present methods to secure our highest aims, though difficult, should not discourage us. The harmful influence of examinations upon learning has long been clearly recognised by educational experts and is daily gaining more general acceptance. In many departments of

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Never can teacher or pupil forget the examiner's existence. Each is handicapped at every step by the question, Will this work pay? At the end of this hour's study shall I be a better answering machine? I have taught in a medical school for over 20 years and I know, alas, only too well, the sort of teaching that will "pay" in this sense. In a desperate desire to get my pupils through their examinations so that they could begin to work for work's sake, the only sort of work that's worth doing, I have deliberately crammed them. Often my conscience has revolted against it, and I have taken advantage of their faith in my powers to get them through their examinations by engaging them in work that would improve the powers of their minds. After a time my subterfuge would be found out. As I adopted one or other of these methods, the method of cramming or of attempted mental development, I could fill or almost empty my out-patient room with certainty. For with the best intentions none but the highest class of student can afford to seek true learning until he is through his examinations. Too often when this time comes the student is obliged to separate himself from his hospital, and if he still has a desire for learning he is handicapped by the isolation of private practice. But in many cases, whether thus handicapped or more fortunately placed, the student finds that his crammed brain is no longer capable of rational development. His desire for knowledge, his powers of observation, his capacity for reflection, his judgment, and his reasoning faculties have all been crushed, some perhaps out of existence, by the 15 or 20 years of systematic education that he has suffered under the domination of the examination fetich.

Some will no doubt regard this picture as over-coloured. They will recall their own experience as candidates at examinations and will fail to recognise such disastrous results as I have here portrayed. While the act of preparing for an external examination, as an alternative to some better educational occupation, must in all cases be detrimental, the evil effect is less, the less are the time and labour thereby entailed. Fortunately, so long as the examination is only a pass examination and has therefore to be adapted to the requirements of men of average ability, it does but little active harm to the man whose ability is well above the average. Educational policy is generally decided by men whose ability is such that they suffered but little from a system which may have done great harm to their inferior competitors. Even men whose brilliant genius has enabled them to secure the highest competitive prizes without material harm are sometimes inclined to regard their subsequent success as being a result of, rather than in spite of, their misdirected efforts. The withdrawal at the older universities and elsewhere of the system of placing candidates in order of merit, which culminated a few days ago in the abolition of the Senior Wrangler at Cambridge, is a recognition that the struggle to secure high places in such contests is bad for the brains of those that compete and does not further the true aim of education. It is true that many Senior Wranglers have done good work in the world and many useful medical practitioners are turned out despite our present system. Cambridge believes that in future the man who would under existing conditions have been Senior Wrangler will be a better man because he will be deprived of the opportunity of developing his mind on wrong lines. Those who desire to see the examination system altered in medicine believe that all those men who turn out well now might turn out better, and many who turn out badly now might turn out well.

Is there any profession in which the highest mental faculties are more necessary for even its humblest members than in that of medicine? What is the use of developing only the power of a man's mind to contain facts who is destined to practise in our profession? In such a progressive science the fact of to-day is the antiquated superstition of to-morrow. What we must aim at turning out of our schools is not the man primed with a complete knowledge of all possible beliefs held by his various examiners at the date of his qualification, but a man capable of criticising these beliefs with sound judgment even if he has never heard of them before. We must turn out men sufficiently shattering of these beliefs by its progress and able to estimate the value of others introduced to take their places. Every medical man should be capable of such accurate observation and true deduction that he may, however humble his practice, be able to make distinct contributions to the advancement of learning. Nothing has been more

depressing in recent years than the progress of the idea that a special race of researchers must be bred to advance medical knowledge. Men who are to be freed from the routine of education or practice, safely shut away in their laboratories from students and patients, and prepared for their incarceration by a period of special study, preferably in Germany. In a recent controversy in the *Times* the development of such a class of researchers in neurology is advocated as the first essential step in dealing with the growth of insanity. Surely the first step is so to educate our medical officers of asylums as to make them capable of research and then to arrange their routine duties so as to allow them leisure to undertake it.

To encourage men's power of research or, as I should prefer to call it, the power of learning from everyday facts, must be our constant aim. This power exists in every sane human being at birth and it is the chief condemnation of most modern education that it tends to strangle instead of to cultivate it. If we could stop the strangling process so far as medical education is concerned and turn out all our students able to learn from what they see the result on the progress of medical knowledge would indeed be satisfactory. But apart from enabling him to take his share in the general advancement of science every private practitioner needs for his personal service to the individual patient a high development of his powers of observation and deduction. For the diagnosis of any case no amount of mere fact knowledge will avail the man who has not trained his eyes, ears, and fingers, as well as his brains, in a way not demanded in the pursuit of examinal success. This fact is indicated by the common observation at the hospitals that the best man at examinations often turns out the worst in the house appointments.

It is the fashion to upbraid our manufacturers for not finding places for university men in their works, as the wiser manufacturers on the continent and in America are said to do. How can we expect it to be otherwise when university education in England, dominated by the examination system, has such an influence even on medical students, that eminent surgeons, themselves examiners, have openly expressed the wish that they may never have a gold medalist in surgery appointed as their house officer. I have heard it stated, but can hardly believe it to be true, that in some medical schools the resident staff are selected by competitive examination. It is certainly an exception to find in any educational establishment, however successful in preparing students for examination, this system being used to select persons to carry on work within its own walls. Can we imagine a school in which the prefects or assistant masters were chosen in this way, or a university setting up a competitive examination to choose its professors? If we recognise that our house officers working under the control of their former teachers must have their powers of observation and sound judgment unimpaired, what shall we say of those who, immediately after their qualification, start forth into private practice? They do, indeed, require to maintain a judicial attitude of mind amidst the constant conflicts of rival methods of new treatments that will be submitted for their judgment. Is not the rich harvest of the synthetic chemist with his daily output of new hypnotics, nerve tonics, and cures for gout, are not the sudden rise and fall of so many methods of cure, whether by drugs, surgery, heat, light, or electricity, evidence of the need of greater development in medical students of those parts of the brain which preside over sober judgment and common sense. The ability to judge whether a new method of treatment is likely to be of value and of putting such method to a scientific test is not gained by learning by heart all the various means of treatment of every disease mentioned in the most complete system of medicine. A man who has in conjunction with his teacher properly established or failed to establish the efficacy of any single mode of treatment in a large series of cases has a sure basis on which he can safely found further experience.

One of the worst features of examinations is the tendency they have to be so conducted as to require the knowledge of an increasing number of facts from succeeding batches of victims. This raising of the standard, as it is called, is the only defence of the examiner against the crammer. Leave the number of facts required stationary and the percentage of successful candidates would steadily increase. By a careful study of examination papers and of the ways of particular examiners a teacher gradually learns to pack his pupils' brains with facts, with so much regard to the ease

education the fact that examinations still hold a prominent place is not due to any lack of hatred of their results but to the difficulty of finding an alternative. Amongst the official teachers of medicine, however, it does not appear that these evils are so widely recognised as by other bodies of teachers. This is the more to be regretted because, as I have just said, it is possible in medicine to set up without great difficulty alternative methods of securing what are supposed to be the objects of examinations.

To make my point clear I must first ask you to consider what is the true aim of medical education. It cannot, I think, be better or more briefly defined than by Matthew Arnold's statement of the true aim of education generally. "Its true aim," he said, "is to develop the powers of our mind and to give us access to vital knowledge." If this is the true aim we must consider how far the ideal modern examination is able to discover at the various stages of a man's curriculum whether his education has been carried out so as to secure this aim. The ideal examination of those who worship this fetich wholeheartedly is one conducted by an examiner who knows each candidate only as a number, or if, owing to the examination being a viva voce one, he must be brought into actual contact with a candidate shall not have seen him before, or at least shall have no previous knowledge of the "powers of his mind." It is an essential article of the true faith that an examiner of a candidate shall not have been his teacher. The only person who is really in a position to say whether the powers of the candidate's mind have actually been developed by the preceding course of study is ruled out of court when the result of that course of study is under scrutiny. What as a matter of fact can be tested by the ideally fair external examination? By an external examination I should perhaps explain is understood one in which the teacher has no part, it being usual to style an examination partly or wholly conducted by the candidate's teacher an internal examination. Only to the smallest extent can the powers of the mind at the moment be tested. One power of the mind can, perhaps, be tested by this means—the power which is commonly spoken of by teachers who are constantly engaged in a contest with external examiners as the knack of passing examinations—the ability to keep one's store of facts on the surface and to pour them out speedily in the presence of a stranger—the power which is essentially created and promoted by the crammer, a mixture indeed of memory and cheek. This knack is truly an attribute of mind, just as bulk is an attribute of muscle. It is just as illogical, however, continually to worry a man who is trying to develop the higher faculties of his mind with investigations as to his memory as it would be periodically to test the lifting power of a man who is learning to play the fiddle. The comparison between these two absurd processes is very real, for the sort of work that would increase the violinist's muscular force would actually lessen the subtle power of coördination essential to his art. In like manner does the cramming of a student's memory exercise a deteriorating effect upon his higher intellectual faculties.

How, then, is it to be explained that notwithstanding the growing appreciation of the limited power of the examination we in England came during the last half of the nineteenth century to make such extended use of it? The explanation is to be found in the fact that all Britons love fair play and a substantial majority hate patronage. They love fair play and they hate patronage much more than they believe in education. The apotheosis of the external examination took place at the time when the democracy growing in power decided that patronage could no longer be tolerated as the means of choosing candidates for positions of responsibility. The absolutely fair competitive examination first acquired its popularity, not as the final act in a course of education but as a preliminary step before conferring positions of honour or remuneration upon successful candidates. It came into general use to lessen the moral harm of nepotism which, hurtful as it was in an aristocratic and feudal community, became much more pernicious with the growth of commercialism and plutocracy. I cannot better illustrate the moral evils which the competitive examination system was intended to root out of our public services than by drawing attention to the hatred of the system by those interested in corruption. In a recently published American skit on municipal methods in that country there is a chapter on the Curse of Civil Service Reform. Mr. George Washington Plunkitt, chairman of the elections committee of Tammany Hall, is there reported as saying:

"When parties can't get offices they'll bust. They ain't far from busting point now with all this Civil Service business keeping most of the good things from them. How are you going to keep up patriotism if this thing goes on? You can't do it. Let me tell you patriotism has been dying out fast for the last 20 years. Before then when a party won its workers got everything there was in sight. That was somethin' to make a man patriotic. Now when a party wins and its men come forward the answer is, Nothin' doin', unless you can answer a list of questions about Egyptian mummies, and how many years it will take a bird to wear out a mass of iron as big as the earth by steppin' on it once in a century."

Even as a means of selecting suitable candidates the examination is coming to be recognised by others besides the bosses of Tammany Hall as very unsatisfactory. It may avoid moral harm to those engaged in selection by older methods and may insure absolute fairplay as between the candidates, but it constantly fails to secure the man best fitted for the vacant post. By no system of mere examination yet devised can the crammer and the special examination brain be got rid of. In India perhaps more than anywhere else in the British Empire has it been shown that the gift of passing examinations may often be the only valuable gift possessed by the candidate. Those who are most grateful to the examination system for the part it has played in freeing us from patronage must admit that as an instrument of selection it leaves much to be desired.

As an instrument of education the external examination became most widely used when the support of elementary schools out of public funds made it necessary to ensure that the education therein carried on deserved the approval and reward of the authorities. Here again we missed the true aim of education in the pursuit of absolute fairness. To decide in any school whether the powers of the children's minds are being developed it is necessary to rely on the word of the teacher and upon more or less imponderable impressions of the inspector. Herein lie risks of favouritism and inequality of rewards. By the external examination thousands of children can at the same moment answer the same question and examiners having no knowledge of who the candidates are or where they come from can with perfect fairness give the proper mark for every gradation of accuracy. Thus there can be distributed throughout the schools the fitting grant due to each for having taught its pupils the knack of answering questions. Fortunately, the folly of this system has now for some years been recognised so far as those children are concerned for whom the Board of Education is responsible. Something very similar, however, still obtains in the preparation of the children of the wealthy for their public school and university entrance scholarships.

In medical education, especially in London, we are to-day, except for the fact that there is no direct money payment from the State, in almost an identical condition to that of the elementary schools during the prevalence of the "payment by result" system. The teaching in our hospitals is being constantly interrupted by tests conducted by external examiners. For many of our students who are of average ability and do not fail to pass any examination such interruptions may occur as many as 12 times in the course of six years. And these interruptions are permitted to a series of courses of study which without them present almost an ideal opportunity for improving the powers of the pupil's minds. In almost every department of medical study and with proper organisation, it should be so in every department, the chief teacher and each of his subordinates is engaged in increasing the sum of knowledge of his special subject and in making and assisting others to make wise application of ascertained facts to actual problems before him. To associate the student as closely as possible in this double work of investigation and practice is to promote his education in the truest sense. The closest living contact between teacher and taught in mutual work is the surest way of developing the pupil's mental powers. But no sooner in the medical school do we introduce the student to his teacher than there is brought between them with chilling effect the spectre of the examiner. The absolutely fair person who with no knowledge of the candidate's work beyond a bare record of satisfactory attendance at so many lectures and so many hours' laboratory work will proceed at the end of three, six, or 12 months, as the case may be, to test just those unimportant things that can be tested by examination.

student's memory of things described by the demonstrator, and the men who passed were generally those who had not spent too much time on dissection.

What would I not give now as a teacher of clinical medicine if it could be arranged that the work which the men do at the bedside, in the post-mortem room, and in the laboratories could be given in their eyes its proper relative value as compared with the facts they are told at lectures and read in text-books? Really there should be no difficulty in providing for all the tangible results of each student's practical work, his clinical records, his charts, his bacteriological, chemical and hæmatological reports, together with duly attested microscopical slides, heart and pulse tracings, photographs, and drawings to be kept available for surprise visits of the inspector who should satisfy himself that the work is being properly done as well as fairly marked. How much more valuable would all these records be than those prepared under existing conditions, when every ward clerk knows that it pays better to learn what the appearances of optic neuritis are said to be than to "waste" time, as he would call it, in seeing and making a diagram of a particular example. A physician or surgeon surrounded by his small array of students working on these lines, instead of by his present flock hungering for examination tips, might hope to prove false the statement that advances in our science can only be secured by a special class of researchers. Our wards might once more become centres of learning in place of centres of teaching. I must not detain you by picturing the millennium in medical education which will appear when examination is replaced by intelligent inspection. I should run the risk of being accused of overstating my case, but not, I believe, by those who have studied the principles of education.

Already inspection has entirely replaced examination in some branches of scientific studies carried on under the control of the Board of Education. In other branches of study, particularly in Engineering, the records of work done during the instruction course are allowed to count materially towards the marks for the qualifying examination. Even in medicine a pious opinion has been officially expressed in favour of the principle of registration and inspection. The Faculty of Medicine of the University of London has recently reported as follows to the Senate:—

The Faculty is of opinion that a great educational advantage would be secured if the University were to extend its inspection to all practical work done by its undergraduates in each school with the object of allowing the report of its inspectors to carry some weight in the examinations for which the students are preparing. Though conscious of many difficulties the Faculty believes that such a scheme is possible and would urge the Senate and governing bodies of the schools to prepare for it.

Many difficulties are recognised in securing this limited use of inspection in conjunction with examination. But they will assuredly be overcome, and once the system obtains a footing it can hardly be doubted that it will ultimately be generally acclaimed as a highly satisfactory means of overthrowing the evil of the examination fetish and of allowing us to attain the true aim of medical education.

LONGEVITY.—The Rev. Hugh Pritchard of Mangaffo, Anglesey, commenced his hundredth year on Feb. 25th.—Mrs. Honor Coleman of Cleve, Bristol, celebrated the anniversary of her birthday on Feb. 22nd, having attained the remarkable age of 105 years.

ST. MARK'S HOSPITAL.—Sir Richard B. Martin, treasurer of St. Mark's Hospital, presided at the seventy-first annual meeting of the governors on Feb. 14. In moving the adoption of the report he said that the committee had been compelled to sell out stock to meet pressing demands and that the sum of £1000 in new annual subscriptions is essential for the maintenance of the work at its present level. He referred to the high character of the nursing, which is so important a factor in the treatment of the distressing diseases dealt with by the hospital. Mr. F. Swinford Edwards said that the hospital gave special treatment to a special class, but though the cost of "dressings," &c., was of necessity high an examination of the details of expenditure showed that affairs were managed most economically. A notable feature of the year under review was that though cases of great gravity had been treated the patients were being passed through the hospital more rapidly than hitherto, in other words, they were being cured more quickly. The usual votes of thanks terminated the proceedings.

A Lecture

ON

FAINTS AND FAINTING.

Delivered at the National Hospital for the Paralyzed and Epileptic, Queen's-square, London, W.C., on Feb. 14th, 1907.

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F.R.S.,

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GENTLEMEN,—You are all familiar with what is called a "faint"; many of you may know what it is "to faint," perhaps by your recollection of the first severe operation you witnessed. "Cardiac syncope," we call it in medicine. Our Anglo-Saxon ancestors called it "swooning," a word less used to-day than it was not long ago. It is related to "sigh" and perhaps arose from the irregular breathing often observed. "Faint" came to us through the French from the verb we still have in "feign." "Faint" was spelt indifferently with an *a* or an *e*. The latter spelling now retains the early meaning; with an *a* the significance has been differentiated into that which concerns us to-day. So great a change a single vowel makes, that a faint, if feigned, is a feint.

Familiar as fainting is, adequately as we seem to know it, there is much in it that we do not know. Our knowledge is just enough to obscure our ignorance. The most obtrusive feature of complete cardiac syncope is the loss of consciousness which results, evidently due to the failure of the action of the heart which precedes and attends it. But consciousness is not the result of the circulation of the blood. To say this is to state an obvious truism, for the two are totally different in nature. Hence the loss of consciousness cannot be the direct consequence of its cause. Its immediate cause must be a state of the nerve elements of the brain due to the change in the circulation. We are apt to overlook this when we think of the process of fainting, but its recognition is of great importance because consciousness may be lost from other causes. Its loss is the most common feature of the epileptic seizure. Not long ago it was thought to be a constant feature; without such loss an attack was said not to be epileptic. We now know that this is altogether erroneous. Minor attacks are common in which consciousness is only blurred, and in local spasm especially it may be unimpaired. Still, it is the dominant feature in each condition and it involves a relation between them of considerable practical importance. This is the greater inasmuch as the nature of the brain state on which it depends in each is unknown. We do not know whether it is the same or different in fainting and epilepsy. The only indications we can obtain depend on the discernment of any relation between the two.

Other questions regarding cardiac syncope need consideration. How is it that the state of the brain results from cardiac failure from the diminished circulation it causes? Perhaps the first reply that would be given to the question is that the heart's failure entails a diminution in the supply of nutrition to the brain incompatible with its function. But a little consideration will throw doubt on the adequacy of this mechanism. The renewal of nutrition of the nerve elements, the supply on which their metabolic processes depend, is from the plasma about them, derived from the blood, but for the time extravascular. At any moment the amount of this must be adequate to maintain the metabolic changes and the function that depends on these for a much longer time than that during which consciousness is maintained in syncope. How incompetent this influence must be to account for the loss is evident from the features of the fatal syncope of aortic regurgitation. The sudden death in this disease, rare though it is, is clearly syncopeal. But the loss of consciousness seems almost synchronous with the cardiac failure. In this instance we cannot even conceive that it is due to the failure of nutrition.

Another mechanism, far more definite, consists in the mechanical effect of cardiac failure. The resulting diminution in the blood pressure within the cavity of the skull, not merely from the lessened arterial pulsation but from the lessened force exerted by the blood within the arteries, must

of unpacking that the success of the dullest can be almost assured. To avoid this the conductors of every well constituted examination are constantly adding to the number and variety of the facts that may be dealt with in the questions. Thus is the time that has to be given to preparing for the examination increased. It is impossible in a subject like medicine to lengthen the curriculum, which therefore becomes more and more crowded with courses of didactic teaching.

This overcrowding of the curriculum deprives our students of the opportunities of developing qualities which, in addition to those I have above mentioned, are specially needed by them in their subsequent life's work—health of soul, health of mind, and health of body. For the development of all these leisure is essential and the aggressive tendency of the examination is largely responsible for its elimination from our schools. I know there are some who seem to believe in the verbal instruction of Watts's line about Satan and idle hands. That it is true in any case is due to the defective methods of preliminary education, upon which I cannot now enter. The boy should be taught to use his leisure, which indeed the very name of school implies, and the young man should have leisure to use profitably. Leisure is one of man's most blessed possessions and that it is the duty of each to endeavour to secure his proper share thereof and use it properly is a doctrine that should be preached by the medical profession. We should set our own house in order before we can hope to be successful preachers. Certainly our schools of medicine do not set good examples whether we look to the teachers or the pupils. As a first step to reform in this direction we should see that our students have reasonable leisure—leisure to strengthen their characters by doing such social service as lies at their hands, leisure to give their minds the rest which is essential to their development, and leisure to promote their bodily health by the necessary indulgence in physical exercise. All these things they need if they are to be useful medical practitioners, all these things they run a risk of not being able to secure owing to the ever-increasing demands of the examination system.

While examinations are thus seen to be a distinct impediment to attaining the true aims of medical education the evil effect is greater in some systems of examination than in others. The evil is greater the more "external" the examination; it is less the more "internal." The external examination, it will be remembered, is the form I have described as the ideal of the true worshipper of the examination fetish. It is carried on by one who knows the candidate only as a number and who has no knowledge of the course of education he has pursued; indeed, in the extreme case the true worshipper cares not that the candidate has pursued any course of education at all. What he knows he knows and it matters not how he knows it. The internal examination, on the other hand, is conducted by the principal teacher responsible for the course of education, the result of which the examination is designed to test. In internal examinations which are part of a course of instruction at the end of which diplomas or degrees are granted an assessor or external examiner is usually associated with the internal examiner. Inasmuch as one of the worst effects of the examination system is the introduction of a foreign and disturbing element between the teacher and his pupil, in the form of the unknown and unknowing examiner, the internal is less harmful than the external examination.

Whenever the teacher is the principal examiner the relationship between him and his pupils becomes at once more intimate. Each can afford to look into the other's mind. The teacher employing the experimental instead of the didactic method of instruction can lead his pupil into the paths of learning he is himself exploring regardless of whether they will lead to conclusions acceptable to the average examiner. Provided the powers of the assessor are not too great the teacher can devote himself to the business of improving his pupil's mind without anxiety as to the number of facts and theories that are being stored up. Nevertheless, there is always a risk that both teacher and pupil may allow their work to be subordinated to the interests of the examination and may even under this system forget the truth of one of Mr. Birrell's recent *obiter dicta*: "We tell whether a man has been well educated not by what he knows but by what he can understand."

Unfortunately, in medical education the external examination is a much commoner test than the internal and those

who would minimise the worst evils of the system should endeavour wherever possible to transform external into internal examinations. It is, indeed, the necessary first step but it will not be an easy one. Its difficulty is well shown by the fact that in some educational circles the internal system is contemptuously spoken of as "branding one's own herrings." Perhaps the application of this commercial phrase to a matter of higher education in England is to be excused when one considers the economic conditions under which higher education has had to be carried on in this country. Even a professor must live and if it is recognised by critics that the unendowed professor's living wage or less depends upon the number of students he can attract to his class, it is perhaps not remarkable that he should be suspected of being capable of branding some of his unworthy pupils AI in order to attract others to put themselves into his generous hands. To a large extent the curse of the external examination is the price we pay for the public neglect of medical education. Competition between unendowed schools prevents those in authority from trusting the teachers. The proper endowment of medical education by private munificence, as in America, or by the State, as in most civilised countries on the continent of Europe, would at once remove the chief obstacle to the institution of internal examinations. But even without adequate endowment it is possible to some extent to lessen the distrust of the teachers. By voluntary co-operation between the schools the spirit of rivalry may be eliminated and the staff may be brought to believe that mutual help may be as productive of good to education as the competitive methods of modern commercialism. By a fusion of the pecuniary interests of the schools it becomes possible to allow a free hand to the competent teacher in securing the development of his pupils' minds. The more the governors of our hospitals in university towns find themselves able to transfer to the university authorities the control of the purely educational part of their great charities, the easier will it be to assure the public that the teachers may be trusted. The medical schools in connexion with our voluntary hospitals must become to outward appearance as well as in fact public educational establishments, in order that the unwarranted suspicion may be removed that medical education is a lucrative business carried on for the private gain of the members of the staff who cannot therefore be trusted to "brand their own herrings."

Fortunately, there are indications that the public is beginning to appreciate its responsibility with regard to medical education and to recognise that endowment is as essential to the efficiency of medical schools as it is to all other institutions for higher education. Reform by this means will come slowly, and it is therefore fortunate that meanwhile other measures can be adopted to lessen the incubus of examinations, whether external or internal. It is because the study of all subjects in the medical curriculum is so essentially practical that this relief is at once possible. It has long been agreed that in all subjects in which it can be carried out the best education consists in the actual performance by the student of a properly thought-out course of observations, manipulations, and experiments, including, when feasible, real original work. This, which is usually called the experimental to distinguish it from the didactic method of teaching permits of the preservation of records and results for periodic inspection. It is the method which the late Sir Michael Foster introduced with so much success into the biological school at Cambridge. I doubt if there is any subject in the medical curriculum which could not be treated in this manner, and I am sure that every subject would be the better from the educational point of view for being so treated. I need not go into details. Two subjects at either end of the curriculum will illustrate the point, biology and clinical medicine, in both of which I have had practical experience as a teacher. What would I not have given as a demonstrator of biology if I could have insisted on such a careful preparation of dissected specimens, diagrams, and drawings as would be entailed by the introduction of a system of daily marking for observations made and practical work done, accompanied by periodic inspection. How much more thorough and instructive would have been our work than that which we did in definite preparation for a single external examination at the end of the course. It is true there was what was called a practical examination, but the possible practical tests were exceedingly few and well-known beforehand, so that success really depended on the

Recovery was then by mental confusion, not lessening faintness, and at first she could not tell where she was.

CASE 3.—Another patient, regarding whom the facts could be ascertained with considerable precision, was a woman who became prone to faint in early girlhood, especially in hot, crowded places. In these she first became pale, felt faint, and gradually lost her sight, and then, if she tried to stay where she was, she lost consciousness. Usually, when sight had failed, with help she was able to walk out of the place. During the effort dim sight returned and the fresh air quickly restored her. These are the typical symptoms of cardiac syncope. Such faints continued until she was 30 years of age, when she became liable to sudden brief loss of consciousness in which she often fell and sometimes hurt herself. After these she usually slept and usually could not afterwards recall what had happened between the attack and the sleep. One occurred in a room with the door locked; the noise of her fall alarmed her friends, who knocked at the door. She got up and opened it, then she lay down and went to sleep, but afterwards remembered nothing of the incident. Such attacks were undoubtedly epileptic and after they began she ceased to be liable to the faints. She never had a convulsive seizure but the attacks continued until she came under treatment at 42 years of age, when they were arrested by bromide; she has since continued free. There were no heart disease and no family history of epilepsy, and no cause could be ascertained except the apparently disposing influence of the cardiac faints.

These cases present strong evidence of the influence of repeated cardiac syncope in disposing to epilepsy. They suggest that the state of the nerve elements that underlies the loss of consciousness in syncope may, by repeated induction, acquire a tendency to spontaneous development, which constitutes minor epilepsy. The following case presents a similar indication, slightly different in nature. Attacks of unconsciousness occurred with the suddenness of minor epilepsy, but after an excitant such as induces syncope.

CASE 4.—A married woman, aged 33 years, came under observation on account of slight hemichorea of two months duration. She had had an attack of chorea at 19 years of age, lasting for two months, and another at 33 years of age, lasting for six months. There was no heart disease. At the age of 34 years she cut her finger badly; two days later the bandage suddenly slipped off and at the sight of the cut she instantly fell unconscious, hurting her nose in the fall. She breathed heavily for ten minutes and then recovered. When she was 37 years of age she again cut her finger slightly and immediately became "dazed," became pale, and then lost consciousness for five minutes. The first of these attacks had the definite features of minor epilepsy in suddenness and character, although excited by an occasional cause of syncope. The second was due to a similar cause and resembled syncope in its less sudden onset and in the fact that pallor preceded loss of consciousness, but before the pallor there was definite disturbance of function in the brain. The features of these attacks are of obvious interest in relation to the question of identity of nature.

Whatever is the relation of the brain process in syncope and epilepsy the two are brought together in a very practical way by the frequent difficulty of distinguishing one from the other. The difficulty often exists when it should not, and in characteristic forms of either it can scarcely arise. That it is sometimes reasonable is evident from the fact that attacks that are originally syncopal seem sometimes to become epileptic. But when the diagnostic difficulty is not reasonable it may be very real. Its reality justifies a scrutiny of its causes, which is further justified by the fact that it reveals instructive features which might otherwise escape attention.

The error of regarding minor epilepsy as cardiac faints, which is the more common, is often promoted by the natural tendency to perceive the less grave. The distress that is caused by the recognition of epilepsy naturally deters from the diagnosis and causes all reasons for doubt to receive great weight. Inclination may distort the vision even of a well-balanced mind and cause a mental astigmatism, by which lines in one direction appear more distinct. Instances of this are very common. A pertinent example came to my notice recently, which conveys a special lesson in diagnosis. A patient with no relevant disease told me, as an unimportant incident, that he had recently fainted just as he had finished his dinner. He had

taken nothing doubtful or unwise. On inquiry as to the features of the faint, it seemed that just as he had finished the meal before rising from his chair, he suddenly felt extremely sleepy and knew no more until he heard the words, "Are you better now?" from a companion who, seeing he was unwell, had saved him from falling off his chair. He had been unconscious about two minutes and became drowsy in aspect. On recovering he was well almost at once. These are not the features of a cardiac faint. Such sudden, intense, brief sleepiness is not met with at the onset of syncope and is often met with in minor epilepsy; this is true also of the dusky tint, which indicates impairment of breathing, not of the heart, while the very sudden return to the normal state is also an epileptic indication. Whatever were its immediate cause and remote significance, it was certainly not a cardiac faint.

The error of regarding attacks as syncopal when their features indicate that they are independent of the heart is promoted not only by a tendency to take the milder view but also by the fact that sometimes their characters may suggest a cardiac origin. One of these is a sensation referred to the heart or its region. When it is really an epileptic aura, it seems to indicate that disturbance of the heart is the first element and that its failure causes the loss of consciousness. Such an error is the more easy because a cardiac aura is not common in epilepsy and its occurrence may even be unknown.

CASE 5.—A boy, aged 16 years, had "fainted" about a dozen times during a fortnight, nine months before he was seen, but not again until the previous week. During this he had fainted eight times, always in the day. In the first series, each faint had begun by a sudden stab at the heart, instantly followed by unconsciousness. In the later attacks the cardiac pain was also the first symptom, but was slighter and less brief and was accompanied by a sense of nausea and giddiness. After a few seconds he fell from sudden loss of consciousness. On its return, after a "minute," he struggled and had to be held down, evidently in the hysteroid state that so often follows minor epilepsy, but never occurs after cardiac syncope. Yet the case had been regarded as one of simple cardiac faints on account of the initial pain, which was really an epileptic aura. It is noteworthy that when it became more deliberate, the disturbance spread in the central relations of the vagus, causing the sense of nausea and associated giddiness, which are not uncommon but might have been thought to be evidence of a gastric cause.

Less frequently simple cardiac faints are thought to be minor epilepsy, chiefly when the patient is a member of a family in which epilepsy has occurred. Hereditarily naturally excites suspicion as to the nature of loss of consciousness.

CASE 6.—A girl, aged 18 years, whose cousin was epileptic, had suffered from loss of consciousness several times during the preceding year and the attacks were regarded as minor epilepsy. But each had occurred under conditions capable of causing cardiac syncope. Each began with pallor and a sense of faintness; in each sight failed first and then consciousness was gradually lost. There was no rigidity, and recovery, on being laid down, was by a slowly lessening sense of faintness, without any mental confusion. The opinion that they were simple cardiac faints was confirmed by complete recovery under tonics.

As the last case shows, the fact that an attack is excited by an external influence is important as confirmation of its syncopal nature, when this is also indicated by its features. Too much weight should not be placed on the fact that it is thus induced, unless the exciting influence is distinctly such as causes syncope. Even then it should be subordinate to the character of the faint. As a general rule, in the differential diagnosis of disease, symptoms must be combined and their relative weight considered. Distinctions are not always distinctive.

Epileptic attacks also are sometimes excited by an external influence, sometimes by such as might seem likely to cause syncope. A sudden noise, such as the sudden slamming-to of a door, may cause an attack of unquestionable minor epilepsy in those who are subject to it. A sudden sound is always, as we say, "startling." The "start" is a sudden movement which represents the instant motion to escape from danger, which is so familiar to us in lower creatures. Indeed, this may have led to the term "e-motion" as a designation of the class of mental processes of which the fear that excites movement out of danger is the most frequent in the animal world. The wide and instant effect

be great. It will be effective in proportion to its suddenness, as are all variations of intracranial pressure. The instance last considered, the sudden arrest of the heart's action in aortic regurgitation, must be mechanically equivalent to a "stunning" blow on the skull. In the more gentle failure of ordinary syncope the mere diminution in pressure is conceivably adequate to induce the alteration in the nerve elements on which unconsciousness depends. As I have said, we do not know its nature nor have we enough knowledge to formulate a probable conception of it. It may be thought of as a widespread retraction of cortical dendrites, interrupting their connexion with all lower centres, but it can only be as a speculation, of value only as a tentative aid to thought.

The features of ordinary syncope merit consideration. They are dominated by the failure of the heart's action. As this lessens in strength the effect is seen, especially where it has to raise the blood against the force of gravitation, in the pallor of the face, which the brain doubtless shares. We may reasonably infer this when a cause is operative which must act on face and brain alike; but we cannot assume that the brain is anæmic whenever the face becomes pale any more than we can assume that the brain becomes congested whenever the face is suffused with the blush of emotion. This by the way. In syncope we may regard the surface change as coinciding with that beneath the surface. With it there are a sense of increasing feebleness, often undue consciousness of the heart's action, some respiratory distress which may be manifested by sighing breathing, and frequently a sense of nausea. Dimness or loss of sight often precedes loss of consciousness, probably due to the lessened blood-supply to the retina. Of all structures the retina seems the most sensitive, as indeed we might expect. Sight may suffer without consciousness. A lad under some emotional excitement in a hot, crowded room, felt faint and went out into the cold night air for a few minutes. Feeling better, he returned to the room and found that he could see nothing—all seemed black. Sight gradually returned in the course of a few minutes.

It is doubtful whether true cardiac syncope ever causes absolutely sudden loss of consciousness, except when this is due to a fatal arrest of the action of the heart. It is seldom, if ever, so sudden as to cause a hurtful fall. As a rule, the deliberate onset enables the sufferer to lie down, when gravitation ceases to hinder the flow of blood to the brain and the blood pressure is restored. The slow return of strength to the pulse and of colour to the face is attended by deeper breathing and gradually consciousness returns. With it from the first there is correct perception of surroundings, never the mental confusion and wandering or erroneous action that are common after minor epilepsy. On the other hand, after the latter there may be an instant return of a normal mental state, with no transitional sense of lessening prostration that is the usual mode of recovery from syncope. Moreover, it is important to emphasise the fact that in minor epilepsy, which alone can be confounded with cardiac syncope, there is never initial pallor of the face. This follows the onset. Error on this point is common because the patient is only closely observed after some feature of the attack has drawn attention to him. Much more frequently no change in the tint of the face is to be seen either before or after a minor seizure. This is true also of the pulse. The state of the vessels of the retina does not necessarily indicate a similar condition in those of the brain, but I once chanced to have those of the retina under clear view by the direct method of observation throughout a minor attack and no change in them could be seen.

We shall see better how imperfect is our knowledge of syncope if we consider the various causes by which the failure of the heart may be brought about. One obtrusive cause is loss of blood and another, similar in nature, is the withdrawal of a large amount of blood from the general circulation by its collection in one set of vessels. You know that fainting may occur when much fluid is withdrawn from the peritoneal cavity unless the abdominal vessels are supported by external pressure. This is, no doubt, the explanation of one of the commonest causes of fainting in strong men, violent diarrhoea or a violent purging. The flux to the intestinal vessels and the copious efflux from them render the amount of blood in the general circulation inadequate. The effect of a hot room is ascribed to a similar mechanism, the dilatation of the vessels of the surface, although in this case other influences may perhaps coöperate.

In all these cases how, we may ask, is the failure of the

heart brought about? Is it produced by the diminished flow in the arteries of the heart or by the lessened quantity within the cavities being insufficient to excite the contractions? Or does the diminution in the blood-supply to the medulla oblongata excite an impulse in the pneumogastric which causes the heart to fail? The last involves two questions. Is the inhibitory influence from the cardiac centre in the medulla excited in it primarily by the change in the circulation, or is it due to the influence of this change on the cerebral hemisphere, the effect being focussed on the medulla? It may be useless to ask these questions, but few reasonable questions are wholly useless. The same questions apply to syncope from valvular disease of the heart.

Syncope is often due to a cause that can only act through the nervous system. It may be produced by a sudden intense pain, especially if felt in the abdomen or in the vicinity of the heart. The mechanism is supposed to be a direct action on the centre for the vagus, and this is rendered probable by the proved effect of such pain on the vaso-motor system. But syncope is only known to result if the pain is perceived. In man, I think, a cause of adequate pain has not been known to produce syncope if the patient was under the influence of an anæsthetic. Hence it seems doubtful whether the effect is due to a direct action on the vagal centre; the facts suggest that it is the result of a profound influence on the sensory regions of the cortex, focussed down on the cardiac centre in the medulla. The disturbance of the cortex must also be concentrated on the cardiac centre when syncope results from sudden intense emotion.

Remarkable also is the characteristic syncope that may be caused by the sight of blood. This must be purely emotional in its production. It does not seem to be caused by depleted blood, however realistic may be the painting. A special idiosyncrasy renders some persons liable to faint when certain odours are perceived, especially those of certain flowers, even such as are purely pleasant to the majority. By what mechanism the result is produced is unknown. It is difficult to conceive that the stimulation of the olfactory nerve has a direct effect on the vagus. It seems necessary for the odour to be perceived; so that here again the influence on the cerebral cortex may be necessary for the effect. There is much mystery in the part played by the cortex in connexion with reflex processes.

Since we are ignorant of the nature of the condition of the brain structures that underlies the loss of consciousness in syncope on the one hand and in epilepsy on the other, we have no means of discerning whether it is the same in each. We know only that it is spontaneous in epilepsy, coming on without any perceptible excitant, while in syncope it is induced by the failure of the circulation. The question gives special importance to any cases in which the two conditions seem to be connected, especially in which repeated syncope passes into minor epilepsy. Such a relation constitutes indirect evidence of the essential identity of the functional state in the two conditions. It is suggested by the following cases.

CASE 1.—A girl, when about seven years old, became liable to faint on any sudden start or alarm. The faints had all the characters of cardiac syncope; there were pallor, coldness, and gradual loss of consciousness. After some years such faints occurred without any sudden excitant and became more sudden in onset. When she was 17 years old one of these attacks passed into a distinct epileptic fit, with deviation of the head, general clonic spasm, and micturition during the attacks. This case may seem inconclusive, because the early attacks may have been possibly epilepsy with excitation of the fits, although this opinion is hardly consistent with the gradual development of unconsciousness, consistent with the gradual development of unconsciousness, with preceding pallor. The following case is not open to this objection.

CASE 2.—A single woman, aged 34 years, had been liable for many years (12 or more) to apparently true fainting attacks, caused by excitement, over-fatigue, or a hot room. They began with palpitation of the heart and a sense of faintness, followed by gradual loss of consciousness, which did not become complete if she was able promptly to lie down, when she always began to recover. At the age of 25 years these faints changed in character. She became unconscious more suddenly and without any exciting cause; indeed, the onset was so abrupt that she often only knew that she had had an attack by finding herself on the floor.

another way, no less than four-fifths of these patients had lost half, or more than half, of their relatives within from three to five years, so that it is easy to understand how whole families have been destroyed and so much land has fallen out of cultivation.

A similar family incidence is seen in the sporadic disease and is best illustrated by a European series of cases, in which it is easier to follow up the histories. An examination of my notes of the Calcutta European Hospital cases of the last six years shows that the most common relationships between patients actually in hospital for the disease were parent and child in six instances and brothers and sisters in seven more, nearly always children, while in no less than three of these instances more than two children of the same household were admitted, the series in one family extending over a period of five years. Moreover, just one-third of the whole series of cases had relatives actually in hospital during this period, while a good many more gave histories of other members of their families being attacked with fevers of long duration, which were pretty certainly mostly of the same nature. This family incidence clearly points to a house infection and was the basis of the successful measures which I advocated against the disease.

The histories of the rare cases in which Europeans in Assam were attacked by kala-azar throw some further light on this question, for in all the six cases, regarding whom Mr. J. Dodds Price kindly furnished me with information, the affected men were in the habit of cohabiting with native women either in the infected lines or in three instances with one woman, who was subsequently found to be infected with kala-azar, two of them subsequently dying from the disease. Two of these last cases of infection were most important, as they occurred in parts then uninfected with kala-azar, but in each case the woman had come from an infected district. Moreover, Mr. Price knows of no instance in which a European cohabited with an infected native woman who escaped kala-azar; and when we bear in mind that it is the usual custom for such women only to come to the bungalow at night and not to eat with the European, then it becomes clear that the most likely mode of infection by a parasite occurring in the peripheral circulation is through some biting insect, in which the parasite may pass its extracorporeal stage of existence. Moreover, such a source of infection may furnish a clue to that of adult Europeans with no family history to explain it in large towns such as Calcutta, as well as among soldiers in Bengal cantonments, and is also in accordance with the increasing age incidence after early adult life to be mentioned immediately. Again, the infection of one child after another in the same house may be also readily explained on the same hypothesis, and indicates the importance of isolating, at least in a separate room, any person attacked by the disease, or better is a hospital where persistent treatment and nursing can be carried out.

Age and sex incidence.—Among tea-garden coolies, who furnish the most accurate statistics, there was no difference in the incidence of the disease on the two sexes, nor did occupation affect it. Numberless instances of husband and wife being infected one after the other were met with, it being, in fact, the exception for one of them to escape: another striking instance of house infection. In the sporadic disease in Calcutta an excess of native males are admitted, much in proportion to those of other diseases. In the European hospital there were twice as many males as females above the age of 15 years, possibly partly due to the source of infection just mentioned, but in children under 15 years of age there were 23 females to 13 males, probably due to a larger proportion of the male children living away from home at schools.

The age incidence is of great importance, the most striking fact being the number of children attacked. In my report I recorded that 25.6 per cent. of my cases occurred in children under 10 years of age, while 24.4 per cent. more were between 10 and 20 years old, making 50 per cent. under the latter age. Further, in a more recent report on the sporadic disease in Sylhet, 29 per cent. were under 10 years and 30 per cent. more between 10 and 20 years, making nearly 70 per cent. under 20 years. Among natives in Calcutta only 8 per cent. were in children under 10 years, but 40 per cent. were between 10 and 20 years, three-fifths of which were boys from 10 to 15 years old, who are much more readily brought to hospital than girls or younger children. Between from 20 to 30 years of age there were 32 per cent., 16 per cent. from 30 to 40 years, and only 4 per cent. over 40

years. Among Europeans, who readily bring their children to hospital, 20 per cent. were under 10 years and 22 per cent. more between 10 and 15 years, making no less than 42 per cent. 15 years of age or under, 22 per cent. from 20 to 30 years, and 20 per cent. over 30 years, showing once more a very high rate among the unfortunate children and a decreasing one with advancing age.

Race incidence.—It has already been mentioned that epidemic kala-azar was rare in Europeans in Assam compared with natives, but is not so very uncommon in Europeans in Calcutta in the sporadic form. The class of Europeans attacked is here of great importance, for out of 87 cases, regarding whom I have a note as to how long they had been in India, I find that no less than 87.34 per cent. were born and bred in that country and only 12.66 were immigrants from Europe. Moreover, the shortest time after arriving in India that any immigrant was attacked was eight years, a second had been 13 years, and a third 19 years in the country, while the remaining eight had all been over 20 years in India and belonged to the same class as those born in Calcutta, and, like them, were living in parts of the city where their houses were surrounded by those of native inhabitants and under conditions of overcrowding and bad sanitation. In fact, almost all these unfortunate people belonged to the poorest sections of the mixed European and native population, among whom the sanitation and cleanliness of the well-to-do official and commercial European immigrant class are an impossibility, a fact of great importance in connexion with the etiology of the disease. In marked contrast with this is an observation that I have recently made to the effect that 80 per cent. of the European immigrants admitted to hospital for typhoid fever in Calcutta had been three years or less in India, for the totally different incidence of sporadic kala-azar just mentioned in this class will prove a useful point in the differentiation of the latter disease in its early remittent stage from typhoid fever, with which it has been so much confused.

SEASONAL INCIDENCE OF KALA-AZAR.

Owing to the disease lasting from a few months to several years cases are admitted to hospital at all seasons and neither in Calcutta nor Madras is there any very marked seasonal incidence, although there is some excess of admissions of Europeans in Calcutta at the end of the cold and beginning of the hot season, especially among those coming in the early stages of the fever. Of much greater importance is the question whether the fever begins at any special season, as is suggested by the fact that the extracorporeal stages of the parasite, to be described later, only developed in my cultures below a temperature of 75° F. It is very difficult to obtain accurate histories of the beginning of the disease in many cases, especially when they are seen for the first time at a much later date, but an analysis of my notes of those patients who stated that they had had fever for not more than six months in two series of cases, in the Native Medical College and European hospitals respectively, both showed a marked preponderance commencing during the cold weather or early in the hot weather on account of the frequent long incubation period. These results can be summed up by saying that in the six months from November to April there were three times as many cases in the European series and almost four times as many in the native one as in the remaining six months of the year, a sufficiently striking fact when the difficulties of getting accurate data are considered. When in Assam I tried to work out this point from the admissions to hospital for fever on tea estates and found that most of the patients suffering from typical kala-azar in the cold season had been admitted for short attacks of apparently malarial fever in the previous rainy season from June to October. On finding that the sporadic cases in Calcutta mostly began in the cold season I wrote to Mr. Price for his matured experience on the subject and he very kindly sent me histories of all his European cases, every one of which had commenced in the cold weather, while an inquiry into his then comparatively few native patients also showed that almost all of them had developed kala-azar during the cold weather and he added: "All this is very instructive and fits in exactly with your Calcutta experience."

Taking everything into consideration I think there is sufficient evidence to prove that the great majority of patients become infected in the cold season, and I am inclined to think that infection will ultimately be found to be limited to this time of the year. The importance of this fact in connexion with prophylactic measures is clear, as it

on the cortical centres renders it easy to understand that it should sometimes excite an epileptic seizure in those who are liable; indeed, we may feel surprise that the effect is so seldom met with. A sudden alarm occasionally induces a true faint, but the alarm is usually more profound than that caused by a sudden sound, and the attack comes on deliberately.

Sudden change of posture is an occasional excitant of loss of consciousness, and it may be regarded as evidence that this is syncope if the change is to the erect posture. For the moment the flow of blood to the head must be hindered, but in some cases of undoubted epilepsy it may induce an attack. I had once an opportunity of observing such an attack. Consciousness was instantly lost; the patient became rigid and would have fallen unless supported; the conjunctival and pupillary reflexes were absolutely lost. Had it been syncope the onset would have been deliberate, preceded by pallor, and there would have been no rigidity. The mechanism of an epileptic attack thus induced is an interesting problem. The facts suggest the possibility that the sudden diminution in blood pressure, trifling as it must have been, may have caused the nerve elements to pass into the condition which underlies the unconsciousness of a complete syncope. They again bring before us the question whether this may not be identical with that of epilepsy.

Stooping, lowering the head, has the opposite effect on the intracranial circulation; it tends to increase the amount of blood in the vessels, especially when combined with flexion of the neck, hindering the return by the veins, and with some effort, which is usually the object of the stoop. The fulness of the vessels thus induced seems sometimes to cause a momentary loss of consciousness, but this is not alone effective often enough to come into relation to our present subject. A more intense mechanical congestion is induced by severe paroxysms of cough, such as those of whooping-cough. They may culminate in a moment's unconsciousness, as if the sudden increase of blood pressure produced the same functional state of the nerve elements as its sudden decrease. I may mention an interesting personal observation by one of the most distinguished physicians of the last century who had an attack of whooping-cough when nearly 60 years of age. In many of the more severe paroxysms of coughing he had a moment's loss of consciousness. The impression his own sensation gave him was distinctly that this was not the effect of the mechanical congestion; it seemed to him to be due to a process of discharge spreading from that in the medulla which caused the cough.

To the case in which epileptic attacks were induced by standing up the following presents an instructive contrast:—

CASE 7.—A woman, aged 38 years, had epileptic attacks in the night, apparently of minor character but attended by micturition. They also occurred in the day and then began with a sensation of a sudden rush to the head, followed by loss of sight and then loss of consciousness. Automatic action followed the attack. One was so sudden in onset that she fell unconscious on the floor. Thus there can be no question of their epileptic nature. In her, stooping often induced a partial attack, there was a sudden rush to the head, and complete loss of sight, which gradually returned on rising, but there was not actual unconsciousness. Otherwise these attacks, induced by stooping, resembled closely those that were spontaneous. The lesson of the case is that repletion of the vessels and increased intracranial pressure excited the state of the nerve elements which constituted the epileptic seizure. The effect, moreover, bore some resemblance to partial syncope due to cardiac failure, but was more rapid in its course.

The connexion between the cases we have considered is the fact of loss of consciousness. If we realise that the state of the cerebral nerve elements on which it depends may be similar in both syncope and epilepsy, many of the facts of the cases I have referred to become more intelligible. In epilepsy the instability of the nerve elements causes them to pass, suddenly and spontaneously, into the same state as is induced more slowly by the failure of the pressure and flow of blood which result from cardiac syncope. We can then understand that such repeated induction of this state by failure of the heart may lessen their inherent stability, until the change may occur spontaneously as definite minor epilepsy. We can also understand that a change of position which lessens slightly the blood pressure may promote the

onset of an attack of epileptic unconsciousness in those who are liable to this.

My chief object is to impress on you the fact that the functional state of the brain in syncope and unconsciousness is distinct from the failure of the blood-supply that causes it, and may be nearly the same as that which occurs in epilepsy, apart from the state of the circulation. Other objects are to direct attention to the uncertainty there is as to the precise mechanism through which the heart failure is induced by its various causes, the occasional causal relation of syncope to epilepsy, the problems of their diagnosis. Perhaps the first object I have just mentioned may now seem superfluous. The definite distinctness of the cerebral process may appear self-evident and it may seem that I have laboured overmuch to make clear that which needs no demonstrating. If so, I am well content.

ABSTRACT OF

The Milroy Lectures

ON

KALA-AZAR, ITS DIFFERENTIATION AND ITS EPIDEMIOLOGY.

Delivered before the Royal College of Physicians of London

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LECTURE II.¹

Delivered on Feb. 26th.

KALA-AZAR AS A DISEASE.

MR. PRESIDENT AND GENTLEMEN,—In my first lecture I dealt with kala-azar as an epidemic, tracing its origin, spread, and decline, and referred to a similar earlier outbreak in Bengal known as “Birdwan fever.” To-day I pass on to describe the disease itself, its course, complications, and terminations, and shall show you that it is not one whit less terrible when considered individually than collectively, for it literally kills by inches after most prolonged sufferings, which we are still powerless to check to any great extent. As the latter stages of the disease are much better known than the earlier ones it will be clearer if I first describe the typical advanced condition, returning to the still rarely recognised commencement of the fever.

[With regard to the general appearances in the characteristic stages of the disease kala-azar, a number of lantern slides showing groups of cases were shown and the salient points of each were described, the main features being the marked contrast between the tumid bellies due to the very great enlargement of the spleens and sometimes also of the liver, contrasting with the great wasting of the chest, face, and limbs. Brief notes were given of a group of hospital cases which illustrated the different courses that disease might take, while a village group showed the great frequency of the affection in children, just as in malarial fever, the incidence decreasing steadily in the subsequent decades. Other groups of sporadic cases, then known as “malarial cachexia,” in the Sylhet Valley, which was not invaded by the epidemic, showed the clinical identity of the two forms of the disease, which was the principal argument of the lecturer in his 1897 report in favour of the epidemic disease in the Brahmaputra Valley being but an intensified form of malarial fever. The extreme wasting in the last stages and the occasional dropsical ascitic complication produced by a peculiar form of intracellular cirrhosis of the liver were also illustrated. The lecturer then proceeded:—]

Family distribution.—Several of the cases already referred to illustrate very well the extraordinary tendency of this disease to attack a number of persons in the same family or household, but the frequency with which this is the case will be better realised from the following figures relating to 20 successive Assamese patients seen in the Nowgong Hospital. Among their near relatives no less than 123 persons had been attacked by kala-azar, only two of whom recovered from it, while but 44 had escaped the infection, or, to put it

¹ Lecture I. was published in THE LANCET of Feb. 23rd, 1907, p. 456.

early cases in which the confirmation of the diagnosis is of great importance in order to allow of continued and adequate treatment being strongly urged on the patient, so many of whom leave hospital during a temporary remission of their fever and leave off the all-important quinine until a fresh high remittent bout comes to reduce them another stage towards the grave.

COMPLICATIONS OF KALA-AZAR.

The frequency with which kala-azar is terminated by some inflammatory complication may best be illustrated by the data from 49 necropsies made by me at the Medical College Hospital. All but seven of them showed some serious local disease, and some of them more than one. In 11 pneumonia, in ten dysentery, in seven carcinoma oris, in two each pneumococcus meningitis, purpura, cerebral hemorrhage, and pulmonary phthisis respectively, and in one pericarditis were found, while in several carcinoma oris cases staphylococci or streptococci were cultivated from the spleen, revealing a general septic infection. The extreme reduction in the polymuclear leucocytes in this disease, in which they not rarely fall to one-twentieth or less of the normal numbers, easily explains the frequency with which these patients fall victims to the specific organisms of pneumonia, dysentery, pulmonary phthisis, or the cocci of carcinoma oris in which I have never been able to find the diphtheria bacillus, which has been met with in European cases of this disease.

Hæmorrhages deserve special mention among the complications, reduced coagulability having been found by me in some of these cases, while bleeding from sloughing ulcers or from the stomach or bowel has also been seen, in addition to several cases of bleeding into the brain or its membranes.

THE TREATMENT OF KALA-AZAR.

Although much has been done to elucidate the pathology of kala-azar during the last four years, unfortunately the treatment of the disease has made no corresponding progress and is still in a most unsatisfactory state. In Madras, indeed, I am informed that almost every case is believed to die, the mortality being estimated at 93 per cent., the highest figure reached in the Nowgong tea estates by the epidemic form, while that of several hundred cases treated by Mr. Price at the height of the epidemic gave an average mortality of 85 per cent. Mr. Price's cases were treated with thymol first to exclude amylotomiasis, and quinine in moderate doses being generally used during the several periods the patients were in hospital, for it was the common opinion that quinine failed to check the fever in the same way that it did malaria, and many thought it quite valueless and used it very little, as is also the case in Madras at the present time. In my report I strongly dissented from this view and urged that quinine did have a definite effect in controlling the severity of the fever, even when it did not stop altogether, and recommended that it should be given in large doses and persisted with for months together if necessary. Further experience in Calcutta has only served to confirm me in that opinion, for I have repeatedly seen a high remittent fever reduced to a comparatively harmless low intermittent one by increasing the quantity of quinine given, 60 and in some cases 90 grains a day having been taken for considerable periods with nothing but good effects beyond being sometimes distressing to the patients. Once the temperature has fallen to the low intermittent type it can often be kept down to that point for a long time by smaller doses, one of 20 grains in the morning being commonly effectual. That this line of treatment has given far better results than those admitted by unbelievers in it will be clear from the fact that after the publication of my report Mr. Price systematically tried persevering quinine treatment, and when he wrote out for me the results of several years' experience he found that the mortality of 500 consecutive cases was but 10 per cent., the remaining 25 per cent. having permanently recovered against 4 per cent. in the earlier series quoted above. Now as these patients were indentured coolies, who remained working on the gardens, often for years, after getting over a typical attack of kala-azar (the diagnosis of which in its characteristic stages presents no difficulties at the present time to Mr. Price with his 15 years' daily experience of the disease, while in some of them the parasite was also found by spleen puncture), there can be absolutely no doubt about their permanent recovery, some of them having also been seen by me both during and after their attacks.

Moreover, these unquestionable results of Mr. Price are confirmed by my smaller experience in Calcutta under less

favourable conditions for following up my patients. Thus, out of 65 cases in the European Hospital, during the last three years of which I have notes, 18 who left the hospital in a doubtful condition I have not been able to get further news of, leaving 47 cases. Of these 47 cases 21 died either in hospital or after leaving it, 9 more who left in a worse condition than they came may be counted as having died, leaving 7, or 14·83, who left hospital after having lost their fever and greatly improved, a fair proportion of them probably recovering, and 10, or 21·27 per cent., have completely recovered and are known to have been well for from several months to upwards of a year after leaving hospital. It should be mentioned that three of the patients who recovered had also been treated with injections of staphylococcus vaccine, which appeared to have some good effect.

These figures are in close accordance with those of Mr. Price and contrast most favourably with the nearly invariably fatal results admitted by those who still deny their patients the benefit of persistent quinine treatment, although without any efficient remedy of their own, and I venture to think that in view of the above data my line of treatment should never be neglected until we have a better one to replace it, as I hope and expect will be the case in time. Bone-marrow in tabloids, to repair the blood deterioration, is also of considerable value; arsenic is worthy of trial, while in the form of atoxyl, which is now being advocated in the allied protozoal disease, sleeping sickness, my friend, Captain J. W. D. Megaw, I.M.S., has injected in two cases with at least temporary good effects. Colonel C. P. Lukis, I.M.S., Principal of the Medical College, Calcutta, has also tried citramate of soda to increase the leucocytes, but without accomplishing the desired result or doing any good, while x rays over the spleen have been tried by the same observer, but without effecting any cures. In view of the chronicity of the disease and the occasional remarkable spontaneous recoveries from an apparently hopeless state much caution is required in making deductions regarding any line of treatment, but the extraordinary cures which do occur encourage the hope that a better treatment, even than the quinine one, will be found to rescue these unfortunates from the lingering death which still awaits the great majority of them.

THE DISTRIBUTION OF SPORADIC KALA-AZAR IN INDIA.

Since it became known that so many cases previously classed as "malarial cachexia" are but the sporadic form of kala-azar observations on its distribution have been accumulating. Donovan and others have found it to be very common in Madras, while my own observations have shown it to be widely distributed all over Lower Bengal and Assam, except the eastern part of the Brahmaputra valley, while it also occurs somewhat less frequently in Western Bengal or Bihar, and extends into the neighbouring eastern end of the United Provinces of Agra and Oudh, cases in soldiers having been verified by the officers of the Royal Army Medical Corps at Benares, while I have also seen two soldiers who appear to have contracted the disease in Allahabad, and others have been met with among Gurkhas in as far west as Dehra Dun. On the other hand, during an examination of the records of all the fever cases admitted to the Lahore Medical College Hospital for three years I failed to find any cases resembling sporadic kala-azar, while it is also specially noteworthy that I met with no double remittent, low continued, or other doubtful long fevers among them. The Bombay records also show a similar absence of the disease, except rare importations from Madras, so that the disease appears to be limited to the eastern side of India, although I am informed that Burma, like Bombay, only has cases contracted at Madras.

In connection with this distribution it is of interest to note that the areas affected all have a very mild cold season, during which the mean temperature for three or four months remains between from 60° to 75° F., for I shall show in my concluding lecture that these are the limits between which I have been able to cultivate the parasite outside the human body. On the other hand, in the unaffected north-west parts of India the mean temperature during the cold months falls below 60°, while owing to the brevity of spring and autumn in India the temperature conditions most favourable to the organism outside the human body is a very short one in those areas.

EFFECTS OF SEASONAL VARIATIONS ON THE PREVALENCE AND ORIGIN OF THE DISEASE.

I have already shown that the infection of kala-azar is probably limited to the cold season, so an exceptionally long spell of cold weather might be expected temporarily to increase

will greatly simplify matters if precautions against infection have only to be taken during a few months of the year.

THE TYPES OF FEVER IN KALA-AZAR.

I now come to the difficult subject of the diagnostic value of the types of fever in kala-azar, my conclusions being based on four-hour temperature charts of every case in the European Calcutta Hospital for several years, and a still larger series in native patients, while as I also possess complete notes and charts of every fever case in the open wards of the European Hospital for two years, I am now in a position to point out the most important features in the diagnosis of kala-azar in the difficult early stages from other fevers with which they are commonly confused. The antem slides prepared from the charts, some of which represent the temperature curves for several months, will best serve to illustrate the types met with.

[The principal points illustrated by the charts shown were the following. The very long duration of the fever, which shows alternating remittent and intermittent types for many months at a stretch, even in the case of patients admitted in a markedly cachectic and anæmic condition, showing the great resisting powers of his patients. When the temperature is of the remittent type there are rapid wasting and impoverishment of the blood, but when it falls to the low intermittent type both the weight and the blood show steady improvement, while quinine in large doses has a marked effect in reducing the high dangerous type of fever to the low comparatively harmless one which may eventually wear itself out and cease entirely, and then the weight is soon regained, and once the patient has been free from fever for two or three months and fully regained the normal weight relapses do not occur and recovery is permanent and complete. Such cessation of the fever and cure sometimes follow a severe septic complication, such as cancrum oris, and are then accompanied by a marked rise in the previously very low number of polymuclear leucocytes, which the lecturer has also been able to produce with good results in a few cases by injections of sterilised cultures of staphylococci, in accordance with the methods of Sir A. E. Wright, although this treatment has not been invariably successful. The good effect of large doses of quinine was illustrated by a nine months chart of a child, aged eight years, seen early in the disease, and whose fever was only finally broken when 50 grains of quinine had been taken daily for seven weeks, her weight also steadily rising from the time this large dose was given, no ill effect being produced by it. The recognition of the fever of kala-azar in its early stage, which usually begins with a high remittent form of pyrexia, may often be accomplished by noting certain peculiarities in four-hour temperature charts. The most important of these, which was illustrated by several slides, is what the lecturer has already described as the double remittent type—namely, a marked daily double or triple rise of the temperature, often for several days together, in the absence of any treatment by the more powerful sweat-producing antipyretic drugs such as antipyrin. This double type is most frequently seen in the earlier periods of the fever, but may occur at any time in its course, and may also occasionally appear during continued or intermittent pyrexia in kala-azar. The great importance of this type is that, in the lecturer's experience, it has never been seen in typhoid fever, for which the early stage of sporadic kala-azar is so frequently mistaken, as in some of the cases illustrated, and this type is almost diagnostic of the new fever, the first case in a European in Bombay having been first suspected on account of the double remissions taking place. Another type of fever shown in the lantern slides, which is rather characteristic of this fever, is a low continued type of pyrexia, the temperature falling below 101°F., but not varying more than 2° in the 24 hours; a type which is much rarer in typhoid fever, in which the pulse is also usually slower than in kala-azar in proportion to the degree of the pyrexia. Moreover, even when the fever is high for long periods in kala-azar there is a characteristic absence of severe distress or typhoid symptoms, patients often saying that they feel quite well and do not think they have any fever, when the thermometer registers 103° or 104°. Once more, when the remittent temperature falls it commonly assumes a low intermittent type, rising to about 100° every afternoon, instead of running a subnormal course as after typhoid fever, a feature that will often allow of the more serious kala-azar being suspected at an early date before the cachectic stage has been reached. A consideration of these various types will nearly always allow of the

sporadic affection being suspected at an early date, when persistent treatment is most likely to be of avail, while the blood changes will allow of the diagnosis being confirmed.]

THE SPLEEN AND LIVER IN KALA-AZAR.

Time will not allow of my giving a full clinical account of this remarkable disease (although I hope to do so shortly in a work on Fevers in India, for which I have been collecting material for a number of years), but a few more of the salient points must be touched on.

The spleen.—The great degree of enlargement of the spleen can best be indicated by the following data. In 70 typical advanced cases of the epidemic disease in Assam of which I have notes the spleen was enlarged in all, while in 94.5 per cent. it reached to at least three inches below the costal margin, in 56.5 per cent. it extended to the navel or beyond, while in 27.7 per cent. to the level of the anterior superior spine of the ilium. In 95 consecutive sporadic cases in the Medical College, Calcutta, all verified by finding the parasite in the spleen blood, in 80 per cent. the organ reached to the navel or beyond and in 10 per cent. to the anterior superior spine of the ilium. In a series of earlier sporadic cases at the European General Hospital the spleen extended to the navel or beyond in 63 per cent., being nearly always of this size in cases of over three months duration, although the edge was above the navel in three-fifths of the cases with under one month's history of fever. On the other hand, among 200 healthy coolies I examined in Assam on a tea garden when unaffected with kala-azar I found only 1 per cent. with spleens reaching down to the navel, in only 6 per cent. did it extend three inches below the ribs, while in a total of 25 per cent. the organ could be felt below the ribs—figures which suffice to disprove Dr. G. M. Giles's statement that it would be absurd to attach any importance to enlargement of the spleen in kala-azar in such a malarious country as Assam.

The liver.—This organ was enlarged in 93 per cent. of my Assam series, in 75 per cent. of the Medical College, and in 59 per cent. of the European cases in Calcutta, who came earlier under observation, it having been normal in seven-eighths of these European patients admitted during the first month of the fever. The enlargement of the liver to any marked degree is very uncommon in the earlier stages, although after some months it may occasionally reach down to the navel and may then be even larger than the spleen, and eventually become cirrhotic, causing ascites.

The blood changes.—I have elsewhere described the blood changes in kala-azar and pointed out their great value in differentiating it from other diseases, especially fevers, so need only now summarise them. In the first place, an increase in the percentage of the large mononuclear leucocytes is very common and of great value as a point in the differentiation of the early stages of sporadic kala-azar from typhoid fever, for in the latter the lymphocytes, but very rarely the large mononuclears, are increased during the pyrexia. On the other hand, this change is of no help in distinguishing kala-azar from true chronic malaria, in which a large mononuclear increase is also commonly present. These two last diseases may, however, be distinguished by counting the total red and white corpuscles and working out the proportion between the two, for in malaria both are about equally reduced, so that the ratio of white to red remains normal—namely, about 1 to 750—and very rarely, if ever, falls below 1 to 1000, while in kala-azar it is the rule for the white corpuscles to be disproportionately reduced, so that the ratio of white to red is, in the absence of any leucocyte-increasing complication, commonly below 1 to 1500, and not rarely as low as 1 to 2000, 3000, or more. This extraordinary reduction of the leucocytes, which is rarely number but from 500 to 1000 per cubic millimetre, is almost diagnostic of kala-azar, as I have never met them in any other fever cases out of several scores in which I have done blood counts, and it has often enabled me to diagnose the disease in a comparatively early stage. So much is this the case that I now rarely employ the spleen puncture as a diagnostic measure, several fatal cases in addition to those published having come to my knowledge. It should never be done in very anæmic patients or in those who have suffered from any form of hæmorrhage unless the blood is first proved to be clotting normally, while I always take the further precaution of keeping up digital pressure for several minutes after withdrawing the needle and immediately administering a dose of calcium chloride by the mouth. With these precautions it may be of value in some difficult comparatively

the occurrence of the disease. This is actually so, for two years ago such a cold season occurred in Bengal, and during it and the following early hot weather months an unusually large number of sporadic kala-azar cases were admitted to both the native and European hospitals of Calcutta, many more than in the following year with a normal cold season. Now this long spell of cold weather followed an early cessation of the previous monsoon rains, for the withdrawal of the south-west monsoon is succeeded by a cold north breeze, and it will be remembered that in my first lecture I pointed out that the Assam epidemic arose as a consequence of four out of five successive years of deficient rainfall in the early "seventies," due to an early cessation of the monsoon current. I have not been able to get complete meteorological data for the Rungpore district in the "seventies," but those of Calcutta of that period show that during several of the years of deficient rain the mean temperatures of the ensuing cold season were below the average. Now, if a single cold year had such a marked influence in increasing the sporadic kala-azar in Calcutta, on account of the longer period which was favourable to the infection, it becomes easy to understand how an unusual succession of such seasons might have increased the number of cases, and so the foci of infection, year by year, until the fever became so widespread that the people began to leave their villages and thus carried the infection into areas at the foot of the Garo hills and in the Goalpara subdivision, which had hitherto been almost or quite free from it, and so started the spreading of the disease in Assam in a people who were extremely susceptible to it owing to not having previously suffered from the sporadic form. Such an origin of the Assam epidemic of kala-azar is most in accordance with the known facts of its history, and also with the life-history of the parasite and mode of infection, which I shall deal with in my remaining lecture.

ABSTRACT OF

The Morrison Lectures

ON

INSANITY, WITH SPECIAL REFERENCE TO PROGNOSIS.

Delivered before the Royal College of Physicians of Edinburgh on Jan. 28th and 30th and Feb. 1st, 1907,

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LECTURE I.¹

Delivered on Jan. 28th.

IN no kind of disease is prognosis more doubtful than in insanity. For long overshadowed by ignorance and superstition, for long regarded as a mysterious calamity, for long obscured by confusing issues, it is only of late years that the fundamental truths have been disengaged from the fantastic phenomena which formerly dominated the attention of the observer. The long-drawn melancholy, the violent excitement, the bizarre ideas, and the dangerous conduct of the insane wholly occupied attention and precluded the study of obscure and elusive bodily conditions. The tedious recital of aberrant talk and morbid conduct long detained us with mere irrelevancies. It is unnecessary to discuss the history of medical literature dealing with insanity, until the memorable publication of Schroeder van der Kolk's lectures on Mental Diseases, which took shape about the middle of last century. He arrived at the conclusion that much insanity is due to morbid conditions of the great intestine. In accordance with the medical ideas of his time he described this class of cases as "sympathetic insanity." While he clearly recognised the brain as the organ of mind, he believed that it is liable to disturbance in direct consequence of somatic conditions, influencing it in a secondary manner. This conclusion was widely supported, and here in Edinburgh the influence of the body on the mind was

definitely fixed and crystallised by Skae's classification of mental diseases.

It is almost impossible to gain any useful information from old asylum records. In the earliest series the recorders note the reception of a lunatic and briefly indicate that he was furious or fatuous, sometimes adding an account of heroic doses of medicaments, blistering, and bleeding, and sometimes an indication of removal by death or otherwise. At a later period the cases are described as psychological curiosities—how they arrived on foot or in a carriage, how they displayed their morbid ideas, how they wrote, and how they behaved. But withal the most chary record of physical disorders, the most elusive statements as to family or personal history—in brief, it was the study of mind apart from body—the psychological content. Having arrived at the conclusion that there is no pathology of insanity comment on somatic conditions was, of course, superfluous.

The blood of the insane is the *denier ori* of the modern investigator. Dr. Lauder Lindsay, so long ago as 1854, published a series of observations on the histology of the blood of the insane, which he had made in the Orichton Royal Institution. He did not claim that his researches elucidated the morbid conditions of mind, or its organ, the brain; but rather illustrated the laws of pathology, the natural relations of healthy and morbid states of mind and body, and more particularly the reaction of physical diseases on mental phenomena. The *résumé* was presented under 14 headings, the fourth being to the effect that a leucocytæmic condition frequently exists. As examples of this, cases of general paralysis, acute mania, and melancholia are cited. Unfortunately, Dr. Lindsay concluded that there was no connexion between the state of the blood and the mental condition, but that it bore a relation to the physical disorder, debilitated conditions of the system, and general vitiation of the blood.

Thirty years elapsed before another systematic investigation of the blood of the insane was undertaken, when Dr. S. R. Macphail in 1884 won the medal of the Medico-Psychological Association. By that time the hæmocytometer and the hæmoglobinometer had been invented and with these instruments of precision further advance was recorded. In general paralysis Dr. Macphail recorded an increase in the relative proportion of white to red corpuscles, coincident with the progress of the disease; he failed to find any great influence on the proportion of white to red corpuscles in maniacal attacks, while in a series of recent admissions the proportion was increased. Most important is his conclusion that there is a close connexion between gain in weight, improvement in the quality of the blood, and mental recovery.

Another prize essay on the same subject was the work of Dr. Johnson Smyth in 1890. He inferred that the relative proportions of white to red corpuscles were so variable as to be of little importance. In many instances, however, he recorded an excess of leucocytes and stated that the blood of the insane is in a pathological condition.

Quite recently the position has been still further developed by the researches and conclusions of yesterday. Within the last few months Dr. L. O. Bruce has published his records of clinical investigations. Much of his book is concerned with observations on the blood of the insane, and specially on the leucocytosis which he has shown to be of definite importance in diagnosis and prognosis. What was dimly discerned by Dr. Lauder Lindsay half a century ago is made clear by Dr. Bruce to day, and especially the important conclusion that the morbid state of the blood is a dominating factor in the evolution of mental diseases. Sufficient has been said to indicate the growth of medical opinion relevant to insanity as an affair of medicine. Similar references might be made to other somatic conditions the true nature of which is only now intelligible and explicable. I have referred to Schroeder van der Kolk as one of the first to appreciate the toxic nature of insanity. He said: "It is evident that the brain, as the organ through which the higher intellectual powers are immediately manifested, must especially suffer in insanity. We should, however, be much in error in seeking the proper source and cause of the disease always in the brain, for the influence which many organs exercise upon the brain is evident enough." The Hippocratic doctrine that insanity is caused by disease had been obliterated by the superstition of the Middle Ages. The brain, as the organ of mind, infinitely complex in its own proper connexions, is at present the subject of study relative to its relations with all pathological somatic conditions. Thus the sympathetic insanity of van der Kolk is regarded as a toxic

¹ The lectures were illustrated by statistical tables, charts, and clinical observations.

Pearson will greatly enlarge our knowledge and correct our prepossessions, if the desirable data are forthcoming. We only require a collection of accurate facts in sufficient numbers to correct the margin of error.

SOME OBSERVATIONS ON UTERINE FIBROIDS:

BASED ON A SERIES OF 150 CONSECUTIVE CASES TREATED BY ABDOMINAL OPERATION.¹

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I.

WHEN discussing such a subject as uterine fibroids the greatest risk that one runs is that of becoming too discursive, because there are so many aspects of the subject that are full of interest and importance. In order to minimise this risk I propose to confine my remarks to a few points, as exemplified by cases that have come under my own observation, and upon whom I have had occasion to perform an abdominal operation. The text or basis of my paper is therefore a consecutive series of the first 150 cases so treated spread over a period of 11 years.

The points that I wish to consider are the following: 1. The age-incidence of fibroids. 2. The relation between fibroids and sterility. 3. Indications for operation as based upon (a) the symptoms produced; and (b) the complications to which fibroids are liable. 4. Methods of operation in relation to varieties of fibroids.

1. THE AGE-INCIDENCE OF FIBROIDS.

An examination of the ages of the patients at the time of operation gives the following results:—

Age.	Number of cases.	Age.	Number of cases.
Under 25 years	1	45-49 years	42
25-29 years	3	50-54 "	16
30-34 "	21	55-59 "	4
35-39 "	20	60 years or over	
40-44 "	41		

Or, expressed in decades:—

Age.	Number of cases.	Percentage.
Under 20 years	0	0.0
20-29 years	4	2.66
30-39 "	41	27.33
40-49 "	83	55.33
50-59 "	20	13.33
60 years or over	2	1.33
	150	100.0

These figures are in harmony with the general view that fibroids are almost unknown under 20 years and rare under 30 years; they are met with not infrequently between the ages of 30 and 40 years, and between 40 and 50 years they are relatively common. It must be noted that these figures do not express the age of onset of fibroids, because many of the patients had been the subjects of these tumours for years before they were operated upon; nor do they represent the relative ages of all patients suffering from fibroids; their more precise significance is the age at which the fibroids in my cases gave rise to such troubles as called for operation. The reason that the numbers rapidly diminish after the age of 50 years and drop almost suddenly after 60 years is that by this time the majority of patients have been operated upon nowadays, whilst some have died from the complications of fibroids, and some have been enabled, by the absence of complications or serious symptoms, or by putting up with a life of semi-invalidism, to retain their tumours undisturbed by the surgeon's knife. The youngest patient on this list was No. 11; she was 23 years old, and operation was necessitated by profuse hæmorrhage. The two oldest patients, Nos. 31 and 42, were aged 63 years, the one a single woman and the other a widow; both required operation on account of

pressure symptoms, amounting, in the case of the latter, to partial intestinal obstruction.

I have examined my cases to see if there be any relation between the age of patients and the characters of their tumours and the results are set forth in the following table:—

Variety of tumour.	Under 30 years.	30-34 years.	35-39 years.	40-44 years.	45-49 years.	50-54 years.	55-59 years.	60 years and over.	Total.
Simple fibroids	1	4	7	12	13	7	2	0	46
Multiple fibroids	0	7	7	16	18	5	2	1	56
Cervix fibroids (solitary) ...	1	2	1	1	0	0	0	0	5
Subperitoneal fibroids* ...	0	6	3	1	2	1	0	0	13
Interstitial fibroids*	0	1	1	6	2	0	0	0	10
Submucous fibroids*	1	1	0	0	1	0	0	0	3
Soft red fibroid	1	0	1	0	1	0	0	0	3
Fibroids with cystic or necrotic degeneration	0	0	0	5	5	3	0	1	14
Totals	4	21	20	41	42	16	4	2	150

* Conditions allowing of myomectomy instead of hysterectomy.

We cannot lay great stress on this table because the numbers are too small, but it appears evident that the age of patients does not materially influence the character of the tumours, except in the matter of degenerative changes, which are strikingly absent before the age of 40 years. This, of course, is what we should expect from the life-history of fibroids.

2. THE RELATION BETWEEN FIBROIDS AND STERILITY.

It has long been known that there is a close association between sterility or arrested fertility and fibroids, and it occurred to me that it would be a matter of interest to endeavour to ascertain the precise nature of that association. It may be said briefly that the relation appears to be not between fibroids and sterility—i.e., incapacity to conceive—but between fibroids and the absence of pregnancy, whether the patient has had the opportunity of conceiving or not. I shall first state the facts at our disposal, derived from an analysis of these cases, and then make some rather speculative observations by way of inference. Of the 150 patients operated upon, 56 were single women and 94 were married. Of the 94 married women, 34 had never been pregnant and 60 had borne children. Thus the total number who had not been pregnant was 90, and our first deduction is that in 60 per cent. of cases of fibroids the patient has not been pregnant.

The length of time that the nulliparae had been married was as follows, the time being not stated in my notes in 11 cases:—

Under 1 year	3 cases.	7 years	1 case.	18 years	1 case.
2 years	1 case.	9 "	1 " "	20 "	1 " "
3 "	2 cases.	12 "	1 " "	24 "	1 " "
4 "	2 " "	13 "	2 cases.	28 "	1 " "
6 "	2 " "	17 "	3 " "	33 "	1 " "

When we investigate the cases of women who had borne children we obtain some interesting and striking results. In the next table I have drawn up a list showing the number of pregnancies that each patient had had and the number of years that had elapsed since the last pregnancy. In my notes the data concerning the number of pregnancies are wanting in three cases, and the length of time since the last confinement in six cases.

Omitting the last three cases on the list, where the number of pregnancies was not known, 57 patients had had between them 172 pregnancies, giving an average of three pregnancies to each patient. Of these 172 no fewer than 38 had terminated in miscarriages. On glancing at the list one is struck by the relatively large number of patients who had had only one or two pregnancies—namely, 27 out of 57. Our second deduction is that among married women fibroids are associated with diminished fertility. But perhaps the most notable feature about this list is the long time, in the majority of cases, that had elapsed since the last pregnancy. Data are wanting on this point in six out of the 60 cases, and of the remaining 54 three were pregnant when first seen;

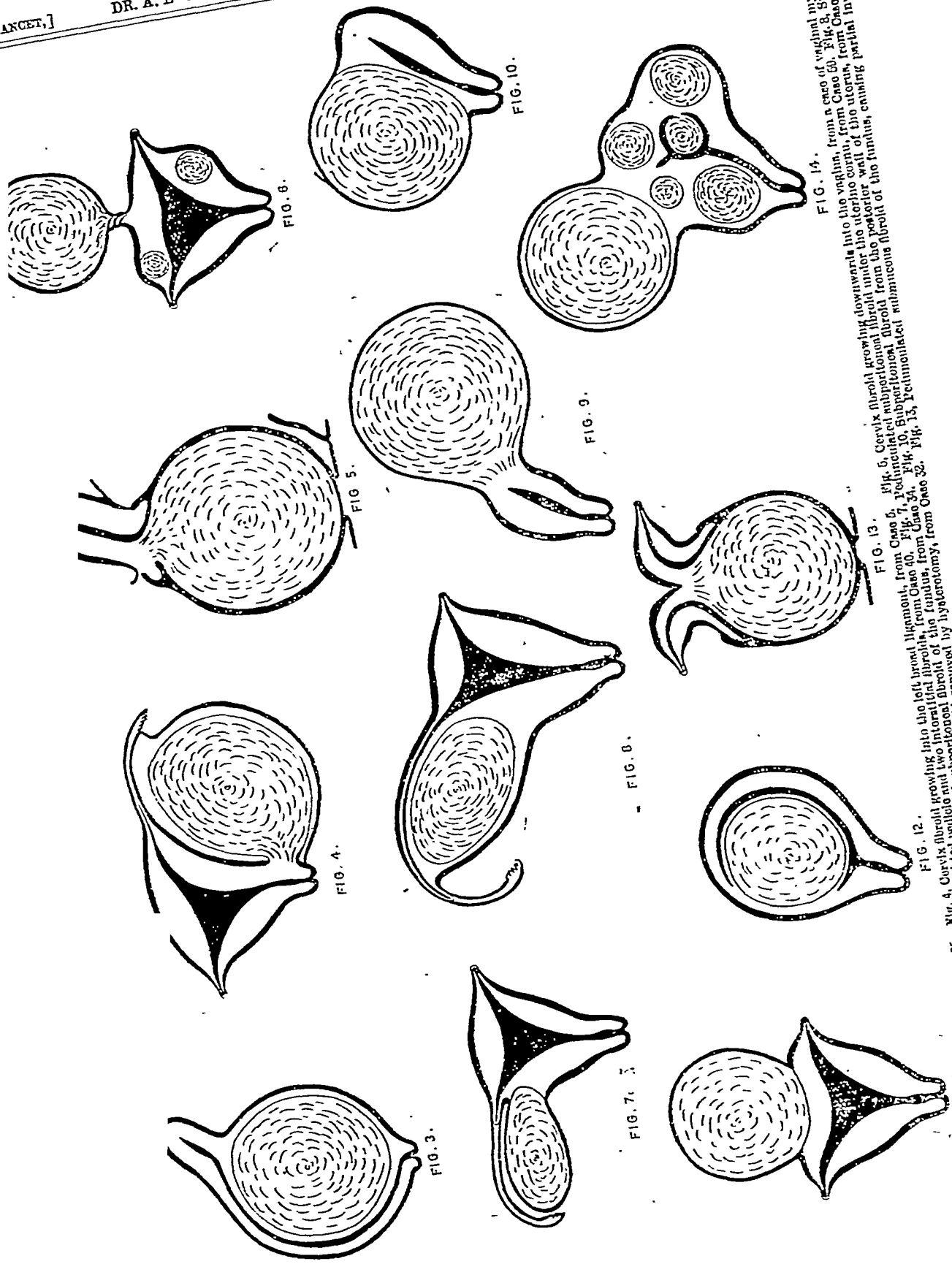


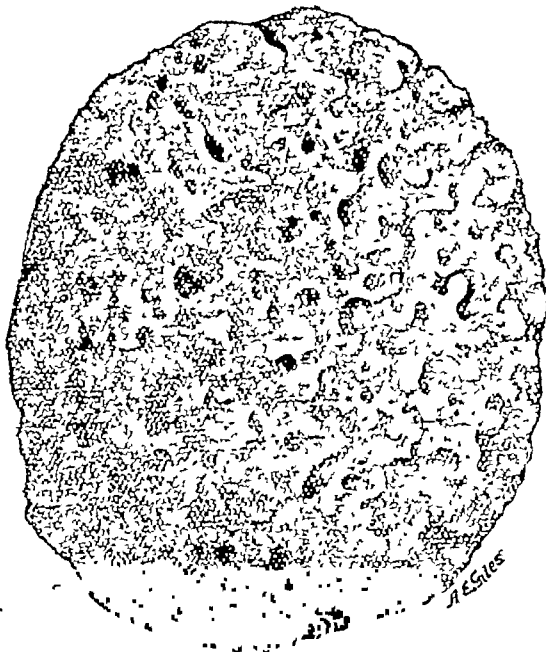
FIG. 3, Typical cervix fibroid, from Case 95. FIG. 4, Cervix fibroid growing into the left broad ligament, from Case 6. FIG. 5, Cervix fibroid growing downwards into the vagina, from a case of vaginal myomectomy, from Case 60. FIG. 6, Subperitoneal fibroid of the uterine cornu, from Case 62. FIG. 7, Pedunculated subperitoneal fibroid of the fundus, from Case 40. FIG. 8, Pedunculated subperitoneal fibroid of the fundus, from Case 34. FIG. 9, Pedunculated subperitoneal fibroid of the fundus, from Case 34. FIG. 10, Subperitoneal fibroid of the fundus, from Case 34. FIG. 11, Subperitoneal fibroid of the fundus, from Case 34. FIG. 12, Submucous fibroid, removed by hysterotomy, from Case 32. FIG. 13, Pedunculated submucous fibroid of the fundus, from Case 32. FIG. 14, Multiple uterine fibroids, from Case 24. A case of vaginal myomectomy.

General disablement—that is, weakness, inability to walk or to work—was a marked feature complained of in 14 cases. In many of the other cases there was more or less disablement. In the case of one patient there were virtually no symptoms at all except some frequency of micturition. She married a medical man who discovered the tumour and brought her to me on the day after the marriage. As they were going to reside abroad they both desired that the tumour should be removed forthwith and this was done on the fourth day after marriage.

(6) *The complications to which fibroids are liable.*—Complications may affect the tumours, the uterus, the ovaries and tubes, or adjacent structures. That they are very frequent is shown by the fact that some complication was present in 84 out of 150 cases, or 62 per cent. I shall consider them in the order given.

Tumours.—Uterine fibroids, like ovarian tumours, are liable to the accidents of impaction in the pelvis and torsion of the pedicle. Impaction may be brought about in three ways: in the first place, by a cervix fibroid, which must necessarily, in the course of its growth, fill up the true pelvis, since its position precludes it from rising into the abdomen. This occurs both with the typical solitary cervix fibroid, of which I had three instances, and also with multiple fibroids when one of them is cervical, of which there were four instances; but with a solitary cervix fibroid growing into the broad ligament, which was met with in two cases, it does not necessarily happen, because the broad ligament allows of expansion into the abdomen. Secondly, impaction may occur when a pedunculated fibroid falls into the true pelvis and continues to develop there. This occurred in three cases; in one of them it contracted adhesions and gave rise to dystocia. Thirdly, impaction results when a uterus which is the seat of fibroids becomes retroverted, and the tumour is large enough to fill the pelvis. Of this, there was one instance (Case 44), the tumour forming virtually a cast of the pelvis. The physical signs in such a case resemble retroversion of the gravid uterus at the third month, except that the mass is harder than it is in pregnancy, and there are corresponding bladder-troubles—namely, first frequency of micturition and then retention of urine. Twisting of the pedicle is necessarily a rare accident, because only few pedunculated fibroids have a pedicle small enough in proportion to their size to allow of rotation. It occurred in one case (No. 40).

FIG. 1.

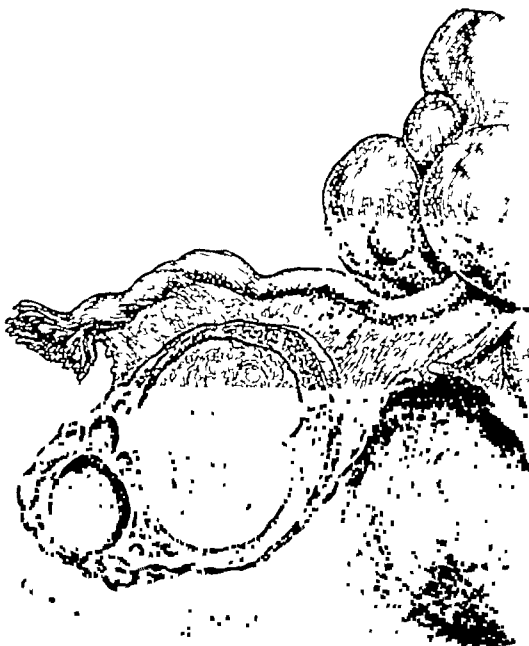


A macerated calcified fibroid removed by vaginal myomectomy; natural size.

More important, because more frequent, are the secondary changes to which fibroid tumours are liable. They may undergo a myxomatous change, leading to the so-called fibrocystic tumour, of which there were seven examples. If

such a tumour be submucous in position septic infection may occur. In other cases, numbering eight in our series, necrobiotic changes supervene, due, in all probability, to the partial cutting off of the blood-supply. When such a tumour is in the position of an intra-uterine polypus the uterus tends to expel it towards or into the vagina, and by compression of the pedicle the necrotic changes become accentuated, so that we have the "sloughing fibroid polypus." This condition was present in one case. Another change that takes place is the calcification of tumours. In one case (No. 45) a number of the tumours were more or less calcified. The extremes to which the process may go are well shown in the specimen I have here (Fig. 1); it did not occur in a case in this series, because it was removed by vaginal myomectomy. The case is referred to later, when speaking of this operation. The calcification was so complete that it was a matter of considerable time and labour to saw it across.

FIG. 2.



Fibroma of the ovary associated with uterine fibroids.

The uterus.—A fibroid uterus is liable to two important complications—namely, retroversion and pregnancy. Of retroversion we have 11 instances; in three of these the uterus was fixed by adhesions and one of them was the case of impaction previously referred to. Pregnancy complicated four of my cases. One (No. 8) was a case of cervical fibroid in the broad ligament, in which delivery by the natural passages would have become impossible. Another (No. 93) was a case of missed abortion. The third (No. 33) was the case of dystocia spoken of previously; the fibroid arose from the posterior wall of the uterus low down and was adherent in the hollow of the sacrum. The condition was not discovered until after labour had begun, because there had been no symptoms. When the labour made no progress her medical attendant turned the child and brought down a leg and then discovered the tumour. As it was evident that delivery by the natural way was impossible, the patient was sent into the hospital and a Caesarean hysterectomy was performed. The fourth case (No. 39) was six months' pregnant when she was first seen and she had a good-sized sessile fibroid high up on the posterior wall of the uterus. It was thought that she could safely await her confinement without interference; labour came on prematurely, however, and a myomectomy was done six weeks later.

The ovaries and tubes.—These organs were diseased in 59 cases, or 40 per cent. It appears that the ovaries are rather prone to cystic degeneration in cases of fibroids, this condition accounting for 33 cases of which 12 had both ovaries and 21 had one ovary affected. That is, some ovarian cystic degeneration was present in 1 case in every 5. Ovarian tumours were present in 16 cases, as follows: Three patients

experienced operators. In some cases, however, and especially when the cervix is the seat of tumours or raises suspicions of malignancy, it is better to remove the whole uterus, including the cervix. This operation is known as total hysterectomy or panhysterectomy.

In this series a hysterectomy was done 120 times—namely, subtotal hysterectomy in 109 cases and total hysterectomy in 11. In many cases the appendages had to be removed also, the exact operations and the number of each performed being as follows:—

Oophorectomy	3
Abdominal myomectomy—	
Subperitoneal	11
Interstitial	13
Submucous	3—27
Abdominal hysterectomy—	
Both appendages left	33
Appendages of one side removed	41
Appendages of both sides removed	35—109
Panhysterectomy—	
Both appendages left	3
Appendages of one side removed	4
Appendages of both sides removed	4—11

150

CONCLUSION.

I have reviewed at some length the somewhat formidable list of disabling symptoms and organic complications that follow in the train of fibroids, and if I have incurred the risk of taxing the reader's patience therewith my excuse must be that such a course was necessary in order to demonstrate that these tumours are by no means so innocent and harmless as they have been represented to be. When I began practice I was disposed to regard fibroids with leniency, but a closer acquaintance with them has led me to regard them as dangerous to life and seriously inimical to health and usefulness, and I feel that this position is justified by the facts which I have placed on record. I do not claim that there is anything original in my point of view, for nearly all those who have had an operative acquaintance with fibroids have come to the same conclusion. I am not engaged in slaying an obsolete idea, for even in this progressive day the venerable tradition that fibroids are comparatively harmless possessions is endowed with a considerable, though diminishing, vitality. I have no quarrel with venerable traditions as such, but when they become mischievous they require to be extinguished—mercifully, if possible, but in any case extinguished. There was a time when this same tradition, which is now mischievous, was actually beneficent—a time, namely, when operations for the removal of fibroids were attended by such a high rate of mortality that the cure was even more dangerous than the disease. Then it was wise to teach that they should be generally left alone. As operative results improved, the tradition, instead of being actively beneficent, became merely innocuous; but with further progress of such a sort that patients can be restored to health and usefulness with greatly diminished risk, it is a cruelty to condemn them to suffer on the strength of a tradition which is directly contrary to fact. To-day the risks of operations for fibroids arise chiefly out of serious complications, and if we act upon the principle of removing fibroids as soon as they give trouble, without waiting until the onset of dangerous complications, the operative mortality will fall as low as that of ovariectomy. I am solemnly convinced that the interests of our patients demand the general acceptance of this principle, and that with the inexorability of fate the principle will be accepted sooner or later, whether we help it or hinder. Therefore, regardless of possible charges of *furor operaticus* or *cacoethes operandi*, I invite the medical profession to approve the principle and to combat the tradition.

LIST OF CASES.

In the following list the particulars of each case are stated in the following order:—Consecutive number; patient's initials, age, and civil state; place of operation (C.H.W.=Chelsea Hospital for Women; T.H.=Tottenham Hospital; P.=private case); date of operation; condition at the time of operation; particulars of operation; result (R.=recovery, D.=death); remarks, if any.

- 1.—C.W., 45, W.; C.H.W.; 1895, Sept. 5th; uterine fibroids; double oophorectomy; R.
- 2.—G.R., 31, S.; C.H.W.; 1896, Oct. 2nd; uterine fibroid; double oophorectomy; R.
- 3.—M.C., 35, S.; C.H.W.; 1897, July 22nd; multiple uterine fibroids; abdominal hysterectomy and removal of the right appendages; R.
- 4.—A.C., 42, M.; C.H.W.; 1893, April 18th; uterine fibroid, left ovarian dermoid, right hydro-salpinx; double ovariectomy; R.
- 5.—E.H., 29, M.; C.H.W.; Sept. 2nd; broad ligament fibroid, arising from the cervix; abdominal hysterectomy, removal of left appendages; R.

- 6.—E.O., 46, S.; C.H.W.; Sept. 26th; uterine fibroid; abdominal hysterectomy, removal of left appendages; R.
- 7.—L.T., 40, S.; C.H.W.; Dec. 12th; multiple uterine fibroids; abdominal hysterectomy; R.
- 8.—O.J., 35, M.; C.H.W.; Dr. G. W. F. Macnaughton; 1899, Oct. 30th; broad ligament fibroid arising from the cervix, pregnancy 4 months; (n) abdominal myomectomy, secondary hemorrhage; (9) reopening, abdominal hysterectomy; D., pneumonia (third day).
- 9.—K.V., 46, M.; P.; Dr. A. S. Gubb; Nov. 3rd; uterine fibroid, umbilical hernia; abdominal hysterectomy, radical cure of hernia; R.
- 10.—A.R., 40, S.; T.H.; 1900, August 14th; large pedunculated uterine fibroid; abdominal myomectomy; subsequent hysterectomy in May, 1906. (See No. 132.)
- 11.—M.H., 23, S.; P.; Dr. P. R. Dodwell; August 31st; intra-uterine fibroid; abdominal myomectomy by hysterotomy; R. Case reported in London Obstetrical Transactions for 1900.
- 12.—R.G., 35, S.; C.H.W.; Sept. 10th; uterine fibroid, left ovarian cyst, right ovarian dermoid; abdominal hysterectomy, double ovariectomy; R.
- 13.—E.S., 47, S.; C.H.W.; Sept. 17th; large uterine fibroids (17 pounds), both ovaries cystic and flattened by tumour; abdominal hysterectomy, double ovariectomy; R.
- 14.—S.S., 30, M.; C.H.W.; Sept. 17th; uterine fibroid; abdominal hysterectomy; R.
- 15.—F.H., 45, M.; C.H.W.; Sept. 24th; uterine fibroid; abdominal hysterectomy; R.
- 16.—M.S., 43, M.; T.H.; Dr. R. B. Marjoribanks; 1901, Jan. 15th; multiple uterine fibroids, diseased appendages; abdominal hysterectomy, both appendages removed; R.
- 17.—M.D., 51, S.; T.H.; March; multiple uterine fibroids; diseased appendages; abdominal hysterectomy; both appendages removed; R.
- 18.—L.I., 51, M.; C.H.W.; April 1st; uterine fibroid, right hydro-salpinx; abdominal hysterectomy; both appendages removed; R.
- 19.—B.N., 56, M.; T.H.; April 23rd; uterine fibroid; abdominal hysterectomy; D.
- 20.—C.H., 32, M.; C.H.W.; June 10th; uterine fibroid; abdominal hysterectomy; R.
- 21.—S.B., 36, M.; P.; Dr. J. W. MacVine; June 21st; uterine fibroid; abdominal hysterectomy; R.
- 22.—M.S., 35, M.; T.H.; June 24th; interstitial fibroids, in fixed retroverted uterus; abdominal myomectomy by enucleation, ventro-fixation; R.
- 23.—R.R., 43, M.; T.H.; July 2nd; large uterine fibroids; ovaries both cystic; abdominal hysterectomy; double ovariectomy; R.
- 24.—L.O., 40, S.; T.H.; August 6th; uterine fibroid; abdominal hysterectomy; R.
- 25.—A.H., 46, M.; T.H.; Dr. C. E. Hutt; Oct. 24th; interstitial fibroid in fixed retroverted uterus; abdominal myomectomy by enucleation, ventrofixation; R.
- 26.—E.H., 33, M.; T.H.; Dr. C. H. Adamson; Oct. 24th; large uterine fibroid attached to fundus, several interstitial fibroids, adhesion of bladder on left side of fundus; abdominal hysterectomy, right ovariectomy; R.
- 27.—E.W., 62, M.; C.H.W.; Nov. 24th; uterine fibroid impacted and adherent in pelvis, right ovarian dermoid; abdominal hysterectomy, right ovariectomy; R.
- 28.—E.O., 53, S.; T.H.; Nov. 28th; uterine fibroid, right ovarian blood cyst; abdominal hysterectomy, removal of right appendages; R.
- 29.—E.E., 53, S.; T.H.; Dec. 17th; uterine fibroid in uterus septus; abdominal hysterectomy; removal of right appendages; R.
- 30.—A.B., 46, M.; T.H.; Dr. J. W. MacVine; 1902, Feb. 13th, uterine fibroid, right ovary cystic; abdominal hysterectomy, removal of right appendages; R.
- 31.—L.I., 63, S.; T.H.; Dr. R. B. Marjoribanks; Feb. 20th; pedunculated cystic uterine fibroid, right cornu; three smaller fibroids; abdominal myomectomy; R.
- 32.—P.T., 31, M.; T.H.; Dr. David Petty; April 10th; intra-uterine fibroid of size of fist; abdominal myomectomy by hysterotomy; R.
- 33.—T.H., 31, M.; T.H.; Dr. C. E. Hutt; April 17th; large uterine fibroid obstructing labour at full term; Caesarean hysterectomy, removal of right appendages; R.
- 34.—A.S., 41, S.; T.H.; Dr. J. Thoresby Jones; May 22nd; large degenerating cystic fibroid, attached to anterior wall of uterus; abdominal myomectomy; R.
- 35.—E.S., 47, M.; T.H.; Dr. C. E. Hutt; May 22nd; multiple uterine fibroids; abdominal hysterectomy; removal of left appendages; R.
- 36.—R.H., 32, M.; C.H.W.; Dr. J. B. Wallace; June 16th; multiple uterine fibroids, right ovary cystic; abdominal hysterectomy, removal of right appendages; R.
- 37.—S.M., 47, S.; T.H.; Dr. Horace R. Wilson; June 19th; multiple uterine fibroids; abdominal hysterectomy; R.
- 38.—L.S., 51, M.; T.H.; August 28th; multiple large uterine fibroids; both ovaries cystic; abdominal hysterectomy removal of both appendages; R.
- 39.—M.C., 39, M.; T.H.; Dr. P. P. Elliott; Sept. 4th; sessile sub-peritoneal fibroid, posterior surface of uterus; myomectomy by enucleation; R.
- 40.—R.G., 49, S.; C.H.W.; Dr. A. Irby Webster; Sept. 8th; multiple uterine fibroids, a large pedunculated fibroid of the fundus with twisted pedicle; abdominal hysterectomy, removal of both appendages; R.
- 41.—M.E., 43, M.; C.H.W.; Dr. A. H. Hoffman; Sept. 8th; cervical fibroid of size of large fist, in supravaginal portion; abdominal hysterectomy; R.
- 42.—E.D., 63, W.; T.H.; Dr. O. R. Salisbury; Sept. 11th; multiple uterine fibroids; abdominal hysterectomy; removal of right appendages; R.
- 43.—E.T., 22, M.; T.H.; Sept. 11th; multiple uterine fibroids; abdominal hysterectomy; removal of right appendages; R.
- 44.—E.A., 43, W.; C.H.W.; Dr. J. M. Ehrhardt; Sept. 29th; uterine fibroid, retroverted and forming cast of pelvis; abdominal hysterectomy; R.
- 45.—L.C., 33, S.; T.H.; Dr. J. Cater; Oct. 9th; multiple calcified uterine fibroids, one fibroid situated low in posterior wall of cervix; abdominal hysterectomy; D.
- 46.—M.R., 30, M.; P.; Dr. H. K. Ramadan; Oct. 12th; two sessile fibroids on posterior wall of fundus; uterus retroverted and fixed; abdominal myomectomy by enucleation, ventrofixation; R.
- 47.—E.H., 30, M.; T.H.; Dr. Hugh Silver; Oct. 16th; multiple

had dermoid cysts, and one of these had a multilocular ovarian and another had a hydrosalpinx on the other side. Four had a multilocular ovarian cyst on one side, one of whom had a hydrosalpinx on the other side; one (No. 144) had a large multilocular cyst on each side, complicated by dense adhesions. One (No. 102) had double ovarian papilloma; one had an ovarian fibroma (No. 47): this is shown in Fig. 2; one an ovarian sarcoma (No. 99) and she has since had recurrence in the cellular tissue on both sides of the pelvis. Two had ovarian carcinoma (Nos. 96 and 112); they have so far remained free from recurrence, although the second of them had secondary deposits both in the broad ligament and on the back of the uterus at the time of the operation. The specimen is among those shown. Three patients had cysts with intracystic hæmorrhage, and in one of these cases the cyst had a twisted pedicle. In seven cases there was double salpingitis. Hydrosalpinx of one side was present in one case besides the two previously mentioned, double hydrosalpinx in two cases, unilateral pyosalpinx with acute peritonitis in one case, which proved fatal.

Adjacent structures.—Under this heading may be included cases in which there was localised chronic peritonitis, leading to adhesions to surrounding organs. There were 15 of these, and in some of them the adhesions were very dense, involving the bowel and the bladder, and greatly increasing the operative difficulties. Lastly, there were independent complications in six cases—namely, carcinoma of the sigmoid (two), appendicitis (two), umbilical hernia, and recto-vaginal fistula.

4. METHODS OF OPERATION IN RELATION TO VARIETIES OF FIBROIDS.

Fibroids present such varieties that they require to be dealt with by different operative procedures, and we shall best appreciate these operations by first making a rapid review of the possible conditions met with. I have endeavoured to illustrate some of these by rough outline drawings representing the type of tumour in some of my cases.

Cervix fibroids.—This is a variety to which my colleague Mr. J. Bland-Sutton has drawn special attention; he finds that they occur in about 5 per cent. of cases. Three types are found. The first (Fig. 3) is that in which the fibroid develops in the supravaginal portion of the cervix and forms an ovoid tumour, on the top of which is perched a normal-sized uterine body. This was met with in Cases 41, 95, and 108. Sometimes such a tumour is found associated with other fibroids, as in Cases 45, 98, 109, and 136. The second type (Fig. 4) is one in which the tumour grows out into the broad ligament, remaining attached to the cervix by a pedicle. It corresponds to the subperitoneal fibroid that arises from the body of the uterus. Cases 5 and 8 presented this form of tumour. In the third type (Fig. 5) the fibroid grows downwards into the vagina; such a tumour is removed by vaginal myomectomy.

Fibroids of the body of the uterus are recognised as falling into three categories, the subperitoneal, the interstitial, and the submucous. Subperitoneal fibroids are shown in Figs. 6 to 11. They may have a very broad attachment, as in Figs. 10 and 11; a very narrow one, as in Fig. 6 (where the pedicle was twisted, Case 40); or the attachment may be intermediate in size. Such a tumour as that shown in Fig. 8 produces a remarkable distortion of the uterus. Interstitial fibroids are frequently small, as in Fig. 6; when they get large they tend to assume the subperitoneal or submucous position. Submucous fibroids are shown in Figs. 12 and 13; their tendency is to become polypoid, and the uterus then makes an effort to expel them, as occurred in the case represented in Fig. 13; so vigorous was the effort in this case that a partial inversion of the fundus resulted. Combinations of the three forms are not infrequent, and then we get such tumours as are shown in Fig. 14. Subperitoneal fibroids are specially prone to degenerative changes; submucous fibroids are the ones chiefly responsible for excessive hæmorrhages, and they are particularly liable to septic infection and to sloughing. Interstitial fibroids partake of the characteristics of the other two forms, and all three are apt to cause serious pressure-effects.

It is obvious that so many forms of tumour cannot all be dealt with in a uniform manner. Formerly the practice of removing the ovaries and leaving the tumour was in vogue; that was a time when the mortality of hysterectomy was considerable. I adopted it in three cases, Nos. 1, 2, and 4, but I have not done a case of this kind since early in 1898. The practice has now become obsolete, so I need not take up

time in recapitulating its disadvantages. We have the choice of two routes in dealing with fibroids—namely, the vaginal and the abdominal.

The vaginal route has a limited usefulness. It is, of course, the only way of removing fibroids lying in the vagina, as in Figs. 5 and 13, and it is sometimes useful for the removal of small fibroids in the uterus. For this purpose the cervical canal is dilated and the tumour is removed entire or after cutting it into fragments (*morcellement*). Such procedures are known as vaginal myomectomy. Tumours as large as a golf-ball are often best removed by this method. When the tumour is larger I do not advocate this plan, as I think that it involves more risk and causes much more hæmorrhage than the procedure which I shall refer to as hysterotomy. Sometimes a small tumour imbedded within the wall of the uterus may be removed by vaginal enucleation; the mucosa and capsule over the tumour are incised and the tumour is shelled out. In one of my early cases some ten years ago I attempted this procedure, but found that the tumour was too large and firm to enucleate; I left it hoping that it would become extruded. As it happened this came about, but only after the patient had had an alarming rise of temperature extending over ten days. On the twelfth day a sloughing tumour of the size of a hen's egg came away and the patient got on all right. I should now deal with such a case by the abdominal route. In one case about two years ago a patient, 65 years of age, had a sloughing fibroid of the size of a fist, presenting at the os externum; there was a foul purulent discharge. The vagina was very narrow, from atrophy, and I had to face the problem whether to attempt a difficult vaginal myomectomy or to attack the tumour through the abdomen and run the risk of a septic peritonitis following. I decided on the former course. After dividing the cervix freely I attempted to cut up the tumour; but it was calcified and as hard as stone and I could make no impression on it. After an hour's hard work I managed to free it from its capsule; to deliver it I had to divide the posterior vaginal wall all the way down. The operation was completed by sewing up the vagina and cervix. This is the specimen shown in Fig. 1.

The abdominal route is the one required for the majority of cases. Here we have the choice of two procedures, the one conservative myomectomy, and the other radical hysterectomy. By myomectomy we mean the removal of a tumour from the uterus, leaving the uterus behind. It takes three forms, according to the position of the tumour. Subperitoneal myomectomy is the removal of a subperitoneal tumour; the uterus itself is left practically undisturbed. This plan was adopted in 11 cases, in three of which the appendages of one side were also removed. Interstitial myomectomy, or myomectomy by enucleation, is the removal of a fibroid from the substance of the uterine wall. An incision is made over the tumour, this is shelled out, and the incision is closed by sutures. 13 cases were treated in this fashion and in 11 of them a ventrofixation was done at the same time. Submucous myomectomy, or hysterotomy, means that the uterus is deliberately opened, as in a case of Caesarean section; a tumour (instead of a baby) is removed from its cavity and the uterine incision is sewn up again. This plan was adopted in Cases 11, 32, and 106. Abdominal myomectomy is an ideal conservative procedure but it is not always applicable. It was employed in 27 cases in this series. It is chiefly adapted to solitary fibroids or to cases in which not more than two or three tumours are present. It is of little advantage in patients who are past the child-bearing age, and it is contra-indicated when an apparently single subperitoneal fibroid is associated with profuse hæmorrhage, because in such a case there is almost certainly a submucous fibroid present in addition. When the uterus is uniformly enlarged by a rounded tumour it is justifiable to split open the uterus and remove the tumour from the interior. Hysterectomy is the plan to be followed in cases where myomectomy is unsuitable, and especially in all cases of multiple fibroids and in cases of cervix fibroid. When both appendages are diseased and require to be removed, it is always better to remove the uterus than to do a myomectomy. Hysterectomy is of two kinds: in one case the greater part of the cervix is left behind; this is known as supravaginal hysterectomy or subtotal hysterectomy. In my list of cases this operation is always understood when "abdominal hysterectomy" is spoken of. In most cases I regard this as the best procedure, and this view is shared by many

- pedunculated fibroid from left uterine cornu, double salpingitis; abdominal myomectomy, removal of right tube; R.
- 130.—E.B., 49, S.; T.H.; Dr. H. E. Powell; April 26th; uterine fibroid, cystic and adherent left ovary; prolapse of rectum; abdominal hysterectomy, left ovariectomy, suspension of rectum to sacrum; R.
- 131.—J.S., 35, M.; C.H.W.; May 7th; uterine fibroids, small left ovarian cyst, dense bowel adhesions; abdominal hysterectomy, left ovariectomy; R.
- 132.—A.H., 44, S.; C.H.W.; May 7th; uterine fibroids, cystic left ovary, bowel adhesions; abdominal hysterectomy, left ovariectomy; R. Previous myomectomy, see No. 10.
- 133.—R.W., 44, M.; T.H.; Dr. F. J. Tresillian; May 17th; uterine fibroids with adhesions; abdominal panhysterectomy, removal of right appendages; R.
- 134.—A.H., 45, W.; C.H.W.; May 21st; uterine fibroids with bowel adhesions, diseased appendages; abdominal hysterectomy, removal of both appendages; R.
- 135.—I.O., 43, M.; C.H.W.; Dr. T. N. Kelyrnack and Dr. Clements; May 23th; uterine fibroid; abdominal hysterectomy; R.
- 136.—J.B., 42, M.; Dr. Townsend Barker; June 11th; uterine fibroids with cervix fibroid; abdominal panhysterectomy, removal of left appendages; R.
- 137.—M.L., 49, S.; T.H.; Dr. G. Angus Hunt; June 14th; uterine fibroids, right cystic ovary; abdominal hysterectomy, both appendages removed; R.
- 138.—M.P., 41, S.; C.H.W.; Dr. Thomas and Dr. Garvin; June 18th; uterine fibroids, right ovarian cyst, left hydrosalpinx, abdominal hysterectomy, removal of both appendages; R.
- 139.—L.H., 52, M.; T.H.; Dr. Moore; June 23th; subperitoneal fibroid; abdominal myomectomy; R.
- 140.—M.H., 45, S.; C.H.W.; Dr. W. W. Don; July 2nd; multiple fibroids; abdominal panhysterectomy; R.
- 141.—J.B., 50, M.; C.H.W.; July 2nd; uterine fibroids, both ovaries cystic; abdominal hysterectomy, double ovariectomy; R.
- 142.—J.S., 44, M.; T.H.; July 5th; uterine fibroid; abdominal hysterectomy; R.
- 143.—E.H., 33, S.; T.H.; Dr. L. P. Scott; August 2nd; uterine fibroids, cystic left ovary; abdominal hysterectomy, left ovariectomy; R.
- 144.—A.C., 38, S.; T.H.; Dr. David Petty; August 2nd; large uterine fibroids, double ovarian cyst, dense adhesions; abdominal panhysterectomy, double ovariectomy; R.
- 145.—M.R., 37, M.; C.H.W.; Oct. 1st; large red degenerating subperitoneal fibroid, dense bowel adhesions; abdominal myomectomy; R. Previous operation for right extra-uterine pregnancy.
- 146.—L.L., 38, M.; P.; Dr. W. Henry White; Oct. 12th; uterine fibroid; abdominal hysterectomy; R.
- 147.—S.T., 47, S.; T.H.; Dr. A. de Prenderville; Oct. 12th; uterine fibroids, cystic right ovary; abdominal hysterectomy, right ovariectomy; R.
- 148.—G.W., 57, M.; T.H.; Dr. R. Lyon; Oct. 13th; uterine fibroids, fundal fibroid adherent to abdominal wall; abdominal hysterectomy; R.; previous double ovariectomy (36 years).
- 149.—E.J., 34, M.; Dr. W. Lyon; Oct. 18th; uterine fibroid, double chronic inflammatory disease of the appendages; abdominal hysterectomy, removal of right appendages; R.
- 150.—E.G., 45, M.; P.; Dr. H. E. Powell; Oct. 21st; uterine fibroid, commencing cystic degeneration; abdominal panhysterectomy; R.

(To be continued.)

TWO CASES OF INTESTINAL OBSTRUCTION IN CHILDREN.

By E. P. BAUMANN, M.D. EDIN., M.R.C.P. LOND.

CASE 1. Acute intussusception reduced by manipulation.—My first case was that of a little girl, aged nine years, the daughter of a relative, to whom I was urgently summoned on the evening of Sept. 17th, 1906. It appears that the child, who was convalescent from a recent attack of whooping-cough and in fair general health, had come home from school that afternoon complaining of "stomach-ache," the result, she said, of a fall whilst playing some game. As she complained of very severe pain and seemed ill she was put to bed and various domestic remedies were applied both internally and externally—amongst others, a dose of Gregory's powder was administered. Nothing served, however, to allay the condition and the child lay moaning and writhing in pain. She seemed after nightfall to become very collapsed and on measuring her temperature and finding that the thermometer registered less than 97° F. the parents became alarmed and sent for me in haste. On my arrival I found the patient in a state of collapse, with a pale face, sunken eyes, and a rapid and compressible pulse. She lay with her knees drawn up and complained of severe pain in the lower abdomen. The tongue was dry and furred. The temperature was subnormal. I ascertained, on inquiry, that there had been no movement of the bowels that day, nor had there been any vomiting. On palpation of the abdomen there was readily felt a tumour lying transversely immediately below the level of the umbilicus. The mass was cylindrical and sausage-shaped, distinctly curved, smooth, and of firm elastic consistence. Per rectum the rounded end of the tumour was

distinctly felt, forced down against the finger when the patient strained and receding when the abdominal muscles relaxed. The finger on being withdrawn from the rectum was found to be coated with blood-stained mucus. I informed the parents that an intussusception existed and urged upon them the necessity for immediate operative interference. Before taking steps to secure surgical assistance I determined, however, to assay abdominal taxis. This method, a strong plea on behalf of which was advanced by Mr. Jonathan Hutchinson in the early "nineties," consists in kneading and manipulation of the abdomen and so attempting to reduce an intussusception. Ever since first I had read of this method I had been struck by its obvious value, but I had never before had an opportunity of putting it into practice. All the cases of intussusception I had previously met with were of longer duration, more or less firm adhesions having already formed. In the present instance the condition was probably of not more than at the most three or four hours' duration, and the case was consequently a very suitable one for taxis. I was able fairly well to grasp the tumour externally with the left hand and with the tip of the right forefinger in the rectum exerted a kind of bimammary manipulation, alternately increasing and relaxing the pressure with either hand. The tumour gradually disappeared with gurgling and borborygmus, and the child professed herself instantly relieved. I then ordered an enema to be administered, with the result that a copious motion was brought away. The abdomen was now quite flaccid and no further serious pain was complained of. After ordering a small dose of morphine I left the patient for the night. Three or four motions containing blood-stained mucus were subsequently passed and the child vomited once or twice. By the following morning the patient had completely recovered her normal health. For several days I anxiously awaited the trend of events, for the possibility of a recurrence was by no means excluded. There has been, however, no recrudescence of the symptoms, and it must be concluded that the manipulative measures were completely successful.

Remarks.—Unfortunately every case of intussusception is not so amenable to treatment as this one proved to be. In the majority of cases by the time the diagnosis is made adhesions have already formed and the necessary manipulations are then, on the one hand, little likely to be successful; and, on the other, not unattended by danger from the possibility of rupture of the gut with subsequent fatal peritonitis. In reference to the causation of the lesion in this case there were two factors of speculative interest, namely—(1) the convalescence from a recent attack of whooping-cough; and (2) the history of an injury to the abdomen. The former factor not infrequently figures in the history of cases of intussusception in children, whilst isolated cases have been recorded where abdominal trauma appeared undoubtedly to be the cause of the condition. In the present case both factors may have been of influence, the one in predisposing to and the other in determining the onset of the lesion.

CASE 2. Subacute intussusception simulating dysentery.—The second case was that of a female child, aged 15 months, whom I saw in consultation with Mr. W. Eddowes at Norwood, an outlying suburb of Johannesburg, on the night of Nov. 5th, 1906. The child had been ill for 72 hours with diarrhoea, the stools being loose and containing mucus and a considerable quantity of blood. A diagnosis of dysentery had been made and treatment administered in this direction without diminishing either the frequency or the unhealthy character of the motions. The temperature had at no time risen above the normal and tended rather to be subnormal. I was struck at the outset by the large amount of blood contained in the stools; the napkins looked like handkerchiefs used for a bleeding nose. With so much hæmorrhage considerable ulceration of the bowel must exist, and if there were much ulceration one would expect pyrexia at least at some stage of the illness. The stools varied in character, from a green and unhealthy to a yellow and natural colour, in the various discharges shown to me, and all contained blood and mucus. On inspection the child appeared to be fairly comfortable in spite of the frequency of the motions and she appeared to be in pain only at intervals when the legs were drawn up and there was evident intestinal colic. On examination the abdomen was found to be flaccid; in the left iliac region there was felt a small mass, about one and a half inches long and a finger's breadth in diameter. This mass, which was distinctly tender to palpation, by no means corresponded to the typical sausage-shaped tumour described in the preceding case; its presence very strongly suggested an

uterine fibroids, fibroma of right ovary; abdominal hysterectomy, right ovariectomy; R. Case reported in London Obstetrical Transactions for 1902.

48.—A.N., 47, M.; C.H.W.; 1903, Jan. 5th; multiple uterine fibroids; abdominal hysterectomy; R.

49.—C.B., 43, M.; C.H.W.; Dr. S. E. Tench; Jan. 5th; multiple fibroids in retroverted uterus; abdominal myomectomy by enucleation, ventrofixation; R.

50.—A.O., 37, S.; T.H.; Dr. W. Henry White; Feb. 5th; large uterine fibroid, ovaries both cystic; abdominal hysterectomy, both appendages removed; R.

51.—K.G., 46, M.; P.; Dr. J. W. MacVine; Feb. 18th; uterine fibroid; abdominal hysterectomy; R.

52.—L.P., 35, M.; T.H.; Dr. A. W. Bowie; Feb. 25th; uterine fibroid; abdominal hysterectomy, right appendages removed; R.

53.—M.L., 40, M.; P.; March 13th; fibroid in anterior wall of uterus, small fibroid posteriorly, retroversion, chronic appendicitis; abdominal myomectomy by enucleation, ventrofixation, removal of vermiform appendix; R.

54.—O.L., 44, S.; T.H.; Dr. G. P. Chappell; March 19th; uterine fibroid in posterior wall of uterus; abdominal hysterectomy; R.

55.—L.W., 32, S.; T.H.; April 2nd; uterine fibroid, cystic left ovary; abdominal hysterectomy, left ovariectomy; R.

56.—A.B., 47, M.; T.H.; April 23rd; uterine fibroid; abdominal panhysterectomy; R.

57.—A.W., 51, S.; P.; Dr. L. P. Scott; May 6th; very large uterine fibroid; abdominal hysterectomy; D.

58.—B.S., 43, W.; T.H.; May 14th; uterine fibroids, cystic left ovary; abdominal hysterectomy, left ovariectomy; R.

59.—H.T., 34, S.; T.H.; Dr. S. E. Tench; May 14th; elongated subperitoneal fibroid from right cornu of uterus; abdominal myomectomy; R.

60.—M.R., 47, M.; T.H.; Dr. F. J. Treaslian; May 21st; subperitoneal fibroid in right anterior cornu, cystic left ovary; abdominal myomectomy, left ovariectomy; R.

61.—A.W., 43, S.; T.H.; Dr. G. P. Chappell; May 28th; multiple fibroids, large fibroid dissecting up bladder and reaching low in the pelvis, a fibroid behind adherent with cystic ovary to a mass (carcinoma) in the sigmoid; abdominal hysterectomy, left ovariectomy; R.

62.—E.B., 42, M.; P.; Dr. George Bower; August 24th; uterine fibroids; abdominal hysterectomy; R.

63.—J.O., 47, S.; C.H.W.; Sept. 14th; uterine fibroids, left ovary adherent to sigmoid; abdominal hysterectomy, removal of right appendages; R.

64.—P.T., 42, S.; T.H.; Sept. 17th; multiple fibroids; abdominal hysterectomy; removal of left appendages; R.

65.—S.P., 47, M.; T.H.; Dr. O. Lawson Smith; Sept. 17th; fibroid in anterior wall of uterus; abdominal myomectomy by enucleation, ventrofixation; R. (uterine cavity opened; cervical canal stretched with forceps).

66.—H.W., 49, M.; T.H.; Oct. 8th; fibroid in anterior wall of uterus; abdominal myomectomy by enucleation, ventrofixation; R. (uterine cavity opened and curetted; cervical canal stretched).

67.—S.S., 43, S.; P.; Dr. W. Murray Leslie; Oct. 18th; fibroid in anterior wall of uterus, retroversion; abdominal myomectomy by enucleation, ventrofixation; D.

68.—T.P., 45, S.; T.H.; Dr. O. Lawson Smith; Oct. 29th; multiple uterine fibroids; abdominal panhysterectomy; R.

69.—G.O., 33, S.; P.; Dr. O. J. Martin; Nov. 15th; subperitoneal fibroid, retroversion, chronic appendicitis; abdominal myomectomy; suspension of uterus by right round ligament; removal of vermiform appendix; R. (operation performed primarily for appendicitis, procedures carried out through right iliac incision).

70.—D.S., 42, M.; T.H.; Nov. 19th; interstitial fibroid, retroversion; abdominal myomectomy by enucleation, ventrofixation; R.

71.—A.C., 46, M.; T.H.; Dr. J. W. MacVine; Nov. 19th; uterine fibroid, double adherent hydrosalpinx; abdominal hysterectomy; both appendages removed; R.

72.—E.G., 28, S.; C.H.W.; Dr. B. Gordon Hull; Nov. 30th; uterine fibroid, left ovary cystic; abdominal hysterectomy, removal of left appendages; R.

73.—F.B., 41, M.; C.H.W.; Dec. 7th; uterine fibroid, left ovary cystic; abdominal hysterectomy, removal of left appendages; R.

74.—E.P., 54, M.; C.H.W.; Dec. 14th; uterine fibroid; abdominal hysterectomy, removal of both appendages; D.

75.—M.S., 43, M.; T.H.; Jan. 14th, 1904; multiple uterine fibroids; abdominal panhysterectomy, removal of both appendages; R.

76.—E.G., 52, M.; P.; Dr. H. J. Thornton; Jan. 31st; subperitoneal and interstitial fibroids, retroversion; abdominal myomectomy and enucleation, ventrofixation; R.

77.—A.H., 50, M.; T.H.; Dr. W. B. Benjafield; Feb. 4th; uterine fibroid, cystic right ovary; abdominal hysterectomy, right ovariectomy; R.

78.—M.B., 43, M.; T.H.; Dr. A. W. Bowie; March 3rd; uterine fibroid; abdominal hysterectomy, removal of both appendages; R.

79.—A.N., 40, M.; T.H.; Dr. H. Alexander; March 10th; softening uterine fibroid, cystic ovaries; abdominal hysterectomy, double ovariectomy; R.

80.—B.H., 45, W.; T.H.; Dr. F. J. Treaslian; April 7th; softening uterine fibroid; abdominal hysterectomy, removal of left appendages; R.

81.—B.N., 57, M.; T.H.; April 21st; uterine fibroid; abdominal hysterectomy; R.

82.—A.L., 44, W.; T.H.; Dr. Treaslian; April 21st; large uterine fibroid with enormous pedunculated fibroid, large and dense intestinal adhesions; abdominal hysterectomy; D.

83.—H.B., 47, M.; T.H.; Dr. O. E. Butt; April 21st; very large uterine fibroid, large left pyosalpinx, acute peritonitis; abdominal hysterectomy, removal of both appendages; D.

84.—E.S., 41, M.; C.H.W.; Dr. A. G. T. Hanks; May 30th; uterine fibroid; abdominal hysterectomy, removal of right appendages; R.

85.—S.A., 40, S.; P.; Dr. W. R. Murlson; July 5th; large degenerating uterine fibroid; abdominal hysterectomy; R.

86.—E.B., 49, M.; P.; Dr. H. Lloyd Patch; July 17th; large red soft fibroid; abdominal hysterectomy, removal of both appendages; R.

87.—A.P., 41, M.; C.H.W.; Dr. R. L. Grosvener; Sept. 19th; uterine fibroid with commencing degeneration; abdominal hysterectomy, removal of both appendages; R.

88.—A.L., 45, S.; T.H.; Dr. J. Thomason; Nov. 10th; uterine fibroids, right ovarian blood cyst with twisted pedicle; abdominal hysterectomy, removal of both appendages; R.

89.—S.B., 36, M.; T.H.; Dr. T. Gurney; Dec. 8th; uterine fibroid, both ovaries cystic; abdominal hysterectomy, removal of both appendages; R.

90.—E.M., 46, M.; T.H.; Dr. David Petty; 1906, Jan. 26th; uterine fibroid; abdominal hysterectomy, removal of both appendages; R.

91.—E.B., 32, S.; P.; Dr. George Bower; Jan. 27th; uterine fibroid; abdominal hysterectomy, removal of both appendages; R.

92.—M.S., 41, S.; C.H.W.; Feb. 20th; uterine fibroid; abdominal hysterectomy; R.

93.—B.P., 37, M.; P.; Dr. M. G. Biggs; March 9th; uterine fibroid, with pregnancy, arrested at two and a half months; abdominal hysterectomy; R.

94.—W., 35, S.; P.; Dr. F. J. Treaslian; March 26th; multiple fibroids; abdominal hysterectomy; R.

95.—L.W., 34, S.; C.H.W.; Dr. J. Angell James; April 3rd; large cervix fibroid; abdominal panhysterectomy, removal of right appendages; R.

96.—E.B., 38, S.; C.H.W.; Dr. S. R. Schofield; April 10th; uterine fibroids, left ovarian carcinoma, right ovary healthy; abdominal hysterectomy, double ovariectomy; R.

97.—C.P., 53, M.; C.H.W.; April 10th; multiple uterine fibroids, left ovarian cyst, malignant; abdominal hysterectomy, removal of both appendages; R.

98.—K.K., 43, S.; C.H.W.; April 24th; uterine fibroids with cervix fibroid; abdominal hysterectomy, removal of both appendages; R.

99.—S.S., 40, S.; P.; May 1st; uterine fibroids, left ovarian sarcoma; abdominal hysterectomy, removal of both appendages; R.

100.—M.B., 49, M.; T.H.; May 4th; large uterine fibroid; abdominal hysterectomy, removal of both appendages; R.

101.—M.P., 43, M.; C.H.W.; Dr. Hugh Silver; May 8th; small fibroid in anterior uterine wall, retroversion; abdominal myomectomy by enucleation, ventrofixation; R.

102.—E.B., 51, M.; T.H.; Dr. David Petty; May 18th; large uterine cystic fibroid, double papillomatous ovarian cysts; abdominal hysterectomy, double ovariectomy; R.

103.—V.M., 30, M.; May 25th; multinodular subperitoneal fibroid from right cornu of uterus; abdominal myomectomy; R.

104.—A., 50, M.; P.; Dr. A. A. Napper; June 2nd; uterine fibroids, both ovaries cystic; abdominal hysterectomy, double ovariectomy; R.

105.—A.O., 60, M.; P.; Dr. F. J. Treaslian; August 26th; uterine fibroids, large one fibrocystic, right ovary cystic; abdominal hysterectomy, right ovariectomy; R.

106.—A.M., 37, S.; T.H.; Dr. R. Marston Bruce; Sept. 7th; fibroid of size of fist in the uterus, especially anterior wall; abdominal myomectomy by hysterotomy; R.

107.—A.N., 47, M.; T.H.; Dr. A. W. Bowie; Sept. 14th; uterine fibroids, sloughing fibroid polypus; abdominal hysterectomy; R.

108.—S., 33, M.; P.; Dr. W. H. Shimon; Sept. 23rd; very large cervix fibroid, double salpingitis with occlusion of ostia; abdominal panhysterectomy, removal of both appendages; R.

109.—L.H., 53, M.; T.H.; Dr. W. G. Fee; Sept. 28th; multiple uterine fibroids, including a cervix fibroid, recto-vaginal fistula; abdominal hysterectomy, right appendages removed; R.

110.—E.B., 38, S.; C.H.W.; Oct. 2nd; uterine fibroid, both ovaries cystic; abdominal hysterectomy, removal of both appendages; R.

111.—J.M., 40, M.; T.H.; Oct. 5th; uterine fibroid, right salpingitis; abdominal hysterectomy; removal of right appendages; R.

112.—F.G., 37, S.; P.; Dr. Kenneth Frazer; Oct. 6th; uterine fibroids, right suppurating ovarian cyst, with carcinoma, metastatic deposits back of uterus and right broad ligament; abdominal hysterectomy, double ovariectomy; R.

113.—G.R., 45, M.; T.H.; Dr. W. Love; Nov. 2nd; uterine fibroids; abdominal hysterectomy; R.

114.—A.T., 45, M.; T.H.; Nov. 23rd; multiple uterine fibroids, cystic left ovary; abdominal hysterectomy, left ovariectomy; R.

115.—A.S., 43, S.; P.; Dr. P. R. Dodwell; Nov. 25th; two interstitial fibroids; large ovarian cyst; abdominal myomectomy by stitial fibroids; removal of both appendages; R.

116.—E.M., 41, S.; T.H.; Dr. R. Murray Leslie; Dec. 14th; multiple uterine fibroids, cystic right ovary; abdominal hysterectomy, right ovariectomy; R.

117.—E.L., 44, M.; C.H.W.; Dec. 18th; uterine fibroid (with two patches of cystic degeneration), cystic right ovary; abdominal hysterectomy, right ovariectomy; R.

118.—G.B., 28, M.; C.H.W.; Dr. J. M. Barlet; Dec. 18th; soft red uterine fibroid; abdominal hysterectomy; R.

119.—M.S., 40, W.; C.H.W.; Dr. Williams and Mr. J. Howell Evans; 1906, Jan. 8th; uterine fibroids, cystic right ovary; abdominal hysterectomy, right ovariectomy; R.

120.—H.H., 49, S.; T.H.; Dr. A. Ogier Ward; Jan. 11th; multiple fibroids; cystic left ovary; abdominal hysterectomy, left ovariectomy; D.

121.—G.D., 46, M.; C.H.W.; Dr. S. R. Schofield; Feb. 19th; uterine fibroids, cystic right ovary; abdominal hysterectomy, double ovariectomy; R.

122.—A.H., 45, M.; C.H.W.; Dr. J. Angell James; Feb. 19th; uterine fibroids, both ovaries cystic; abdominal hysterectomy, double ovariectomy; R.

123.—A.P., 36, S.; T.H.; Dr. J. W. Hunt; March 15th; uterine fibroid, both ovaries cystic; abdominal panhysterectomy, double ovariectomy; R.

124.—M.H., 48, M.; P.; Dr. A. Robin; March 24th; uterine fibroids, both ovaries closely adherent to broad ligaments; abdominal hysterectomy; R.

125.—S.R., 47, M.; T.H.; Dr. G. Greenwood; March 29th; multiple fibroids, double hydrosalpinx; abdominal hysterectomy, removal of both appendages; R.

126.—J.B., 35, S.; P.; Mr. A. S. Morley; March 30th; multiple uterine fibroids; abdominal hysterectomy; R.

127.—A.B., 42, M.; C.H.W.; Dr. Mark Robinson; April 9th; pedunculated fibroid in right broad ligament; blood-cyst in right ovary; abdominal myomectomy, right ovariectomy; R.

128.—R.B., 48, S.; P.; Dr. J. W. Hunt; April 19th; large softening fibroid in anterior uterine wall; both ovaries cystic; abdominal hysterectomy, double ovariectomy; R.

129.—A.H., 47, M.; C.H.W.; Dr. H. M. Murray; April 23rd; large

right base. There was a well-marked eruption, chiefly on the shoulders, chest, and back, but extending also to the abdomen, arms, and legs. It consisted of purpuric patches, the larger about a quarter of an inch in diameter, and small petechiae resembling flea-bites. Kernig's sign and *tache cérébrale* were present but not to a marked degree, and there were no retraction of the head or muscular rigidity, and no strabismus or nystagmus. The pupils were equal and somewhat dilated and reacted sluggishly to light. His face was flushed and his appearance resembled that of a pneumonia patient, the movements of the *alae nasi* being well marked. The urine was of specific gravity 1034, with a slight trace of blood and albumin. In the evening he had delirium of a muttering type and was unable to answer questions. During the night he had a slight fit. On Feb. 15th the patient was worse. He was unconscious and the breathing was more laboured. The temperature was 101.2°, the respirations were 50, and the pulse was 110. The right side of the face was now paralysed and the right arm and leg were flaccid and motionless. The left limbs were in constant movement, the left hand picking at the bedclothes, and the fingers presenting movement of athetosis. There was no cardiac murmur. A few rhonchi were heard at the base of the right lung, but there was no evidence of pneumonia. There were no ocular symptoms and no head retraction or rigidity of muscles. The patient became worse and died at 6.30 on the morning of Feb. 16th. A specimen of the cerebro-spinal fluid withdrawn by lumbar puncture was found to contain large numbers of the diplococcus pneumoniae of Fraenkel. Weichselbaum's diplococcus intracellularis was absent.

A necropsy was made on Feb. 17th. On opening the skull a considerable quantity of thick purulent fluid was found over the vertex in the pia-arachnoid space, most marked over the left hemisphere and affecting chiefly the occipital and frontal convolutions. At the base the nerves were found to be matted together. The dorsal surface of the cerebellum was thickly coated with the exudate which extended over the pons into the orbital region and into the fissures of Sylvius and Rolando. The mesial surface of the brain was also involved. Both lateral ventricles were dilated with excess of fluid. The basal nuclei were healthy. There was no sign of hæmorrhage. In the left lung a few small areas of consolidation were found in the upper part of the lower lobe, but there was no hepatization. The bronchial glands at the root of the left lung were caseous. The right lung was normal. The heart muscle was flabby but the valves were normal. The liver and kidneys were congested but otherwise normal. The spleen was enlarged and diffident.

The chief points of interest in this case appear to be (1) the presence of a well-marked purpuric rash in cerebro-spinal meningitis of pneumococcal origin; and (2) the absence of such characteristic symptoms of cerebro-spinal meningitis as head retraction, muscular rigidity, strabismus, and nystagmus. The case also emphasises the importance of a bacteriological examination of the cerebro-spinal fluid in cases of this kind.

Hampstead, N.W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTES ON TWO CASES: RUPTURE OF THE AORTA AND RUPTURE OF THE LEFT VENTRICLE.

BY REGINALD A. FORSTER, M.B., CH.B. ABERD.,
ASSISTANT PHYSICIAN, ROYAL ASYLUM, ABERDEEN.

The first case was that of a female patient, aged 79 years. She was slightly demented and for several years had led a quiet, regular life. She had been confined to bed for three weeks prior to her death, suffering from bronchitis with pyrexia, but had been convalescent for four days when she died suddenly on the fifth morning. At 10.5 A.M. on that day, while lying in bed, she all at once became very pale and died immediately.

The post-mortem examination revealed the following conditions. Both lungs were markedly emphysematous; the pericardial sac was found to be distended with about four fluid

ounces of serum and a firm blood clot, weighing nine ounces, which encased the heart. The heart was large and the aorta somewhat dilated. On opening the aorta a large rent was seen in the lower and posterior walls of the arch, measuring three inches in length and extending round three-quarters of the circumference of the vessel. The blood had evidently broken through the inner and middle coats of the aorta, dissected its way down in the tissues between the aorta and pulmonary artery, and finally at the origin of the latter vessel from the heart had burst into the pericardial sac. The walls of the aorta were thinned and showed some small atheromatous patches, though there were no marked signs of degenerative changes. The valves of the heart were healthy and competent.

The second case was that of a male, aged 57 years, who was also slightly demented and had not done any physical labour for two years. For the past nine months he had been in failing health; his arteries were very atheromatous and his general appearance was that of premature senility. He complained of a general feeling of weakness but had no pains of an anginal nature. The night before his death he went to bed apparently in his ordinary health. The next morning, while still in bed, he suddenly became very pale, gave two inspirations of a gasping character, and died.

At the post-mortem examination the left lung was found to be collapsed completely, evidently an old-standing condition, and occupied only a very small space in the upper part of that side of the chest, to the wall of which it was firmly adherent. The right lung was slightly emphysematous. The pericardial sac contained about six fluid ounces of serum and five and a half ounces of soft blood clot. A rupture, measuring half an inch in length was present in the anterior wall of the left ventricle, close to the intraventricular septum and midway between the apex and base of the ventricle. The edges of the rupture were ragged and the hole through the ventricular wall was cone-shaped, the base of the cone being the external opening. The heart muscle was flabby, but there was no naked-eye appearance of fatty degeneration. The aorta was atheromatous and numerous calcified plates were seen in its walls. The descending branch of the left coronary artery was almost completely occluded at its origin by atheromatous degeneration of its walls, and at this point the vessel was of a stone-like hardness. This branch was traced down to the site of rupture and evidently the myocardium, deprived of its blood-supply by the atheromatous obstruction, had undergone the necrosis spoken of by Ziegler as myomalacia cordis. The wall of the ventricle thus weakened by the necrosis had given way. The fact that the retracted left lung gave no support to the heart on that side may also have been a factor in the resulting rupture. Both these patients had been inmates of the Royal Aberdeen Asylum for some years.

I am indebted to Dr. J. Reid for his permission to publish these cases, and I have to thank Dr. Duncan of the pathological department at the University of Aberdeen for his kind assistance in the preparing of the specimens.

Aberdeen.

NOTE ON A CASE OF STREPTOCOCCUS WOUND OF THE FINGER.

By W. P. COWES, M.D.,

SURGEON TO THE BOSTON DISPENSARY; FORMERLY SURGEON TO THE ACCIDENT WARD, MASSACHUSETTS GENERAL HOSPITAL.

THIS case is reported as the unusually short period of incubation is of interest.

The patient, who was a married man, 44 years of age, was seen in the accident ward of the Massachusetts General Hospital on Oct. 28th, 1905. The history was as follows. About 6.30 A.M. on that day he was sparring with a fellow workman and in delivering one of his blows he struck the back of the index finger of his right hand against his opponent's tooth, making an incised wound. He was seen at the accident ward before 12 noon that day. Examination showed a wound on the index finger just posterior to the first knuckle; this was seared over. There was no other wound found nor were there evidences of any septic places around the hand. On opening the wound pus was seen. A cover-glass preparation was made and a culture was taken. The wound was douched, very slightly enlarged, touched with carbolic acid and alcohol, and drained. The finger did well and the man

intussusception, but I had to confess that it might have been occasioned by an enlarged and inflamed gland, or even by a faecal accretion. Rectal examination proved negative. I expressed my suspicions but did not meet with much credence, the more so as another member of the family, a boy, aged three years, had also that night passed a blood-stained motion. Now, the firmest adherent to the doctrine of the necessity for suspecting the existence of an intussusception in every unexplained abdominal derangement cannot conscientiously assert that this lesion occurs in an epidemic form in families. I was reluctantly compelled, therefore, tentatively to acquiesce in a diagnosis of dysentery. This I did the more readily in view of the fact that the treatment adopted—frequent doses of sodium sulphate by the mouth, together with high rectal injections of astringent solutions—was not directly inimical to either condition. Two days later, on Nov. 7th, I again saw the patient with Mr. Eddowes. No change had yet occurred in the frequency and character of the motions but the child was distinctly losing ground. There was no vomiting now or at any other stage of the illness. On abdominal examination I was unable to discover the mass which had been present at my first visit, but Mr. Eddowes informed me that he had distinctly detected it a few hours before my arrival. Now this alternating presence and absence of the tumour, accompanied by frequent bloody and mucous stools of an otherwise not decidedly unhealthy texture, is so characteristic of the condition that I with more firmness declared that in my opinion the case was one of subacute incomplete intussusception for which an immediate exploratory incision was indicated. Once more my dictum was rudely shaken by the discovery that the elder child, before mentioned, had also that morning voided a blood-stained motion. On the previous occasion his stool had been pale, loose, and distinctly blood-stained, leading one to fear that he might be at the beginning of an attack of dysentery; this time the motion was healthy and well-formed, containing only a streak of blood such as is not uncommonly produced in children by a rectal polypus. I performed a rectal examination with a view to discovering a growth of this character but the result was negative. I next suggested that the original patient, the baby, should be examined in a similar quest. A whiff of chloroform was consequently administered and a careful rectal examination undertaken, both digitally and by inspection through a speculum; the result was *nil*. Abdominal palpation also proved negative. On Nov. 9th Mr. Eddowes telephoned to me to the effect that the child was slowly sinking. On ascertaining that the elder boy was perfectly well and had passed no further blood in his stools I once more declared my views as to the existence of an incomplete intussusception. This time I decisively asserted my opinion, insisting that in immediate operative interference lay the only possible hope of saving the life of the patient.

On the following morning, the ninth day of the illness, Dr. G. A. E. Murray of Johannesburg was summoned to perform a laparotomy, which I witnessed. On opening the abdomen in the middle line coils of distended small intestine at once protruded. On tracing the gut downwards it was found to grow narrowed and its walls were seen to be discoloured, the congestion becoming more intense until, about the upper third of the ileum, a very small enteric involution was met with. The intussusception was readily reducible and the mesentery at this point was then anchored by a stitch or two to the peritoneum of the anterior abdominal wall. The whole operation occupied not more than some 20 minutes, the greatest haste being necessary in view of the extremely collapsed condition of the patient. Hot bottles, stimulants, and subcutaneous injections of normal saline solution were energetically employed, but without avail, for the child never rallied and death supervened two hours later.

Remarks.—This case appears to me to present many features of unusual interest which seem to render it worthy of the detailed description I have given of its course. In the first place, there is the fact of the comparative rarity of these cases of incomplete intussusception in which the occlusion of the bowel is incomplete and the passage of faeces continues unimpeded, whilst there is little or no vomiting. These cases may last for weeks or become chronic and exist for months or years, death in most instances being due to exhaustion. Secondly, there was the considerable amount of hæmorrhage from the bowel. Usually, in subacute or chronic intussusception the catarrhal changes at the neck of

the involution are comparatively slight and the stools are characterised only by small hæmorrhages. Thirdly, there was the similarity to a case of dysentery—superficial, it is true, yet sufficiently exact to obscure the diagnosis. In a paper on chronic intussusception published in the *Transvaal Medical Journal* of November, 1905, I drew attention to the frequency with which diagnostic difficulties of this character arise. Fourthly, there were the disappearance and reappearance at intervals of the abdominal tumour. According to Treves, a tumour is felt on abdominal examination in only 50 per cent. and rectally in only 32 per cent. of these cases, and in the paper already quoted I have drawn attention to the recognised fact that the tumour, once it has been felt, may disappear from time to time. For this reason it is essential that the examination of the abdomen should be undertaken both thoroughly and repeatedly. Fifthly, the fact that another child of the same family should also, and at about the same time, have passed blood-stained motions was perhaps the most perplexing factor of this difficult case. Had it not been for this fact I should have insisted upon operative interference on the occasion of my very first visit, when the patient was still of comparatively good health and the prospects were favourable. In the circumstances we had to await developments in the second child and in the meanwhile lost valuable time. Mr. Eddowes has since informed me that a few days after the death of the patient a native servant of the same household had developed undoubted dysentery, for which he was successfully treated at the Johannesburg Hospital. The question thus arises as to whether it is possible that both children had also suffered from dysentery, the baby developing her intussusception as a sequela to this disease. If so, one would expect the elder child to have been constitutionally affected, whilst apart from his blood-stained motions he appeared throughout to be in perfect health. The parents themselves attached little importance to his condition and the mother informed me that all her children from infancy had been known occasionally to pass blood in their stools whilst enjoying perfect health. Lastly, the fact of the situation of the intussusception in the course of the ileum is of interest, the enteric being one of the rare forms of intussusception.

Johannesburg.

A CASE OF PNEUMOCOCCAL CEREBRO-SPINAL MENINGITIS SIMULATING "SPOTTED FEVER."

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AND
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The following case appears to be of especial interest at the present time in view of the prevalence of epidemic cerebro-spinal meningitis in various parts of the United Kingdom. The patient, a man, aged 24 years, was an architect's assistant and had been working in the vicinity of Hampstead for some months. He was a well-built young fellow of considerable prowess as an athlete. His previous health had been good, but there was a history of a slight attack of influenza about a month ago, and he is said to have had a severe attack of "sunstroke" (fever, severe headache, and vomiting) about eight years ago, when he was in bed a week. The patient's mother's brother is said to have died from meningitis some years ago after an illness of 36 hours.

The patient's illness began on Feb. 12th, when he returned from work in the evening complaining of headache and motions. He vomited three times during the night. On the next day he got up for a few hours; he was "dull and heavy" but did not sleep. The temperature was 100.2° F. He took a dose of cascara and had several loose motions. During the night he apparently had a fit. On the 14th he was seen for the first time by us. In the morning the temperature was 100°, the pulse was 108, the respirations were 48, the tongue was dry and coated with brown fur, and the throat and pharynx were dry and glazed; there was no enlargement or ulceration of the tonsils. He was in a semi-comatose condition and could only with difficulty be roused. The heart and lungs were normal except that there were some dry rhonchi at the

on pulmonary tuberculosis. He had treated some 20 by tuberculin controlled by the opsonic index and he was convinced that in many cases it had achieved a great result.

Dr. Raw distinguished between two forms of abdominal tuberculosis: (1) a primary form due to the bovine type, and (2) a secondary form due to the human type. In many cases of pulmonary tuberculosis running an unfavourable course there was evidence of intestinal infection and he thought it difficult to accept the suggestion that this was due to a secondary infection by a bovine type.

Dr. J. P. LORD said the question raised was of great importance as regards public health. If milk was infected with tubercle it might be either the bovine or the human variety: if the bovine the cows could be tested and the source of infection traced; if the human variety it was a matter of difficulty to trace the infection. He asked by what means it was possible to distinguish between the bovine and human variety.

Dr. G. A. CRACE-CALVERT said that he did not think that the report of the commission altogether supported Dr. Raw's contention. It had been possible by the passage of the bacillus through calves to obtain a bovine type. The two types were not certainly different. The fact that T.R. tuberculin would act in all varieties of tuberculosis was a point in favour of the identity of the two types of the animal. In support of this view he quoted the following cases, the first a case of pulmonary tuberculosis which died after eight inoculations of T.R. tuberculin; the second, a case of tuberculous abdominal gland which recovered after four inoculations. In the report of the commission both human and bovine tubercle came from the renal glands, and there was no class of case which could be said to be definitely bovine or human.

Dr. HOWARD H. TOOTH asked what precautions were taken with regard to the injection, and whether the opsonic index had been taken.

Dr. F. M. SANDWITH said that in Egypt every form of tuberculosis mentioned in the paper was common except tuberculous meningitis. In Egypt surgical tuberculosis was most common. Tuberculin had been used with bad results. He did not think it rare for pulmonary tuberculosis to follow tuberculous glands. In Egypt the mothers often suckled their children for two years, and when cows' milk was given was nearly always boiled. Tubercle was extremely rare in cattle in Egypt and yet all forms of tuberculosis were common except tuberculous meningitis. This fact did not support the distinction of types of bacilli, but he thought that the investigation of the disease in Egypt might present some interesting results, for human tuberculosis was common, while bovine tuberculosis was rare.

The PRESIDENT also commented on the rarity of pulmonary tuberculosis in association with surgical tuberculosis.

Dr. RAW, in reply, said he did not think that T.R. tuberculin had any beneficial effect on pulmonary tuberculosis. He thought it was possible to distinguish between varieties of the tubercle bacilli by culture. Avian tubercle was quite distinct from bovine and human tubercle. He thought it of the greatest importance to eradicate tuberculous cattle from the herds which supplied milk to the large towns, for a single tuberculous cow might infect the whole of the milk coming from that herd.

MEDICAL SOCIETY OF LONDON.

Operations for Malignant Growths of the Naso-pharynx and Pharynx.—Hæmaturia due to Bilharzia Hamatobia causing Papillomata of the Bladder.

A MEETING of this society was held on Feb. 25th, Mr. C. W. MANSELL MOULIN, a Vice-President, being in the chair.

Mr. F. S. EVE read a paper on Some Operations for Malignant Growths of the Naso-pharynx and Pharynx. He first alluded to the complexity of the subject of operations in this region. It was often found that the superior maxilla had been sacrificed unnecessarily and the contour of the face and the patient's power of mastication impaired thereby. To meet many of these cases he had designed an osteoplastic operation which obviated the removal of the superior maxilla. By his procedure the superior maxilla was raised from its bed and bent upwards and forwards without removal. This gave a full view of the naso-pharyngeal cavity. Any growth present could then be removed and the

superior maxilla replaced. Several cases were referred to. The first time that the operation was performed by Mr. EVE was in October, 1904, but the patient died from shock. The next case was operated upon in February, 1906, with complete success, the patient being presented before the meeting and the tumour, a fibro-sarcoma, exhibited. Lately Mr. EVE had slightly modified his procedure, for which he claimed the following advantages: the avoidance of parotid fistula or interference with the lacrymal duct and the preservation of the superior maxilla. On the other hand, the risk of shock by interference with the structures at the base of the skull was considerable and the division of the lower fibres of the facial nerve was inevitable. The procedures of various surgeons were then described and discussed—namely, the methods of Watson Cheyne, Annandale, Langenbeck, Nélaton, Chabot and Guérin, and Kocher. Mr. EVE then referred to malignant disease of the tonsil and certain pharyngeal growths, most of which were best removed through the mouth. One of the chief causes of death in such cases was pneumonia; this was best prevented by a preliminary laryngotomy. Laryngotomy and tying the external carotid Mr. EVE regarded as necessary preliminaries in all operations for extensive pharyngeal tumours.—Mr. MANSELL MOULIN congratulated Mr. EVE on his paper and the success of the case shown. He (Mr. Mansell Moulin) had employed the operation described by Mr. EVE. The chief difficulty was the preservation of the soft palate and this could be done by removing the periosteum with its muscular attachments from the hard palate.—Dr. F. PARKES WEBER and Dr. F. J. PORTNOR discussed the prognosis of these cases and Mr. EVE replied that in many instances the tumour presented quite a low degree of malignancy. A case of lymphosarcoma, for instance, had remained well for many years.

Mr. H. J. CURTIS read a paper on a case of Hæmaturia due to Bilharzia Hamatobia causing Papillomata of the Bladder, which were removed by suprapubic cystotomy. The patient was a Matabele boy, aged about ten years, who had suffered for some months previously from pain over the bladder, frequency of micturition and incontinence, and hæmaturia. The urine was tinged with bright blood throughout, whereas usually in such cases the blood came only at the termination of micturition. The case occurred in Rhodesia, where infection by the bilharzia, except in people coming from outside, was practically unknown. The symptoms suggested the presence of stone or villous tumour. The presence of calculus was negatived by sounding and suprapubic cystotomy was performed and the growths, wherever possible, were excised and the nodular condition of the vesical mucous membrane was treated by daily irrigation through the wound with a solution of silver nitrate, increased gradually from half a grain to two grains to four ounces of distilled water. The patient was able to be up and about within a week or two of the operation. Only twice during a period of four months was a faint tinge of blood visible. The condition of the patient remained satisfactory and when heard of two years later there had been no obvious recurrence of symptoms. Microscopic examination of a papilloma revealed the presence of numerous ova of the bilharzia hamatobia in the substance of the growth. Such definite tumour formation as the result of irritation by an animal parasite was interesting in relation with the more complex question of the origin of cancer. Attention was also directed to the important observations of Captain S. R. Douglas, I.M.S., and Major F. W. Hardy, R.A.M.C.,¹ that of the cells found in the urinary deposit in 50 cases of soldiers suffering from bilharzia disease treated at Netley Hospital a very large proportion were found to be eosinophiles, and that in the presence of bilharzia the average percentage of eosinophiles in the circulating blood was increased to 16.4, and in one exceptional case to 40 per cent. (the normal being 4 or 5 per cent.). It was so also in disease produced by other parasitic worms, such as trichinosis, hydatid disease, and dracunculiasis (guinea-worm), a useful point to remember where the diagnosis was obscure. As a rule, the diagnosis was readily made by the presence at the end of micturition of blood teeming with ova having a characteristic spine at one end. The disease was practically unknown in Rhodesia, the present case being the third treated in Bulawayo Hospital according to the Reports for 1897-1906. All three cases—two whites and one native—

¹ THE LANCET, Oct. 10th, 1903, p. 1002.

was soon discharged. The cover-glass showed numbers of streptococci and the culture was a pure one of that organism. From the time of the injury to the time when the man was treated could not have been over four hours.

Boston, U.S.A.

A Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

NORTH-EASTERN HOSPITAL FOR CHILDREN, HACKNEY-ROAD, E.

A CASE OF VOLVULUS OF THE SMALL INTESTINE IN A
CHILD, AGED SEVEN YEARS.

(Under the care of Mr. J. P. LOCKHART MUMMERY.)

FOR the notes of the case we are indebted to Dr. G. P. Norman, late house physician and acting resident medical officer.

The patient was a boy, aged seven years. He was sent to the North-Eastern Hospital for Children as a case of appendix abscess. The history was that for some time the child had had a bad cough but it had got slightly better recently. At 6 A.M. on the day before admission the child complained of severe pain in the abdomen. Two hours later he was sick and vomiting continued throughout the day at frequent intervals. There was no action of the bowels, though he had had a normal motion on the previous day. On the next day the pain continued and he vomited twice in the morning. The mother did not notice anything special about the vomit. He was seen by a medical man in the afternoon who sent him to the hospital at once.

On admission at 4 P.M. his face was flushed and he seemed in pain. His respirations were rapid and noisy. The pulse was very rapid and running. He did not vomit after admission. Râles and rhonchi were present in both lungs but there was no dulness. The lower part of the abdomen did not move with respiration and a swelling could be seen in the upper part of the right iliac fossa; the skin was not red over it. On palpation the swelling felt rounded and firm and was very tender. It was dull on percussion. Good resonance was obtained over the remainder of the abdomen. Per rectum nothing definite could be felt. There was no distension of the abdomen. The pulse-rate was 130, the respirations were 40, and the temperature was 99.8° F. The temperature was higher when taken at home. Everything seemed to support the diagnosis of appendix abscess and it was decided to operate. Mr. Mummery performed the operation under chloroform.

An oblique incision two inches long was made through the skin over the appendix area, the muscles were divided, and the peritoneum was opened. On opening the abdomen some blood-stained serum escaped and a black mass could be seen. The incision was enlarged and the mass was found to be a loop of intensely congested small intestine, close to the cœcum, which had been twisted on itself. It was extremely tense but still shiny. Gas slowly oozed from one pin-hole spot when the bowel was handled. As the twist could not be undone without bursting the bowel and its recovery was very doubtful it was decided to resect it. A pair of clamps was then put on the bowel at each end of the congested portion and the bowel was divided between the clamps and the affected portion removed, the peritoneum being ligatured in several portions. The ends of the divided bowel were united by means of a Murphy's button reinforced by a few sutures, this being the most rapid method possible. The incision through the peritoneum, muscles, and skin was then closed except at the lower end where a gauze drain fixed in a piece of india-rubber tubing was put down to the junction in the bowel. During the early part of the operation the condition of the patient was bad, but it improved later, though the pulse continued weak. Six ounces of normal saline solution were injected shortly after the operation, but the patient gradually grew weaker and died eight hours after the operation. On

examining the portion of bowel removed the volvulus was found to have occurred around a caseating gland in the mesentery. It was only with considerable difficulty that the bowel could be untwisted, even after it had been removed.

Remarks by Mr. MUMMERY.—Volvulus of the small intestine is a very rare condition and is said not to occur in normal bowel. In this case the caseous gland in the mesentery appeared to have been the point about which the twist occurred and the direct cause of it. The close resemblance of the condition to appendix abscess was remarkable and it seemed hardly possible to have made any other diagnosis. The classical symptoms of acute obstruction were not prominent. Vomiting was well marked during the first 24 hours but on the second day had almost ceased and at no time was there fecal vomiting. There was no distension of the abdomen at all and the swelling caused by the strangulated bowel was not resonant on percussion.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Human and Bovine Tuberculosis; with Especial Reference to Treatment by Special Kinds of Tuberculin.

A MEETING of this society was held on Feb. 26th, Mr. J. WARRINGTON HAWARD, the President, being in the chair.

Dr. NATHAN RAW read a paper on Human and Bovine Tuberculosis. He said that tuberculous infections of the human body were divisible into two groups: (1) those caused by the bacillus *typus humanus*, and (2) those caused by the bacillus *typus bovinus*. These bacilli were varieties of the same species, but gave rise, according to the method of infection, to quite distinct and different lesions. The cultural differences between bacilli of human and bovine origin were sufficiently characteristic when typical to differentiate them, but the microscopical appearances of the bacilli were not characteristic. His conclusions were based on a clinical observation of over 4000 cases of phthisis pulmonalis, including over 700 careful post-mortem examinations on cases of tuberculosis, together with laboratory research and animal inoculation. Provisionally he classified the various tuberculous lesions in the human species into two great groups as follows. Group I.—Lesions caused by the tubercle bacillus, *typus humanus*. (a) Phthisis pulmonalis; (b) secondary ulceration of intestines; and (c) tuberculous laryngitis. Group II.—Lesions caused by the tubercle bacillus, *typus bovinus*, conveyed by milk, meat, &c., and also by direct infection. (a) Acute milky tuberculous; (b) primary intestinal and mesenteric disease, including (1) tabes mesenterica, (2) tuberculous peritonitis, and (3) tubercle of the pelvic organs; (c) tuberculous lymphatic glands; (d) tuberculous joints and bones; (e) lupus; (f) tuberculous meningitis; and (g) tuberculous ulceration of the cornea. The chief object of the paper was to produce evidence of an important character, as the result of the inoculation of animals, to show that tuberculous glands of the neck are of bovine origin, the result of absorption through the tonsils and mouth. Human and bovine tuberculosis were apparently antagonistic to each other and a mild attack of one seemed to confer immunity against the other. This had an important bearing on treatment. He had had a new tuberculin prepared based on these observations and results would be announced.

Dr. DAVID LAWSON said that he had been struck by the fact how seldom the so-called surgical forms of tuberculosis were present in cases of well-marked pulmonary tuberculosis. Out of some 700 cases of pulmonary tuberculosis in various stages of the disease he had only seen three cases with surgical tuberculosis. On the other hand, he had difficulty in accepting the suggestion that the difference in infection was due to a variation in the organism. Milary tuberculosis was said by Dr. Raw to be due to the bovine type, whilst pulmonary phthisis was due to the human type, and yet it was not uncommon to see pulmonary tuberculosis terminate in a milary tuberculosis, and tuberculosis terminate in a milary tuberculosis, and he could not think that the patient had become infected by another variety of the organism. Dr. Raw had stated that T.R. tuberculin did not exert a beneficial

been very fairly satisfactory; flexion and extension were quite good, abduction was fair, but rotation of the humerus on its own axis was poor. All these movements were improved by exercise and rubbing. It was pointed out that should the operation be performed again for a similar pathological condition it might be advisable to add a posterior incision to the anterior one and so possibly divide the neck of the scapula from behind, and also to remove a little more bone from the neck of the scapula than was done in this case.—Mr. SPENCER said it was difficult to define such a largely used term as excision. At the shoulder-joint the posterior incision had long been recommended; the circumflex nerve had, of course, to be avoided.—Mr. JOHNSON asked as to the nature of the passive movements used. He suspected that sometimes too vigorous early movement defeated its object by causing more cicatricial tissue to form.—Mr. KELLOCK, in reply to a question by Mr. C. GORDON WATSON, said that he sacrificed the upper part of the long head of the triceps as well as the long head of the biceps; these were less important than the muscles inserted into the upper end of the humerus because they had other attachments. As to the passive movements he agreed with Mr. JOHNSON. In the present case he had, for special reasons, begun them on the tenth day but as a rule he waited until later. He recognised that the operation he now proposed was rarely applicable to cases of disease, such as tuberculosis, for this usually affected the humerus more than the scapula.

PATHOLOGICAL SOCIETY OF LONDON.

The Parathyroid Glands in Man.—A Histological Study of the Human Parathyroid Glands.

A MEETING of this society was held on Feb. 19th, Dr. P. H. FRY-SMITH, the President, being in the chair.

Dr. DAVID FORSYTH read a paper founded on a detailed examination of the Parathyroid Glands in nearly 60 human bodies. After referring to the contradictory views held on the subject, some regarding the bodies as essential in the highest degree to life, and others looking on them as mere embryonic rests of thyroid tissue, he began by describing the naked-eye anatomy of the glands. Their number, though generally two to each lobe of the thyroid, was inconstant and might be three, four, five, or even six. Their position in the neck was variable, but they showed a predilection for certain sites and never lay superficial to the sternohyoid, sterno-thyroid, or omo-hyoid muscles, being invariably wrapped in the same compartment of the deep cervical fascia as the thyroid gland. They were to be sought either at the junction of the upper and middle thirds of the posterior border of the thyroid lobe or at the junction of the middle and lower thirds or around the posterior pole. Their relative numbers in these positions were 4 : 3 : 2. Other less common sites were the interior of the thyroid lobe, the connective tissue round the superior pole or hidden between the thyroid and the trachea. A parathyroid was found in the anterior mediastinum of the thorax. The frequent absence of distinguishing features was probably the cause of their being sometimes overlooked and the risk of omission was further increased feeling that parathyroid tissue might be associated with lymphatic glands, thymic residues, or accessory thyroids, without arousing suspicion as to the composite nature of the whole. The typical parathyroid was an elongated, ovoid, slightly flattened body of a pale-pink hue with a smooth, glistening surface on which ramified a few branching vessels. It very frequently contained much fat and might present few features except those of a nodule of well-vascularised adipose tissue. This variety would be specially liable to escape recognition. Some specimens were brown in colour like accessory thyroids, while rarely a parathyroid black in tint might be found. The size varied from 2.5 centimetres by 0.5 centimetre and there was no constancy in the total volume of parathyroid tissue in different subjects, one individual having, perhaps, 10 or 23 times as much parathyroid tissue as the next examined. A point of importance in connection with the supposed embryonic character of the glands was the relation between parathyroids and accessory thyroids. It was clear that if isolated parathyroids became thyroidal their number would show a decrease with age, while accessory thyroids should increase and be found in the position occupied by parathyroids. Statistical evidence was adduced showing

that parathyroids were most numerous in the first year of life, thereafter progressively decreasing till old age. Within the former period they occurred to the number of three to six; between the first and tenth years the greatest numbers were three and four; above ten years two was the maximum. On the other hand, accessory thyroids were not found in 75 per cent. of the infants under one year, in 43 per cent. of the children between one and ten years, and in 5 per cent. of the adults. These figures showed that up to one year of age parathyroids were 7.2 times as common as accessory thyroids, from the first to the fifth years 3.5 times, from the sixth to the tenth years 1.4 times, while between the eleventh and twentieth years equality was established. Thereafter the preponderance went to the accessory thyroids. Next the histology of the organs was considered in detail, the new facts brought forward by Dr. Forsyth being illustrated by microscopical specimens and lantern slides. While to some extent confirming the classic work of Sandström the present research showed that far from being embryonic and functionless the parathyroids normally secrete colloid material. Welsh's supposition that the organ contained two varieties of cells—the oxyphile and the principal—was quoted and it was shown that these were in reality two stages in the activity of one kind of cell. The principal cell was the exhausted cell and the oxyphile the rested cell. The protoplasm of the former gradually re-filled with eosinophile granules which were extruded into the surrounding lymphatic spaces and passed into the lymphatics either directly or after aggregating to form drops of colloid among the cells. Often the polyhedral parathyroid cells grouped themselves round a central lumen containing colloid and a definitely formed vesicle thus resulted. Photographs of all stages from the massed arrangement of the cells to a regularly formed vesicle were thrown on the screen and the resemblance of the last to the thyroid was noted. As a rule, any one section of a parathyroid showed cells in all stages of activity and rest and the changes in the cells during secretion were the same as those in the glandular epithelium of other organs. The secreted material agreed in its physical properties and micro-chemical reactions with that of thyroid colloid and the two appeared identical. Attention was drawn to the fact that for some little time after birth the parathyroid presented an immature appearance in contrast to that attained at a slightly later period. The infantile parathyroid had a uniform aspect of inactivity, the protoplasm of the embryonic cells being comparatively large in amount, but containing no oxyphile granules. Finally, mention was made of the pituitary gland which possessed clear cells and granule cells. In the course of this research many pituitaries, both of men and of animals, were examined and it would appear that the two varieties of its cells stood in the same relation to each other as the principal and oxyphile cells of the parathyroid. Cells intermediate in degree of activity between these two were found, as also were intercellular granular material, drops of secretion, and small vesicles.

Mr. W. L. HARNETT read a paper on a *Histological Study of the Human Parathyroid Glands*. After briefly summarising the work of the past 20 years on the parathyroid he gave a general account of the histology of the gland. The two types of cell ordinarily met with were described, the granular oxyphile cell and the clear principal cell; it was stated that transitional stages between these two were of common occurrence and the view was advanced that all were merely phases of the same cell, the oxyphile cell being the resting stage and the principal cell the discharged stage. The frequent occurrence of colloid in the gland was remarked upon and it was pointed out that the presence of colloid was associated with other evidence of activity in the presence of large numbers of oxyphile cells. Fat was found to be normally present in the gland when it showed signs of activity and it was stated that the gland which contained the most fat presented also the largest number of oxyphile cells and the greatest amount of colloid. After describing the appearances of the gland at various periods of life, he said that the conclusion to be drawn was that it began to show signs of activity in early childhood and became steadily more active as age advanced. No constant change was found in respect of which the glands differed from the normal glands at about the same period of life. In a case of parenchymatous goitre, however, in a girl, aged 18 years, the glands contained a considerable amount of colloid and presented a picture of activity quite unusual at

probably became infected from outside Rhodesia, the disease being endemic along the east coast of South Africa, in Natal, the Transvaal, and the Cape, and notably in Egypt. According to Captain Douglas and Major Hardy, the endemic area of the disease in Africa had been widely extended by the movements of infected soldiers, and the possibility of extension of the disease to other countries needed therefore to be borne in mind. Mr. Curtis also considered the mode by which infection occurred, the prognosis, and the means of treatment. One of the papillomata and microscopic sections were exhibited.—Mr. MANSELL MOULLIN remarked that bilharzia was certainly becoming more common than formerly, judging by his experience at the London Hospital. He had found urotropin a remedy of value.—Dr. F. M. SANDWITH recalled the fact that it was 40 years ago since the late Dr. John Hardy first directed attention to the subject of bilharzia. Dr. Sandwith had made search in the Egyptian papyri and it seemed probable that this disease was not referred to. In the present day there had been at least 100 soldiers discharged from the British army for the disease. Two cases had been recorded in persons who had never been out of the British isles, one by Mr. Berkeley Hill and one by Major E. C. Freeman, R.A.M.C. If it could spread in this way to one person it might do so to others. The parasite might, it was true, enter the body by the stomach but it could not live in an acid solution; probably it entered by the skin. The presence of eosinophiles was not a diagnostic feature as it occurred in various other diseases. He had tried urotropin. Undoubtedly it turned a septic cystitis into an ordinary cystitis but did not diminish the number of ova in the urine. No certain remedy had yet been discovered but the filix mas was the best. Some cases were cured by surgical measures. Papillomata occurred late in the disease. The disease produced many hundred deaths in Egypt and there must also be a very great number of cases in South Africa.—Mr. EYE referred to some specimens sent to the Hunterian museum some years ago by Mr. Herbert Milton of Cairo.—Mr. CURTIS replied.

CLINICAL SOCIETY OF LONDON.

Spinal Meningocele treated by Operation after Rupture.—Resection of the Jejunum and Colon for Carcinoma.—A New Method of Excision of Joints.

A MEETING of this society was held on Feb. 22nd, Dr. W. HALE WHITE, a Vice-President, being in the chair.

Mr. RAYMOND JOHNSON and Mr. O. E. REYNOLDS described a case in which a Meningocele in the Sacral Region was successfully treated by operation in an adult after the sac had ruptured spontaneously. The patient was a woman, aged 22 years, in whom the tumour of the back had only been noticed for about two years. The tumour was of the size of a large orange, and after spontaneous rupture of the thin skin covering its summit large quantities of cerebro-spinal fluid continued to escape. An operation was performed and the small opening by which the sac of the meningocele communicated with the theca was treated like the neck of a hernial sac and ligatured, the rest of the sac being removed. On the sixth day after the operation cerebro-spinal fluid again began to escape from a small opening in the otherwise healed wound. For 37 days the free discharge continued. A second operation was then undertaken and a very small opening which led into the theca was closed by suture. From this date no further leakage occurred and the wound remained soundly healed. Several months later the woman was reported to be in perfect health. A point of interest in this case was that the tumour formed by the spinal meningocele was not noticeable until adult life had been reached, although a small dimple in the skin over the coccyx had been present from birth. It was further of interest that during the period of more than a month, when cerebro-spinal fluid was constantly escaping in large quantities, the patient presented no symptoms directly attributable to the loss.—Dr. HALE WHITE referred to Dr. St. Clair Thomson's case in which large quantities of cerebro-spinal fluid dripped from the nose. The patient lost three times as much fluid that way as by the kidneys and yet was in perfect health.—Mr. W. G. SPENCER said that he had operated on a similar case which was leaking and suppurating at the time. There was a dermoid cyst in the wall of the meningocele and this was probably the source of the irritation that had

promoted rapid growth. In the present case the amount of fluid might have been due to local sepsis and so caused general symptoms, because it was derived merely from local area. He detailed two operations which he had performed in infants suffering from a like condition.—Mr. C. F. FAGGE said that with a view to the prevention of leakage he was in the habit of first suturing the dura mater transversely then dissecting up elliptical flaps from the deep fascia of the erector spinae, and suturing this longitudinally over the dura mater.—Mr. JOHNSON, in reply to Dr. ALEXANDER MORISON, said that no changes in the pulse-rate had been noted as the result of the loss of fluid. Indeed, the only change noted was relief of the headache. He disagreed from Mr. Spencer's explanation of the source of the fluid in the present case because cultures were sterile till quite late, and then the appearance of staphylococcus albus did not coincide with any increase in the amount of fluid poured out.

Mr. FAGGE communicated a case of Resection of the Jejunum and Colon for Carcinoma. The patient, a woman, aged 33 years, was admitted to Guy's Hospital with history of attacks of abdominal pain, relieved by vomiting extending over three months; the vomiting had been most severe for the past three weeks. A hard lump was felt in the right iliac fossa. To the left of this was seen a peristaltic wave in a large coil passing from left to right. The temperature was 96° F. and the pulse was 118. The abdomen was opened on the day of admission, Dec. 11th, 1905. A malignant mass was found in the jejunum 18 inches from the duodenum, involving also the hepatic flexure of the colon. The jejunum and colon were resected and closed, and double lateral anastomosis of jejunum to jejunum and ascending transverse colon was effected with small and large Murphy buttons, the former being passed about six weeks, and the latter four weeks, after operation. Microscopically the growth was a carcinoma.—Dr. HALE WHITE commented on the result of the case recorded. He shortly described a case occurring in a man aged 32 years. Duodenal ulcer had been diagnosed but at the operation a jejunal growth was found and short circuited. The patient died later with secondary deposits.—Mr. T. H. KELLOCK inquired whether any symptoms of stricture had appeared as the result of the use of Murphy buttons. He agreed as to the difficulty of deciding in this matter of the treatment of such cases, as the surgeon was practically deprived of the two-stage method of procedure.—Mr. FAGGE said that no symptoms at all were present in January of this year. As a general rule he thought that the use of Murphy's button was not good surgery, but it certainly saved time in many cases.

Mr. KELLOCK read a paper entitled "Excision of Joints, New Method of Operating at the Shoulder." Attention was first drawn to the fact that comparatively little change had taken place in the technique of the operation on the various joints. Comparison was made between the operation of excision as performed at the hip and at the shoulder: in the former the section of bone was made within the capsule, and no muscular attachments to the femur were disturbed, whereas at the shoulder the humerus was divided through the surgical neck and the insertions of the important muscles into the tuberosities were sacrificed as well as, in the case of a child, the most important seat of growth of the humerus. The operation now described was an endeavour to save the muscles and the epiphyseal line, whilst still preserving a moveable joint; it was carried out by removing the necessary amount of bone from the scapular instead of the humeral side of the joint. The operation as performed on the dead body was comparatively easy. After opening the joint by a long anterior incision the muscles attached to the upper end of the humerus were retracted; the coracoid process was broken but not completely separated and turned a little downward with the origins of the biceps and coraco-brachialis muscle. The neck of the scapula was then sawn through and the glenoid cavity completely removed, sacrificing only the long tendon of the biceps and a part of the middle head of the biceps and structures of comparatively little importance. The patient on whom the operation had been performed was a man, aged 41 years, who had sustained a dislocation of the left shoulder, complicated by fracture of the surgical neck of the humerus 11 weeks previously. The fracture had united firmly in good position, but the subcoracoid dislocation remained undisturbed. At the operation the glenoid cavity and part of the neck of the scapula were removed by gouge forceps and the head of the humerus fell back easily into the cavity. Passive movements were commenced early. The result has

sites. The compensation for public-house property constituted a heavy item in the outlay. These premises, however, were not spared, as the council was well alive to the immense injury done by drunkenness in the city. Apart from the action of the corporation in removing slums, commercial enterprise had been active; railway companies, warehouse companies, and so forth had swept away large numbers of insanitary dwellings. In 1883 some 16,000 insanitary dwellings existed. These had now been reduced to between 6000 and 7000, and the corporation had recently decided, pending the sanction of the Local Government Board, to deal with six more areas under the Housing of the Working Classes Act, and to erect suitable dwellings upon them. These schemes were estimated to cost £270,000. The paper was illustrated by a number of slides showing the old and the new buildings, and the various points in connexion with these latter.—Dr. S. R. ROSS exhibited a number of lantern slides, illustrating the life of the slum children, made from photographs taken in the course of his work as medical officer to the Society for the Prevention of Cruelty to Children.—Dr. G. G. STOFFORD TAYLOR said that the demolition of public-house property would not stem the tide of drunkenness. Education, regular employment, and public opinion could alone effect a reformation in the habits of the drunkard, and when these failed his children should be taken from him and brought up at the expense of the State in order to protect them from their vicious surroundings.—Dr. W. CARTER thought that the solution of the slum problem would largely depend upon the solution of the drink problem. Every successive medical officer of health of Liverpool had complained that their efforts at improved sanitation in the houses of the poor were rendered largely nugatory by the prevalence of intoxication. Years ago when the late Professor Parker and the late Professor Sanderson were invited by the corporation to inquire into the causes of the insanitary condition of Liverpool they gave a conspicuous place in their report to drunkenness among the working classes. The facts stated by Dr. Hope that £5000 a year were taken at three public-houses in one of the lowest districts of the city, and that in the whole city from one and a half to two millions sterling were spent yearly in intoxicating liquors were alarming. It was a good thing for Liverpool that its great public officers were not merely hard routine officials but had the enthusiasm of humanity to aid them in their great work.—Dr. A. G. GILLAN, Dr. W. WHITFORD, Dr. J. HILL ABRAM, and Dr. H. ARMSTRONG also spoke.

ABERDEEN MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 7th, Dr. A. R. Galloway, the President, being in the chair.—Dr. Ashley W. Mackintosh read notes on a case of Myasthenia Gravis. The patient was a woman, age 31 years, with no nervous family or personal history, who began to show bulbar symptoms (difficulties of articulation, swallowing, and mastication) along with diplopia, ptosis, and external ophthalmoplegia; great general weakness of the limbs and ready exhaustion of muscles on exertion soon appeared. Under treatment the general condition of nutrition markedly improved but the limbs remained weak and easily tired. No sensory disturbances, no trophic signs, no fibrillary tremors, and no rigidity appeared at any time, and the sphincters were quite intact. Apart from occasional head pain none of the general symptoms of cerebral tumour were present. The involvement of the cranial nerves was very marked. There were double ptosis and external ophthalmoplegia, profound paralysis of the upper facial muscles and of the elevators of the lower jaw, great weakness of the lower facial muscles with the "rasal smile of Gowers," and great difficulty of articulation, mastication, and swallowing, the lips, tongue, and palate being markedly involved. There was weakness of the respiratory muscles with weak and useless cough. The tongue appeared to become smaller and somewhat wrinkled. The orbicularis palpebrarum gave the myasthenic reaction. Many of the symptoms varied greatly in severity from time to time and most of them were aggravated by continued use of the muscles involved. An alarming attack of syncope without any apparent cause took place, followed by a tendency to attacks of dyspnoea, and death ensued ten days later from collapse of the lung and aspiration pneumonia. The duration of the illness was about 11 months. No necropsy was permitted. The differential diagnosis was discussed at some length, special attention being drawn to the

difficulty of distinguishing myasthenia gravis from hysteria and chronic bulbar paralysis. Remarks were made on recorded observations which had been made on the morbid anatomy of myasthenia, on the probable seat of lesion, and on the pathogenesis of this condition. It was believed that at present they could only agree with Gowers in regarding myasthenia as a nutritional disorder impairing the vital processes in the muscle, although Farquhar Buzzard's observations on the constancy of slight changes in a limited number of muscular fibres in every one of his cases were regarded as suggestive.—Dr. Peterkin read a paper on the Treatment of Acute Otitis Media. He first remarked on its very common occurrence and on it being almost always the forerunner of the chronic suppurating condition which was a menace to the efficiency and safety of the sufferer. The frequency of this chronic suppurating was due to the fact that physicians did not see a large number of the acute cases until too late, but also many physicians did not treat them as the serious condition which they undoubtedly were. He said that the treatment of acute otitis media was divided into two stages—that before and that after perforation of the tympanic membrane. During the acute stage the relief of pain was the most urgent requirement of treatment; for this one of the best remedies was a solution of carbolic acid in glycerine, 10 or 20 grains to the half ounce, with or without the addition of 10 grains of cocaine hydrochlorate. A few drops of this solution warmed and instilled into the ear every hour or two generally brought relief. Where it failed ear baths might be used. This consisted in filling the meatus with hot boric acid solution and allowing it to remain for a few minutes; this was repeated every hour or two and in the intervals hot boric fomentations were applied over the ear. Poultices were unhesitatingly condemned on account of their tendency to encourage sloughing. As internal remedies, particularly where the temperature was raised, an analgesic antipyretic was frequently useful and an opiate would probably be necessary in the evening. If those remedies failed there still remained free incision, not puncture, of the membrane. This very rarely failed to give relief. It relieved pain by relieving pressure, allowed the discharge to escape, and was the best site for bleeding. In the milder cases a vertical incision in the posterior inferior quadrant was sufficient, but in the more severe cases the incision ought to be carried up the whole extent of the drum and on to the posterior superior wall of the meatus. Incision ought to be done if the preliminary treatment did not give relief in 24 hours. When, however, there were indications for an earlier incision it ought not to be postponed. Such indications were a bulging membrane, high temperature, vomiting, convulsions, or any signs of cerebral irritation, and also any marked mastoid tenderness. The drum ought also to be incised at once in otitis media occurring in the course of the zymotics. The most useful local anæsthetic was one composed of equal parts of menthol, cocaine hydrochlorate, and carbolic acid. After the membrane had ruptured or been incised treatment must be directed to the promotion of drainage from the middle ear. Frequently syringing with a warm, mild antiseptic such as boric acid was enough to bring about healing, but if discharge continued after some days of this treatment peroxide of hydrogen might be used. This was best done before syringing so as to prevent irritation of the meatus. In the few cases where even this was not enough to effect a cure boric spirit drops used after syringing would frequently benefit the case. This was only to be used after all signs of acuteness had disappeared. It was advisable in using these drops to practise tragal massage until the spirit was felt in the throat. The insufflation of boric powder was not good as routine treatment. It might lead to the blocking up of discharge and even cause mastoid abscess. As to mechanical aids to drainage, middle-ear inflation ought not to be done while there was much pain, but although there was considerable diversity of opinion as to its use after pain had ceased Dr. Peterkin advocated its use. Young and Milligan's experiments on the cadaver were unsatisfactory and they had not proved their objection to the practice. The application of suction to the middle ear was another mechanical method of treatment which was complementary to inflation and did not replace it, as the opponents of inflation stated. The treatment of any lesion of the throat and nose was of the utmost importance and where it was non-operative it ought to be undertaken at once. Operative treatment, such as the removal of adenoids, ought to be undertaken so soon as the temperature had become normal;

this age. No grounds were found for supposing the parathyroids to be affected in Graves's disease or in tetany. The occasional resemblance of parts of a parathyroid to the foetal thyroid was noted. The general conclusion was that the observations lent support to the view that the parathyroid was able when necessary to assume thyroid functions rather than to the view that it had a function of its own entirely unconnected with the thyroid and absolutely essential to the continuance of life.

OPHTHALMOLOGICAL SOCIETY.

Exhibition of Cases and Specimens.

A CLINICAL meeting of this society was held on Feb. 14th, Mr. R. W. DOYNE, Vice-President, being in the chair.

Mr. LUDFORD COOPER showed a case of Paralysis of the Vertical Movements of Both Eyes. The patient was a man in whom there was complete paralysis of the vertical movements of both eyes which had come on suddenly and for which no explanation could be found.—Mr. J. H. FISHER had seen two similar cases, one in a girl who was found one morning unconscious with this paralysis. She recovered consciousness rapidly but the paralysis persisted for a long time. The explanation he then gave was an embolism of one of the small arteries of the corpus quadrigeminum. The other case showed hemianopic pupil reaction without a hemianopic field, a condition never before recorded, and post mortem a diffuse growth of the lamina quadrigemina was found.

Mr. A. STANFORD MORTON showed a case of a man, aged 54 years, who two years previously received a steel foreign body in his right eye. The sight of this was immediately affected. About a month later the sight of the left began to fail and within three months was almost completely lost. Now the right eye showed typical siderosis, with atrophy of the nerve. The left eye showed a similar condition of the disc, the atrophy being of the post-neurotic type. There was marked arterial sclerosis in both eyes. The left pupil showed the Argyll-Robertson reaction. No sign of central nervous disease could be found.

Mr. MALCOLM L. HEPBURN showed a case of a man, aged 61 years, with Polycoria associated with Chronic Glaucoma. The sight of the right eye had become dim recently, though for the last three years he had noticed coloured rings round the lamps. He had had no pain. The left eye was normal in every respect. The right eye showed an unusual appearance of the iris which, he stated, had been present from birth. There was a complete pupil placed down and in which reacted to light, while the part between the pupil and the periphery was made up of five triangular-shaped bands of pigmented iris tissue, with their bases towards the angle. These bands inclosed clear spaces, through any of which the details of the fundus could be plainly seen. In addition to these bands an almost complete circular stump of pigmented tissue was visible at the angle of the anterior chamber, in which the bases of the different bands were lost. The patient stated that the pupil used to be in the centre of the eyeball, but of late years it had gradually come to occupy its present position. The fundus showed glaucomatous cupping of the disc. The case was interesting from a developmental point of view and two explanations were possible—one that the iris was originally complete and by subsequent atrophy, as the result of inflammatory action or otherwise, had partially disappeared; the other was a faulty development, which was difficult to understand, since the pupil was perfectly formed.—Mr. E. TRACHER COLLINS suggested as a possible explanation the failure of the formation of some of the loops of vessels which go to form the iris.

Mr. WARREN TAY showed a drawing of an Eye from a case of tuberculosis which was only diagnosed after an ophthalmoscopic examination had been made. This occurred 22 years ago. He showed this in order to disprove the statement of an eminent physician who stated that this had never been done.

Mr. J. H. TOMLINSON showed a Retinoscopy Longarm to facilitate the practice of retinoscopy in children.

Mr. W. HALLIBURTON McMULLEN showed a case of Detachment of the Retina cured by two scleral punctures.

Other cases were shown by Mr. G. W. THOMPSON and Mr. G. H. POOLEY.

LIVERPOOL MEDICAL INSTITUTION.

Submucous Resection of the Nasal Septum.—Pulsating Exophthalmos; Ligation of the Common Carotid Artery.—Housing of the Working-classes in Liverpool.

A MEETING of this society was held on Feb. 14th, Mr. FRANK T. PAUL, the President, being in the chair.

Dr. W. PERMEWAN read a paper on Submucous Resection of the Nasal Septum. He described in detail and illustrated by lantern slides reproduced from Dr. StClair Thomson's drawings the method introduced by Killian of Freiburg and then briefly indicated the procedure adopted by Freer of Chicago. Dr. Permewan insisted on the advantage of operating under cocaine, without a general anæsthetic, and said that there was practically no pain, no shock, and no hæmorrhage. He thought that a satisfactory result could always be predicted if the operator had sufficient experience and sufficient patience, but the operation should not be undertaken by anyone unskilled in nasal surgery. He then demonstrated the operation on a dissected specimen and showed the instruments used.—Dr. J. E. McDUGALL thought the submucous operation had a great future before it. He considered it an interesting speculation whether the efforts which had been made in recent years to establish free nose-breathing in children would reduce the frequency of intranasal operations in later life.—Mr. T. GUTHRIE could corroborate what Dr. Permewan had said as to the great value of the operation. He asked what Dr. Permewan considered to be the earliest age at which the operation should be performed. Freer regarded it as suitable for all ages, but stated that in children a recurrence of the deformity was probable unless the operation was a very thorough one. Was there any risk that in children the operation would involve a subsequent dropping of the bridge of the nose?—Dr. J. BARK and Mr. T. C. LITTLE JONES also spoke.

Dr. A. NIMMO WALKER showed a case of Pulsating Exophthalmos successfully treated by Ligation of the Common Carotid Artery. The patient, a married woman, aged 29 years, had been admitted into St. Paul's Eye and Ear Hospital in May, 1906, with the history that six weeks previously she had been struck on the left temple by a large piece of wood, and on the following day had noticed a swishing noise in the head which became gradually worse, with increasing swelling of the left eye. The left eye was found to be proptosed, with dilated episcleral veins, hazy cornea, and cedematous conjunctivitis, while the right eye also was congested and prominent; pulsation could be felt in both eyes and, with the murmur, was controlled by pressure on the left common carotid. The artery was tied and a month afterwards the eyes were about normal. At the present time, eight months later, the only abnormality was enlargement of the episcleral veins of the left eye, the sight of which had recovered from doubtful perception of light to normal vision with the help of a correcting lens; the vision of the right eye had always been normal. Dr. Walker thought that in this case the artery had leaked into the cavernous sinus, but that this, far from being a contra-indication to operation, as had been previously taught, was indicative of its immediate necessity; whether the lesion was aneurysm or aneurysmal varix early ligation was recognised now as the right treatment, a result largely due to the teaching of his father, Mr. G. E. Walker, who had advocated this operation ever since his first case in 1878.

Dr. E. W. HOPE, medical officer of health of Liverpool, gave an account of the position of the city in regard to insanitary property and the measures taken by the corporation to deal with it. He explained the reasons in connexion with the rapid growth of the city which led, during the early part of the last century, to its development upon lines resulting in the erection of many thousands of dwellings of an insanitary character. A heavy legacy of insanitation had thus been left for future generations to deal with. In 1883 a special committee was appointed to deal with the masses of insanitary property existing in the city and from that year onwards, at varying rates of progress, the work had been proceeded with under the provisions of the Liverpool Sanitary Amendment Act. Dr. Hope explained the difficulties which had to be contended against and stated that upwards of a million sterling had been spent by the corporation in removing insanitary dwellings and re-erecting suitable habitations upon their

mastoid abscess following right middle-ear disease on Dec. 4th, 1906. Attacks of *petit mal* had been observed for a year. After operation drowsiness supervened and a left-sided convulsion followed by hemiparesis. There was no headache, vomiting, or optic neuritis. Granulations were found blocking the opening from the antrum into the tympanum and removed but the dura mater was found to be healthy; the drowsiness and weakness then disappeared. Ten days later headache and drowsiness came on and a needle inserted into the temporo-sphenoidal lobe showed pus; the abscess was drained and recovery was then uneventful.

—A girl, aged three years, with Undue Mobility of the Right Knee-joint was shown by Dr. F. J. Poynton. If semiflexed she could voluntarily move the tibia outwards and slightly forwards over the femur and back again into position. The movement was apparently due to the popliteus muscle. There was considerable laxity of the lateral and crucial ligaments. The movement was accompanied by a clicking sound. When the limb was extended there was no lateral movement and walking was not interfered with. The articulations of the wrist and fingers were to a lesser degree more mobile than natural. —A case of "Punch"-like Intonation in a Syphilitic Infant was shown by Dr. G. A. Sutherland. The child, aged three years, had been blind since birth and could not sit or stand. He was small and flabby and markedly rickety, with syphilitic scarring round the mouth. There were post-neuritic atrophy of the optic nerve and general choroidal atrophy. His speech, which was unintelligible, was squealing or "Punch"-like. The larynx appeared to be normal. Dr. Sutherland had seen a similar case in a hydrocephalic infant. —A case of Infantileism was shown by Dr. L. A. Olutterbuck. The patient was a girl, aged 13½ years. She was intelligent but did not know her letters. She was only at school for a year up to about eight years of age. Her height was 3 feet 4½ inches and her weight was 2 stones 6½ pounds. The breasts were quite undeveloped. There was no history of syphilis or of consanguinity in the parents.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 1st, Dr. Augustus H. Bampton, the President, being in the chair. —Dr. G. Newton Pitt read a paper on the Value of Blood Examinations to the General Practitioner. —Dr. C. H. Melland gave a lantern demonstration illustrative of the Conditions of the Blood in Health and Disease. —Dr. T. Churton showed a case of Anæmia Splenica Infantum. —Dr. T. W. Griffith showed a case of Pernicious Anæmia in which there was Enlargement of the Spleen. —Mr. H. Bailey and Dr. W. H. Maxwell Telling showed a case of Chronic Lymphatic Leukæmia in which there was Massive Enlargement of the Glands all over the body. —Mr. H. Littlewood showed a patient in whom Removal of Malignant Growths occurring simultaneously in the Splenic Flexure and Rectum had been successfully performed. —Dr. A. S. F. Grünbaum showed some Preparations of *Spirillum Gallinarum*, *Piroplasma Canis*, and *Trypanosomes*. —A meeting was held on Feb. 15th, the President being in the chair. —Dr. Telling and Mr. C. C. Gruner communicated a paper on Actinomycosis, with notes of some unusual cases. In one case the disease had affected the back of the hand of a woman, aged 24 years; it was regarded as tuberculous and had resisted surgical and x ray treatment for two years; it readily cleared up on the administration of large doses of iodide of potassium (reaching six drachms a day at one time), combined with daily immersion in baths of hot lotion of biniodide of mercury of strength 1 in 2000. In another case the disease had affected the external and middle ear and the mastoid cells. A radical mastoid operation was performed by Mr. G. Constable Hayes and this, combined with the administration of iodide of potassium, had brought about rapid recovery. Three cases of the disease affecting the abdomen were also described and the clinical and diagnostic features of the disease as it affected the abdominal viscera were discussed. —Mr. B. G. A. Moynihan read a paper entitled "Remarks upon the Treatment of Acute Appendicitis." He drew attention to the occurrence of intestinal peristalsis after the swallowing of fluids. A case was detailed in which an intestinal fistula existed and where it was found that in a period varying from one and a half to three minutes after the drinking of any fluid a peristaltic ejection of intestinal contents was accompanied by the abdomen. It was pointed out that water was not absorbed

at all from the stomach, having to pass always through the pylorus into the intestine, and so starting a peristaltic wave which travelled through the intestine. Cases were referred to in which milk, or water, was recovered in full from a high jejunal fistula within five minutes of being taken. The importance of peristaltic unrest in disturbing an inflamed appendix was emphasised. To secure rest to the appendix absolute starvation of the patient for several days was necessary; in practice there was rarely any difficulty in carrying out this treatment. But above all in importance in the treatment of acute appendicitis was the necessity of avoiding aperients. Cathartics given in acute appendicitis were responsible for many of the serious complications of the disease; they increased peristalsis and added to the bacterial virulence of the intestinal contents, at that place more particularly where microbic life was most abundant—namely, the ileo-caecal region. In acute perforative appendicitis a history could almost invariably be obtained which showed that the acute outbreak of the disease was due to an aperient. When peritonitis was profuse an operation should be performed at once and the principles advocated by Dr. J. B. Murphy scrupulously observed. These were rapid removal of the appendix; avoidance of exposure or damage to any intra-abdominal viscera; drainage through the original incision and through a median abdominal incision; the propping up of the patient in the sitting posture, and continuous rectal infusion. A vaginal tube introduced into the rectum was connected with a receptacle, slightly elevated and containing saline fluid warmed by a spirit lamp. Fluid trickled slowly into the rectum and was absorbed at the average rate of one pint an hour. In his own cases from five to 11 pints were given; then the flow was discontinued for an hour or two and restarted, after a turpentine enema if such were needed. Mr. Moynihan had operated by this method upon 15 successive cases, with one death. —Dr. J. B. Hellier showed a Child born without Eyes. —Mr. Michael A. Teale showed a case of Recurrent Transient Proptosis of the Right Eye. —Mr. Littlewood showed a patient who had been operated on for Malignant Disease of the Tongue and the Scrotum occurring simultaneously. —Dr. Telling showed a Thrombus of gradual ante-mortem formation occluding the aortic arch. —Other specimens and cases were also shown by Mr. J. Stewart, Mr. H. Secker Walker, Dr. A. Bronner, Mr. Gruner, Mr. R. Lawford Knaggs, Mr. Hayes, Dr. E. F. Trevelyan, and Dr. L. A. Rowden.

ROYAL ACADEMY OF MEDICINE IN IRELAND.—A meeting of the Section of State Medicine was held on Feb. 8th, Dr. F. C. Martley, the President, being in the chair. —Dr. Thomas Donnelly read a paper on the Report of the Viceroyal Commission on the Poor-law. He chiefly dealt with the report as it affected the Poor-law medical service. With regard to the proposal to form a State medical service he said that the representatives of the people did not want it, while the medical profession were divided in their opinion, although not satisfied with their present position, but in his opinion these different views ought to be capable of adjustment. He approved of the proposal to establish county hospitals and smaller district hospitals; the latter he thought ought to be established in every dispensary district, while the county hospitals ought, in his opinion, to have an out-patient department attached to them and be the dispensary for the district. Dr. Donnelly then passed on to the consideration of the salaries of the medical officers in the proposed service, which he thought ought to commence at £200 per annum, rising to £400, with fees and a residence rent-free. The medical officers should be entitled to an annual holiday of one month and retirement after 20 years' service ought to carry with it a pension equal to half the total salary of the medical officer and after the age of 65 years he should be entitled to a pension equal to two-thirds of his total salary. The next point considered in the paper was the board of control, as proposed in the report. This he strongly objected to as likely to raise the greatest opposition to the scheme and advocated instead that all appointments should be in the hands of a committee elected by the county council. As regards entrance to the service Dr. Donnelly thought that all the medical officers ought in addition to their ordinary qualifications to have special certificates in lunacy and obstetrics and to have passed 12 months as locum-tenents in the service. —Professor E. J. McWeeney read a paper on the Policy with regard to Tuberculosis outlined in the report of the Viceroyal Commission on the Poor-law. He began by referring to the increase of tuberculosis in

it ought not to be put off until the otitis was cured. If discharge still continued from the ear, and as the patient might not know whether the ear was discharging or not the physician ought to see to it personally, at the end of six weeks the mastoid antrum ought to be opened. It was a mistake to wait for the classical symptoms of mastoid disease, as the patient might be very deaf before these appeared.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held on Feb. 13th, Dr. Arthur Foxwell, the President, being in the chair.—Mr. R. H. Rollinson-Whitaker showed a case of Graves's Disease in which he had tied the two superior thyroid arteries. The patient, a woman, aged 46 years, had suffered from Graves's disease for 15 years, and had for the last four years been practically bedridden. She had been unable to walk more than a few steps and those with great difficulty and often unable to feed herself from weakness and tremor. An operation, undertaken after three months' treatment in a nursing home, was performed under a local anæsthetic. After 48 extremely anxious hours, during which the patient showed signs of commencing acute thyroidism, great restlessness, vomiting, delirium, temperature 102° F., pulse 180, and respirations 44, she commenced to improve rapidly. 16 days after the operation pulsation in the thyroid had almost disappeared, the gland had diminished in size by four inches, and the pulse had fallen to 100. The general condition had gradually improved up to the present time when the patient was able to attend to her household and social duties and to walk considerable distances in all weathers.—Mr. W. Billington showed a case of Leontiasis Ossea in a girl, aged 19 years, who presented symmetrical bony outgrowths on each side of the nose. The nasal processes of the superior maxillæ were chiefly involved. Her facial appearance was typically leonine. The nasal ducts were obliterated and there was commencing nasal obstruction. The girl was a congenital syphilitic. The disease began six months ago and had progressed steadily and painlessly.—Mr. A. Lucas and Mr. J. Hall-Edwards showed a case of Lymphadenoma treated with Marked Improvement by the X Rays. The patient was a middle-aged man, with large masses of glands in the neck on the left side, in the left axilla, and in the left groin. He was exceedingly emaciated, cachectic, and so feeble that he could hardly stand, his breathing becoming laboured on the slightest exertion. The patient had not responded to ordinary therapeutical measures but after a fortnight of x ray exposures he commenced to improve and at the end of two months all the glands had disappeared and this disappearance of the glands was associated with a very marked improvement in the general condition, so that at the present time the patient was able to take long walks without undue fatigue.—Dr. J. G. Emanuel showed a case of Hyperidrosis. The patient was a man, aged 53 years, who had been troubled with a profuse sweating, after any exertion, affecting the left half of the face, head, and neck, and upper part of the trunk as low down as the intermammary line, an area corresponding to the distribution of the sweat fibres in the cervical sympathetic. The condition followed a severe attack of influenza and had persisted unchanged for two and a half years. The pupils were equal and reacted equally to light, accommodation, shade, and cocaine. There were no exophthalmos and no retraction of either lid. The question raised was whether this was due to partial paralysis of the right cervical sympathetic, with anidrosis of the right side of the face and a compensatory hyperidrosis of the left side, or to irritation of the left cervical sympathetic, or to a neurosis of central origin.—Mr. J. Furneaux Jordan showed two specimens. The first was a large, soft, cedematous Fibroid of the Uterus removed from a woman, aged 48 years, who had suffered so severely from hæmorrhage that she could not sit up without fainting and since it continued under treatment and rest in bed operation was imperative. Her convalescence was prolonged. The second specimen was a large, pure Fibromyoma of the Right Ovary removed from a woman, aged 59 years. It was associated with great hydro-peritoneum and an umbilical hernia. The recovery was good.—Dr. J. Miller showed Blood Films from a case of Leukæmia. The patient was a man, aged 46 years, who died after an illness of some three or four months in which breathlessness, lassitude, hæmorrhages from mucous surfaces, irregular temperature, and an enlarged spleen and liver were prominent features. Three weeks before death the blood count was as follows: red corpuscles, 1,500,000; white corpuscles, 30,000;

hæmoglobin, 22 per cent.; and colour index, 0.73. There was marked poikilocytosis with macrocytes and microcytes, and numerous nucleated reds, of which a large proportion were megaloblasts. Of the leucocytes a considerable proportion were myelocytes, both finely and coarsely granular, and there were many basophiles and large lymphocytes. The spleen weighed 40 ounces and microscopically showed a typical leukæmic condition with multiplication of the endothelial cells and some fibrosis. The liver gave the iron reaction.—Dr. O. E. Pursalow showed: 1. An Ovarian Cyst which had undergone spontaneous rupture. The patient had noticed a gradually increasing swelling of the abdomen for five months and two weeks before admission had been seized with sudden severe abdominal pain and vomiting lasting three days. The abdomen was opened and a gallon of free fluid escaped from the peritoneal cavity; the cyst was removed after tying its pedicle; it contained a small quantity of similar fluid and there was a free opening on its upper aspect. It proved to be a multilocular papillomatous cystoma. The patient made a good recovery. 2. A Cystic Kidney which before removal had exactly simulated an ovarian cyst. The specimen was from a single woman, aged 37 years, who had noticed a gradually increasing tumour in the abdomen for two years. There were no other symptoms and it was not till the abdomen was opened that the true nature of the tumour was ascertained. The peritoneal investment was divided, the tumour emptied by means of a trocar and then enucleated, and the pedicle tied. No drainage was employed. The patient made an uninterrupted recovery.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—A meeting of this society was held on Feb. 15th, Mr. Sydney Stephenson being in the chair.—The following cases were shown and discussed. Mr. Stephenson showed a case of Buphthalmos. The patient was a syphilitic child, aged ten months. The condition had been observed immediately after birth. The corneæ, which had been extremely cloudy, had cleared under treatment by physostigmine and mercury internally. Moreover, the operation of anterior sclerotomy had been performed upon the left eye. The child retained fair sight.—A case of Cretinism was shown by Dr. E. I. Spriggs and Dr. F. W. Higgs. The child, who was two years and seven months old, had always been backward. She was 26 inches high; the circumference of the head was 17½ inches. She could not walk or stand and was a typical cretin physically. The mind was equal to that of a normal infant of eight months. The complexion had already improved markedly since thyroid treatment was begun only three weeks ago. One grain of the extract was given three times a day. The weight fell half a pound and there were considerable restlessness and fretting, which ceased when the dose of thyroid was lessened.—A case of Cerebral Tumour was shown by Dr. Edmund Cantley. The patient was a boy, aged ten years. For six weeks he had had attacks of headache lasting 12 hours and terminating in vomiting about once a week. For two weeks he squinted, this being due to paralysis of the left external rectus. He had optic neuritis and exaggerated knee-jerks but no other abnormal signs were found on examination. Dr. Cantley suggested a small quiescent tuberculous focus in the superficial portion of the pons. Dr. Cantley also showed an infant, six weeks old, with a huge Inguinal Hernia in conjunction with basal meningitis. The condition of rigidity of the abdominal muscles made it doubtful if an operation should be done at present for the cure of the very large inguinal hernia.—A Lymphangioma or Lymphatic Nevus of the Left Side of the Tongue was shown by Mr. J. P. Lockhart Mummery. The patient was a boy, aged five years. The surface of the tumour showed small clear-walled cysts. It caused no inconvenience.—Three cases of Aortic Regurgitation were shown by Dr. J. Porter Parkinson; they were all in girls and of rheumatic origin. In one patient, aged nine years, there were aortic diastolic and mitral systolic murmurs. In the second case (aged 12 years) there was only an aortic regurgitant murmur with enlargement of the left ventricle, water-hammer pulse, and well-marked extensive visible arterial pulsation. In the third case (aged 14 years) similar signs were present, but in addition there were a presystolic and thrill at the apex of the heart and presystolic and systolic murmurs in the same situation; the pulse was of moderate size, indicating that there could be little, if any, mitral stenosis.—A case of Cerebral Abscess after operation was shown by Mr. P. Turner. The patient, a girl, aged seven years, was operated on for an acute

general health and by the "guarded attitude" in which the spine was held; the grunting respiration elicited by placing the child in a prone position across the knees was distinctive and more reliance should be placed on distal or radiating pains than on local pain. Muscular rigidity limited to a few vertebrae preceded the bony rigidity with general contraction of the spinal muscles. It was necessary not to confuse lateral curvature with posterior projection of the spinal processes with a lateral curve due to unilateral caries of the vertebral bodies. In the matter of treatment it was pointed out that the case required a recumbent posture for years rather than months. He had been disappointed with the results of laminectomy for compression paraplegia, finding that recovery followed rest in most cases, while laminectomy was of little value except where pus could be evacuated. He was less inclined than formerly to treat abscesses by incision and drainage, preferring to close the wound and to treat it aseptically. The immediate reduction of spinal deformity by successive stretchings was of value, but owing to the great difficulty, especially in out-patient practice, of obtaining prolonged rest most cases relapsed. The differential diagnosis from rickety kyphosis was alluded to and models and drawings of apparatus were shown with photographs of various types of deformity. In dealing with the causes of lateral curvature attention was drawn to the influence of unequal legs, and the difficulty of diagnosis and treatment in cases of crossed asymmetry was mentioned. The treatment fell under the four headings of rest, exercise, massage, and support. Two schools of treatment had arisen, by exercise and by supports, but in the opinion of Mr. Tubby every case could not be adequately treated by either method. Discretion must be used in the choice of treatment and in some both methods might be combined with advantage. Deformed chests, spasmodic wryneck, and coxa vara were briefly referred to, the importance of prolonged rest in cases of osteotomy for genu valgum was insisted on, while the futility of operating in genu valgum of ligamentous origin was shown. The various forms of flat-foot were discussed and explained, splints and supports of different kinds were shown, and the good result following the excision of an inch of the peroneal tendon in some cases was alluded to.

WIGAN MEDICAL SOCIETY.—A meeting of this society was held on Jan. 15th, Dr. Ferdinand Rees, the President, being in the chair.—Dr. A. E. Hodder read a paper on Proliferic Obstruction.—A discussion followed in which Mr. C. M. Brady, Mr. William Latham, Dr. Blair, Dr. M. Benson, the President, and others took part.—A presentation was then made to the past-President, Dr. Blair.—A clinical meeting was held on Feb. 14th in the Royal Albert Edward Infirmary, Wigan.—Mr. Brady read notes of a case in which he had sutured the External Popliteal Nerve three years and ten months after division.—The President showed a case in which after the skull had been trephined for Jacksonian epilepsy no lesion was found but the attacks had ceased. The patient was a boy, 13 years of age, and it was now two years since the operation.—Mr. Berry showed a case of Rupture of the Quadriceps Extensor Femoris Muscle at its junction with the patella in a man 50 years of age.—Mr. E. H. Monks showed an Ovarian Cyst which he had removed from the broad ligament.—Dr. R. Prosser White showed cases of Lupus Vulgaris and of Rodent Ulcer.—Mr. Hugh E. Jones and Dr. Harry Holmes showed cases of Excentral Contraction of the Conjunctiva, Zonular Cataract, Chronic Glaucoma, Sloughing Ulcer with Hypopyon, Iritis with Tension, Dislocation of the Lens, and Needling for High Myopia.

NEWCASTLE-ON-TYNE CLINICAL SOCIETY.—A meeting of this society was held on Feb. 7th, Mr. G. Foggins, the President, being in the chair.—The following cases and specimens were exhibited.—The President: (1) A man, aged 27 years, with old-standing Dislocation of the Lens in the Left Eye; (2) Retinal Haemorrhage in a boy, aged 13 years, the subject of letter blindness; and (3) photographs of cases in the special school for defective-minded children.—Dr. W. E. Alderson: A case of Tertiary Syphilitic Disease of the Tongue in a woman.—Mr. H. B. Angus: (1) Excision of the Knee, followed by irregular growth resulting in marked genu varum; and (2) Contusion of Popliteal Vessels by Fracture of the Femur followed by Gangrene.—Mr. J. W. Leech: (1) Malignant Growth, probably Sarcoma, in the Neck; (2) Tumour in the Groin; (3) Two cases of Tuberculous Dactylitis; (4) Ectopia Vesicae in an infant;

(5) Hypospadias in an infant; (6) Chronic Tumour; and (7) Tuberculous Abscess of the Chest Wall.—Mr. J. Clay: (1) Case of Coxa Vara, with x ray photograph; (2) Ectopic Gestation; and (3) Syphilitic Testicle.—Mr. G. G. Turner: Villous Growths removed from the Bladder, a series of four specimens with illustrative notes. Mr. Turner concluded that as the history of nearly every advanced case of malignant disease of the genito-urinary tract was notable for the occurrence of early neglected haemorrhage, a single attack of urinary bleeding, if not clearly depending on nephritis, demanded cystoscopic examination.—Dr. A. J. Collis contributed a paper on Some Notes on Circumcision, which led to an interesting discussion on the methods of operation and after-treatment of a surgical procedure characterised as one of the very few still left to the general practitioner.—The Secretary, Mr. Leech, drew the attention of members to the fact that the annual address, on Some Recent Theories of Diet and their Bearings on Practical Medicine, would be delivered on April 4th by Dr. Robert Hutchison of the London Hospital.

Reviews and Notices of Books.

Leçons de Thérapeutique Oculaire, basées sur les Découvertes les Plus Récentes. (Lectures on Ocular Therapeutics, based on the Most Recent Discoveries.) By Dr. A. DARIER, formerly President of the Society of Ophthalmology of Paris. Paris: Published at the Bureau of La Clinique Ophtalmologique. 1907. Pp. 400. Price 12fr. 50c.

THIS book is the third edition of Dr. Darier's lectures on ocular therapeutics, the second edition, which was translated into English by Mr. Sydney Stephenson, having been published five years ago. Dr. Darier is one of those enthusiasts who delight in new things. Enthusiasm is ever liable to outrun discretion and Dr. Darier's proves no exception to the rule. He has been wise in the choice of his medium for expounding his views, for the lecture room permits of a freedom of expression and picturesqueness of diction which would be out of place in a text-book. Perhaps the value of the work would have been enhanced by greater restraint and by more judicious utterance. Of the 25 lectures the first 15 are devoted to the discussion of new methods and new drugs, the remaining ten dealing with conjunctivitis, diseases of the cornea, and tuberculous disease of the eye. Diseases of other parts of the eye are referred to incidentally but we gather that they will form the subject of a second volume, as yet unpublished.

The first lecture is introductory, pointing out the "banality and insufficiency" of modern ocular therapeutics, with its "omnipotent triad"—atropine, silver nitrate, and mercury. The second lecture deals with the methods of general therapeutics, especially mercurial medication by the mouth, by inunction, and by hypodermic, intramuscular, and intravenous injection. A brilliant future is prophesied for intravenous injections such as mercury cyanide, biniodide, salicyl-arsenate, and so on. "It is well after a first series of 30 injections to allow a month's rest before resorting to a second or even a third series." In such conditions as interstitial keratitis and choroiditis "it may be necessary to give more than 100 or 200 injections in the course of two or three years." *Toujours l'aurore!*

The third and fourth lectures are occupied with a discussion about local medication, especially subconjunctival injections, for which the author expresses "quite a paternal affection." Some space is devoted to explaining the almost negative results of experimental observations on animals. The effects of sodium chloride, cyanide of mercury, sodium salicylate, and other subconjunctival injections are passed in review.

The remaining eleven lectures in the first part of the work are allotted to various applications to the conjunctiva. These are divided according to their action in modifying the

Ireland mentioned by the Commissioners in their report. The explanation was no doubt that in Ireland very little was being done and that sporadically, whereas in England, amongst other factors, the efforts of independent, whole-time county medical officers of health produced results which could not be hoped for under the excessively bad system which in Ireland placed the health officer's interest in direct opposition to his duty. The recommendation of the Commission that the disused workhouses should be converted into consumption sanatoriums deserved hearty approval. It was a wise suggestion of the Commission that not only curable but advanced and infective cases should be removed to the contemplated sanatoriums. The removal of such patients from their homes was one of the essential parts of the campaign against the disease but in Ireland it would be objected to if there were not some prospect of recovery held out. By proper classification and rigid observance of regulations he thought that the association of curable and advanced cases in one institution might be rendered unobjectionable. The suggestion of the Commission that consumptive inmates of lunatic asylums should be segregated in a few specially adapted workhouse sanatoriums he regarded as particularly valuable, in view of the great difficulty in rendering such cases non-infective. He thought that county councils should have a free hand in devoting public funds to sanatoriums and not be limited to a rate of 1*d.* in the £ as at present. He looked forward with confidence to the growing-up round the sanatorium of auxiliary institutions, such as volunteer philanthropic committees for providing (1) suitable outdoor or hygienic work for ex-patients so as to prevent relapse, and (2) sustenance for the wives and families of tuberculous working men, so as to secure for the latter while in the sanatorium that peace of mind which was an indispensable factor in the treatment. In Germany this need was supplied by the State invalidity insurance.—Dr. Leonard Kidd, Dr. J. M. S. Kenny, and others took part in the discussion.—The following motion, proposed by Mr. John S. McArdle, was adopted:—

That the Section of State Medicine of the Royal Academy of Medicine in Ireland desire to express its approval of the suggestion contained in the report of the Viceroyal Poor-law Commission to convert the entire Poor law Medical Service in Ireland into a national service, to be paid by the State, to be entered by a competitive examination, the members of such service to be jointly controlled by the central body and the local bodies, and that the medical profession should have one representative on the central body.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society was held on Feb. 14th, Dr. Sidney Phillips, the President, being in the chair.—Mr. Raymond Johnson recorded the case of a man, aged 35 years, in whom Fatal Extravasation of Urine occurred from an ulcerated perforation of the left ureter by an oxalate calculus weighing only eight grains. The only symptoms were an attack of vomiting followed by the signs of a localised inflammation in the left iliac region, which were regarded as due to peritonitis. Operation revealed the presence of an abscess in the retro-peritoneal tissue, containing ammoniacal urine and pus. An attack of severe hæmorrhage from the abscess, which occurred on the following day, so weakened the patient as to prevent further interference and death took place on the fourth day. The abscess was found to extend along the whole length of the left ureter and in the cavity the small stone was found.—Mr. Campbell Williams remarked upon the unique character of the case and pointed out that in the urethra an impacted oxalate of lime stone produced more distress than either a phosphatic or uric acid concretion.—Dr. T. B. Hyslop read a paper on Psychorhythm and Recurrent Psychoses. He dealt with cases characterised by recurrence at fairly constant intervals. The exaggerations of the psychorhythmic process which tended to cross the borderline of insanity might be described as perversions of mind due to: (1) deprivation of the factors pertaining to complete consciousness; and (2) faults in metabolism and toxæmia. In the former group the most interesting cases were those of partial consciousness. In childhood night-terrors or somnambulism might precede a condition in which during the daytime there were moral or volitional perversions of which the fully awake state there was no memory. The condition of double personality was not well recognised; there were several main groups. In complete alteration the personality of the individual was entirely different in the two states; there was no continuity of thought and the memory of one state was absent during the occurrence of the

other. In the partial types the variations might depend on sensory experiences which were different from those habitual to the normal self and there might be new bodily sensations or loss of old ones, and there might be illusions of identity of part or of the whole of the individual. The anæsthetic, hysterical types were those in which the symptoms were mainly hysterical with anæsthesia and temporary amnesia; in these cases there were certain "inhibitions" which prevented the recall or the revival of the former sensations. Reference was made to some of the results of the investigations undertaken by Dr. Lewis C. Bruce upon leucocytosis in insanity.—Dr. F. J. Paynton remarked that insanities alternating with other forms of bodily ailment were conditions of great interest and alluded to a case of recurrent and obstinate priapism in which when the rash disappeared the patient became temporarily insane, to recover again when the rash reappeared. He believed that certain observations which he had made with Dr. Alexander Paine and Dr. Gordon M. Holmes might in the future assist in the elucidation of these difficult points. In six cases of fatal chorea, including one of chorea gravidarum, they had found a bacterium in the meninges, or brain, which was identical with that found in rheumatic lesions, and had found in the brain definite, though not gross, changes in the nerve cells. Some, and especially adult, cases of chorea might undoubtedly be temporarily insane.—The President, Dr. J. F. H. Broadbent, and Dr. B. H. Spilsbury also took part in the discussion.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 7th, Dr. W. C. Chaffey, the President, being in the chair.—Dr. A. W. Williams showed a case of Rodent Ulcer successfully treated by the X Rays.—Dr. C. F. Bailey showed a case of Lupus also cured by the X Rays.—Dr. E. Hobbouse showed two cases of Aneurysm of the Aorta, one of the second part of the arch with marked symptoms of pressure on the trachea, there being great dyspnoea; also there was double adductor paralysis of the larynx, which was supposed to be syphilitic in origin and not connected with the aneurysm. The second case had aneurysm of the third part of the arch, with pressure on the left bronchus and paresis of the left vocal cord, also a very small left pulse.—Dr. Walter Broadbent showed a case of Aneurysm of the First Part of the Arch of the Aorta, with pulsation to the right of the sternum and well-marked aneurysmal second sound and diastolic shock but no symptoms; the patient had been under observation for five years. He also showed a man, from whom Dr. F. J. Paley had removed a cerebellar tumour for him four years ago. The patient was blind from post-neuritic optic atrophy, but was otherwise fairly well and was earning a little money by basket making.—Mr. W. A. Bowring showed a fibroid tumour weighing 38 pounds which he had successfully removed. During the operation the right ureter was accidentally divided; he repaired it but a slight uretero-vaginal fistula had remained.—Dr. F. G. Bushnell showed some microscopic specimens of Fat Necrosis and also some pathological specimens.—Dr. Hobbouse opened a discussion on the Use of Alcohol in Medicine. He said that the first question which should present itself was, Would alcohol be of use in this illness, and will it do any harm afterwards? In acute disease alcohol was now regarded as an easily combustible food and was therefore useful at critical times when digestion was bad. He thought it was also necessary in the dyspepsia of hard-worked people and in some chronic diseases. It should never be given at the climacteric age since there was then great danger of acquiring the drink habit. It should also not be given for insomnia for the same reason. It was more valuable in old age and should then be more freely used. In rheumatism and gout it should be altogether avoided if possible.—The discussion was continued by the President and by Dr. R. Sanderson, Dr. R. J. Ryle, Dr. L. A. Parry, and Dr. Broadbent.

SOUTH-WEST LONDON MEDICAL SOCIETY.—A meeting of this society was held on Feb. 13th, Dr. M. Mackintosh, the President, being in the chair.—An address was given by Mr. A. H. Tabby on Some Common Deformities of Children occurring in General Practice. Mr. Tabby devoted the chief part of his address to a consideration of the various forms of deformity of the spine. He drew attention to the importance of early diagnosis in spinal caries before the occurrence of deformity; it was invariably preceded by a stage characterised by failure of the

meals, sleep, exercise, and such employment as children can do. The paragraph on backwardness is good but much more might have been said. For example, there are many children who, owing to late development, are backward at school and yet in later years may become able professional or business men. Referring to the more advanced education of women Dr. Clouston writes: "I would merely emphasise the fact that this higher education has often been carried on at the peril of losing something higher still. It must be made compatible with the motherhood of the race!" Later in this same chapter we read that "control is the regulator of the higher faculties and should precede them in time of first appearance." Is this statement true or would it not be more accurate to say that control is an attribute of the higher faculties?

The author strongly urges that hygiene should be taught in all schools and he considers "that the money and time given to teaching music to scholars with no ear and classics to unclassical minds would be infinitely better spent in physiological and health instruction." His views on religious training will find supporters but probably they would not satisfy any theologian, for he rather treats religion from its utilitarian advantages and not as a fundamental faith which begets the attributes which he so well describes. Special sex questions are admirably treated and in the remarks which the author makes on the subject of alcohol he reminds his readers of the recent experiments made by Professor Kraepelin of Munich and others to ascertain the mental effect of alcohol in doses that would be called moderate. Dr. Clouston considers that physical degeneration is largely brought about by city life and the fact that the children have little access to nature. The mind of the town child may be sharp, cunning, and active but his mental horizon is limited and he lacks observation and breadth of knowledge, which the study of nature alone can give. To counteract this deficiency the author urges the passing of an Act to make it compulsory for all municipalities to provide a playground near their houses for every group of 500 children of the industrial classes in our cities.

In conclusion we have no hesitation in recommending "The Hygiene of Mind" to all those who have the welfare of children at heart. Dr. Clouston is a physician of wide experience and in this book he places much of this experience at the disposal of others.

Humaniculture. By HUBERT HIGGINS, M.A. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., late Demonstrator of Anatomy at the University of Cambridge, &c. New York: Frederick A. Stokes Company. 1906. Pp. 255. Price 5s. net.

By the title of this book we are to understand not the culture of "the humanities" but of mankind, and the method to be adopted is set forth in the first section of this work. Indeed, the more correct designation of this part would be "The Science and Art of Eating." The discovery was made not long ago by Mr. Horace Fletcher of the United States that the ill-health from which he suffered on retiring from business was due to incorrect habits of feeding and that his maladies vanished on adopting the practice of chewing his food more completely. As a result of this procedure he found that he was able to do with much less food and also that his palate became more delicate and his appetite more discriminating. It was to elucidate the correctness of Mr. Fletcher's doctrine that Professor Chittenden's well-known experiments were made, and it is claimed as the outcome of these that the old standard of dietary founded on Volz's work is overthrown and that much current physiological teaching is proved to be erroneous. Mr. Higgins is the prophet of the new doctrine of "poltophagy," as it is called. All food is to be chewed till it is rendered thoroughly

fluid and tasteless and is to be swallowed in this condition. If only mankind will universally adopt this simple habit most of the ills that flesh is heir to will become extinct. We are quite prepared to admit that most men eat too fast and too much; it is also definitely proved by Chittenden's experiments that men can perform hard work and maintain their weight and condition on a much smaller allowance of food than was formerly believed to be possible. But it has yet to be shown that a diet which suited Mr. Fletcher will suit all the world and that it is beneficial in the long run to exist on the smallest possible allowance of food without any margin for storage of energy or of pabulum to provide against emergencies. There even seem to be dangers ahead in any rash attempt at adopting poltophagous habits, since we read in this book of a man of science who was delighted with his first experiences of the new régime but who became seriously ill as the result of his dietetic discipline. The second part of the book contains a brief account of the history of medical doctrines, with commendation of Bouchard's views on auto-intoxication and some general reflections on hygiene and kindred matters.

LIBRARY TABLE.

Infants' Weight Chart. Designed by R. J. BLACKHAM, Captain, R.A.M.C., L.R.C.P. Edin., L.M. Rotunda, D.P.H. Lond. London: W. H. Bailey and Sons.—This chart is intended for keeping the weekly record of weight of infants during the first year of life. It measures about two feet long by one and a half feet deep and is printed in black and red ink on thin paper. Owing to its somewhat large dimensions it would be necessary to nail it up on the wall of the nursery, as it could hardly be kept in a drawer or in a case. A red line shows the normal increase in weight as estimated by Dr. E. Holt. This curve should act as a useful guide in comparing the actual increments in weight with the normal standard. There is no particularly novel feature about this chart except that it is perhaps larger and more distinct than most varieties with which we are acquainted. Every nursery should be provided with some form of weight chart and that which Captain Blackham has designed will serve excellently to fulfil all ordinary requirements.

The Writers' and Artists' Year book, 1907. London: Adam and Charles Black. 1907. Pp. 93. Price 1s. net.—The multiplicity of year-books is getting somewhat confusing, but doubtless each of them is of use to that class for which it is written. The scope of that now before us is explained by the subtitle which is "A Directory for Professional Writers, Artists, and Photographers." Within its pages will be found information as to various newspapers and magazines with indications of the kind of work with which they respectively deal.

The English Woman's Year book, 1907. London: Adam and Charles Black. Pp. 405. Price 2s. 6d. net.—This annual contains a compendium of professions, occupations, sports, and other amusements which are open to women. In this issue are included articles on Women's Suffrage, Co-education, the Civil Service, Domestic Service, and Indexing. As the volume apparently went to press in October there is naturally no mention of domestic servants being included in the new Workmen's Compensation Act.

Hazell's Annual, 1907. Edited by W. PALMER. London: Hazell, Watson, and Viney. 1907. Pp. 620. Price 3s. 6d. net.—Of all the year-books Hazell's is the most retrospective, for though it gives a great deal of information as to our own and foreign countries at the time of going to press yet the body of the book consists of a review of the events of the past year. These are well set out and though many of them deal with burning questions the *résumés*, so far as we have

superficial sensibility (anæsthetics), the deep sensibility (analgesics), the vascular tonus (vaso-constrictors and vasodilators), the muscular tonus of the iris (mydriatics and miotics), and the conjunctival secretions (caustics, antiseptics, and astringents). The anæsthetics include cocaine, eucaïne, tropacocaine, holocaine, stovaine, alypin, and others. The advantages of employing any except the first two mentioned seem to be restricted or even absent. The intraspinal injection of stovaine, which has been used with success in general surgery by Mr. A. E. J. Barker in this country, is discussed, though it appears to have nothing to do with ophthalmology. Alypin is recommended for the removal of foreign bodies from the cornea; we fail to see the advantage which it is said to possess over cocaine. The analgesics are orthoform, acoline, and dionine. Acoline finds its chief use in rendering subconjunctival injections painless. Much space is devoted to dionine, a drug which is undoubtedly of some value but scarcely merits the extravagant praise showered upon it by the author. We have not space to record the diseases in which it is indicated. Amongst the vaso-constrictors adrenalin stands alone. Its value in ophthalmic operations is fully appreciated but we have reason to doubt its efficacy in glaucoma, iritis, scrofulous kerato-conjunctivitis, episcleritis, and other conditions. There is little new in the section devoted to the consideration of mydriatics and miotics, except the enumeration of several of the later synthetic preparations. In treating of the drugs which modify the conjunctival secretions Dr. Darier confines himself almost entirely to the organic compounds of silver—protargol, argyrol, argentamin, argonin, largin, itrol, actol, and collargol. He considers that some of these compounds are as efficacious as silver nitrate, the use of which he has practically abandoned. We are unable to agree with him on this point. It may be admitted that they are less painful and that they do not act upon the epithelium. We are of the opinion that the destruction of the superficial layers of epithelium is an important factor in the utility of silver nitrate in gonorrhoeal conjunctivitis, since the imprisoned organisms are cast off with the resulting slough. We are far from denying the value of protargol in lacrymal obstruction, blepharitis, and some other conditions.

We believe that there is much of value in this book and ophthalmologists of mature experience will derive benefit from its perusal. We are, perhaps, too conservative in our methods in England but we think that Dr. Darier would have produced a more trustworthy work if he had paid more attention to his own *opiter dictum*: "*Il faut toujours se mettre en garde contre un trop prompt enthousiasme.*"

The Hygiene of Mind. By T. S. CLOUSTON, M.D. Edin., F.R.S. Edin. London: Methuen and Co. 1906. Pp. 284. Price 7s. 6d.

IN writing "*The Hygiene of Mind*" Dr. Clouston has made an attempt to put into popular language some of the known facts regarding the development of the mind, so that these facts may be used for the benefit of the race. The aim of the book, as the writer states, is practical and by this standard alone does he wish it to be judged. It is always difficult to treat a scientific subject in a popular manner, as the lay reader must have dogmatic statements and for this reason absolute accuracy must suffer. Dr. Clouston must be congratulated on the result of his labour, for although there are many points with which we should disagree, taken as a whole the book gives a lucid account of the subject. The scheme that he adopts is a very practical one, for after devoting the early chapters to the abstract study of "*the hygiene of mind*" he passes on to describe mind during its evolution and subsequent decay.

In the first chapter he discusses the scope and aims of mental hygiene and describe the way in which mind has

been developed through long stages of evolution. We agree with him that, at any rate from the practical standpoint, the basis of mental hygiene must be the study of the physiological processes of the body so far as these affect the mental functions of the brain. In the next two chapters there is a somewhat cursory description of "*The Brain and its Methods of Working.*" Some of the statements are highly speculative and are liable to mislead the lay reader. For instance, we read that "the colour and qualities of objects and their nearness or distance, the different kinds of sounds and tones, are all printed on the brain as on a book." Some of the sections in the chapter on How the Brain Mechanism Works are good, others are written in almost too popular a style, and a similar criticism may be made regarding the chapter on Principles, Essentials, and Ideals; nevertheless, the author gives many hints which will be very helpful to those whose work is that of training the young. Dr. Clouston goes thoroughly into the question of heredity and gives the views of several recent writers. He sums up the subject by saying, "that we are all agreed in regard to one important conclusion as to heredity—that is, the fact that hereditary defects may occur in two forms—the one is that of definite provable changes from the normal structure and functions of the human body. The other is that defects may occur which are not visible in early life or provable either in bodily structure or functional process, being then only tendencies and potentialities." Dr. Clouston next draws up what he considers to be the ten chief rules of mental hygiene in its relation to heredity and they are certainly valuable axioms and well worth careful study. The reference to social instincts is also good but we notice that the author does not commit himself to any definite ruling as to how to answer those who, with an insane parentage, ask advice as to whether they should marry. He evidently prefers, after pointing out the risks, to leave the decision to his applicants. Mind, Morals, and Will form the subject matter of another chapter in which, among other things, the author endeavours to prove that we must look to the man of science rather than to the moralist or the religionist for the proper understanding of mind, for he evidently feels that he can come to no other decision "if it is the case that all modern investigations done on scientific lines and tested by scientific proofs point to the conclusion that in this world mind is only manifested through brain as its vehicle and is absolutely conditioned in its every form and manifestation by brain action."

In the chapter on the Mental Hygiene of Bodily Disease we read the following statement which we cannot pass unchallenged: "Yet I have seen the most philosophic men full of delusions when the brain was touched by the *microbe* of general paralysis"; we are aware that some authorities favour the microbic theory of general paralysis but surely our present knowledge of the subject is not certain enough to permit of so positive a statement. The warnings that Dr. Clouston gives against the overdoing of games are good, for there is little doubt that the physical exhaustion which is produced in some children by prolonged exertion is very harmful.

The pages that are devoted to the consideration of the Hygiene of Work are ably written and are well worth careful reading. The author strongly urges that the speech faculty in young persons should be more thoroughly developed, as in this way they would not only acquire more accuracy in expressing ideas but the mere fact of better speech would react on the higher centres of the brain and produce keener feelings and greater intelligence. Much emphasis is laid on the importance of attending to the bodily development during the early years of life; the education in any technical sense is not recommended before the age of seven. "System, order, and punctuality" should be the rule of the child's life and this should apply to play,

THE LANCET.

LONDON: SATURDAY, MARCH 2, 1907.

Medical Education and the Examination System.

WE publish this week the address delivered on Feb. 15th by Dr. LAURISTON E. SHAW before the Hunterian Society, forming the annual Hunterian Oration of that society, in which the orator has drawn valuable lessons from the consideration of HUNTER'S career, and none the less valuable because they are so unexpected. For who would have thought that upon the life-story of HUNTER there could be founded a logical denunciation of the examination system? And yet there is much to be said for the view that the methods of HUNTER'S education, or some would say his want of education, were largely responsible for his insatiable curiosity, his practical industry, and his originality of procedure. Our present methods of medical education, in Dr. SHAW'S opinion, bid fair to destroy these qualities in our students, compelling all of them under pain of failure in examinations to work during their most receptive years solely with their eye upon examinations, and so destroying in them many of the characteristics the development of which should be the true outcome of education. Many thoughtful persons engaged directly in medical education hold the same view.

Dr. SHAW'S is a general statement. He does not enter into the vexed question of the length of the different stages of the educational course, or of the actual subjects appropriate to each stage, but the force of his words will be all the better appreciated when we remember how completely our present arrangements for instructing our medical students fail to give satisfaction to many thoughtful persons. Recent debates in the General Medical Council show that the reform of the curriculum is being seriously considered by that body. Whatever examining authority the student looks to for his degrees or diplomas the educational demands now made upon him by the curriculum are such that he finds it essential to spend the statutory five years in close touch with books; he values the instruction that he obtains from his hospital teachers mainly from the point of view of whether it will or will not assist him in an imminent examination. This means that the demands made upon students by their examinations seriously interfere with their clinical studies. The fifth year of the student's curriculum was, as we know, specially designed to be devoted to practice. Book work of all sorts at this stage was to be put behind the student's back. This was the intention of the General Medical Council when the curriculum was lengthened from four to five years, the extra year of study being given for the express purpose of clinical work. But, as a matter of fact, the fifth year has become overloaded with

book work intruding upon the practical routine, and reform of some kind is generally felt to be required. The direction which such reform will take must be influenced by the belief or the reverse which is held by the Council in the value of examinations, especially of external examinations, where the students are tested by others than their teachers. It has been suggested that it is the reliance upon external examinations only that makes these tests faulty as well as over-rigorous and it has been proposed by no less an authority than Mr. T. PRIDGIN TEALE, among others, that the different medical schools should examine their own students at any rate in the ancillary sciences. The idea would find favour in Dr. SHAW'S eyes but the Council would probably object to the opening so given for down-grade competition between the schools. Many have insisted that the time has come when all the medical profession should enter through one portal and when two professional examinations only should be necessary before a man can take his place upon the Medical Register. Some educational authorities, taking an exactly opposite view, would have a student's time so divided off that at the end of each year he would be examined in a series of subjects and would not be permitted to go forward with his studies until he had passed such tests in their due order. This means putting a premium on book work and on the employment of "coaches," and we can hardly believe that the General Medical Council is likely to make any alterations in the curriculum that would lead to such a result; but neither can we believe that the Council, all the numberless difficulties being taken into review, is likely, yet at any rate, to look favourably upon the relaxation of the examination system.

Yet the failure of the examination system is to a certain extent proved by several things. The percentage of rejections in medical examinations has steadily increased with the multiplication of examinations; and it is certainly a poor result of education that tests should have so disastrous an outcome. It would seem that the fact of having to get through examinations prevents the students from learning their work from the examination point of view, while depriving them of the time necessary to study from any other point of view. The large part played by the element of chance is a standing argument against the needless increase of examinations. Professor EDGEWORTH, Professor of Political Economy at Oxford, has recorded a number of experiments in the marking of examination papers which have been frequently quoted, as their interest merits. He showed that there are data upon which to found assumptions as to the influence of chance in the results of examinations. In a certain group of examinations he found that the element of chance was such that at any given examination the probability of displacement upon re-examination would amount to one-seventh. When we take into consideration the fact that all candidates for medical examination are not able and not industrious, and that most medical students have now to pass, allowing for subdivisions into subjects, at least six examinations, we can understand how it is that the student's curriculum lasts on the average over six years, although it is only designed by the General Medical Council to cover five years. These facts are only the more suggestive among many, and reflection upon them

been able to check them, are written in a perfectly impartial manner.

Herbert Fry's Royal Guide to the London Charities. Forty-third issue. Edited by JOHN LANE. London: Obatto and Windus. 1907. Pp. 383. Price 1s. 6d. *Classified Directory to the Metropolitan Charities for 1907.* Thirty-second annual edition. Edited by W. F. HOWE. London: Longmans, Green, and Co. 1907. Pp. 214. Price 1s.—These two admirable publications give the would-be alms-giver every information as to how he shall dispose of his charity. The *Classified Directory* issues a table of figures giving the approximate income of the various charities which is most interesting reading. From this table it appears that, including only hospitals, pensions and institutions for the aged, institutions for the supply of food, and institutions for general relief, exclusive of Mansion House funds, the enormous sum of £2,693,362 was collected during the year 1905-06. And yet the daily press is full of harrowing accounts of distress and of appeals for relief, to say nothing of nearly every hospital being in debt or wanting more money. Is distress really so acute or are there waste in, and overlapping of, charitable relief?

JOURNALS AND MAGAZINES.

Annals of Otolaryngology, Rhinology, and Laryngology. December, 1906. *Fraenkel Festschrift* Number.—This number, about three times the usual size of the journal, has been brought out with special reference to the celebration of the jubilee of Professor Fraenkel's connexion with the specialties of rhinology and otology, and it opens with a short article of appreciation in German by Otto Freer. Next follows a review by W. Freudenthal of Fraenkel's life, with a list of his contributions to literature, followed by no less than 53 articles, mostly by well-known Americans, on various diseases of the nose and throat. The first are *Diseases of the Trachea*, by J. E. Newcomb; *Tumours of the Trachea*, by O. F. Theisen; and *Stenosis of the Trachea*, by W. K. Simpson. But the list is too long to quote in *extenso*. There are articles by Logan Turner of Edinburgh, Kelly of Glasgow, and Luc of Paris; *Unilateral Nasal Headache*, by Wingrave of London; *Paraffin Injections*, by Walker Downie; a *Note on Submucous Resection*, by Lake; *Statistical Report on Operations for Sarcoma*, by Price-Brown of Toronto; *Violent Epistaxis in a Gouty Patient*, by Trifiletti of Naples; and *Nasal Operations*, by Baratoux of Paris. These are amongst the contributions from members of the profession residing in various parts of the world. It is a thoroughly representative number and does great credit to the energies of the editors in collecting such a series of papers for such a laudable object as the marking of the great German laryngologist's jubilee in laryngology.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary Comitia was held on Feb. 22nd, Sir RICHARD DOUGLAS POWELL, Bart., K.C.V.O., the President, being in the chair.

Communications were received from: (1) Mr. S. F. Cowell reporting proceedings of the Council of the Royal College of Surgeons of England on Feb. 7th; and (2) the Mayor of Douglas, inviting the College to send representatives to the Congress of the Royal Institute of Public Health to be held in that town from June 29th to July 5th next.—It was directed that the letter should lie on the table.

Dr. JOHN SHAW wrote resigning his Membership and returning his diploma.—The resignation was accepted.

The REGISTRAR moved, and the SENIOR CENSOR seconded, the enactment of the following temporary by-law:—

That the Licences of the College withdrawn from Mr. Hugh Stanley Revell on Jan. 26th, 1905, under the provisions of By-law cxxxviii., be restored to him, any by-law to the contrary notwithstanding.

This was agreed to, and the PRESIDENT then dissolved the Comitia.

THE REARING OF CHILDREN.

A LECTURE on the rearing of children was delivered by Dr. George Carpenter at the Institute of Hygiene on Feb. 20th. He commenced by remarking that for a child to have a good start in life he should come of healthy parents, free from any taint of alcoholism or of the many diseases that tend to enfeeble the constitution of the offspring. Such fortunate antecedents were seldom attained in actual practice, but in ordinary circumstances much could be effected by carefully safeguarding maternal health during pregnancy.

In regard to the feeding of infants Dr. Carpenter laid stress on the point that proprietary foods should be altogether avoided and that natural feeding whenever possible should be followed in the earlier stages of life. In those cases in which breast feeding was not available, cows' milk diluted with water should be used and in the second year of life undiluted cows' milk would generally be digested well. Dr. Carpenter made a digression to inveigh in strong terms against the unsatisfactory state of the milk-supply and the inadequacy of the powers possessed by local authorities for dealing with unscrupulous dairymen. He pointed out how difficult it was to arouse the public to a sense of the abuses that prevailed in connexion with the supply of milk. Dirt was responsible for the sacrifice of untold numbers of infant lives, while the health and physique of innumerable other children were seriously undermined not only by dirt in milk but by the wholesale supply of tuberculous milk.

After the second year of life it was advisable to feed children on a varied diet, and the lecturer laid down rules as to the nature of food, the quantity to be taken at a meal, and the times of feeding. Maize porridge was recommended and porridge made from oatmeal, which was richer in proteids than either wheat or barley and greatly to be preferred to any of the prepared "oat foods." He was also in favour of giving fruit and fruit juice at an early age, together with milk puddings, but the fruit must be well cooked and free from fibre, skins, and pips. When children were thirsty water should be given invariably and not milk, which should only be given at meals. The water should be properly filtered and if this were not possible it should be boiled. Drinking between meals should be permitted, but the hours of feeding should always be at the same stated times and the stomach should never be overloaded. A child should not be allowed to be capricious in the matter of food but should be trained to eat any wholesome article of diet. If he did not do so there was certain to be some fault on the part of the nurse or parent. As the infant increased in age the diet should become more generous and varied. At the age of two years meat and fish well minced or pounded might be given for dinner and when meat was well digested the mincing might be omitted. Children should be strictly superintended at their meals and they should not be encouraged in any fanciful habits as regards their food. Dr. Carpenter said that bread containing currants, which was much used nowadays, ought not to be given to children as currants were exceedingly indigestible. Simple sweets in moderate quantities were in no respects harmful, but when children were continually eating sweetstuff the natural inference was that their parents were incapable and foolish.

In order to bring up children properly not only wholesome food but plenty of fresh air was necessary. Dr. Carpenter entered into details regarding the position, size, ventilation, and construction of nurseries, and emphasised the points that no gas-stoves should be employed in such apartments, and that the windows should be sufficiently large to admit plenty of sunlight. The question of clothing was dealt with at some length and it was stated that the day nursery should be kept at a temperature between 60° and 65° F. and the night nursery at about 55° F. Dr. Carpenter insisted upon the necessity of children taking exercise and of walking daily out of doors whatever the weather might be. It was pointed out that healthy games were of great value to children for developing the chest, "improving the wind," and making the muscles hard and elastic. Lastly, he commented upon the effect of bathing, clothing, and education upon the health of children and said that many of life's failures were not so much due to heredity as to environment and the neglect of parents and others to do their duty by them when young. On the other hand, many of life's successes were fashioned in the nursery. The importance of early training, therefore, could hardly be over-estimated.

children vaccinated during panic, and at the time when the Government will probably have an insufficient supply of efficient lymph in store. Vaccine lymph does not, as some people may imagine, retain its potency for ever. The President of the Local Government Board has evinced great interest in the subject of infantile mortality and he is now invited to take a step which would have the effect of rendering a large proportion of infants highly susceptible to small-pox. As practically the Minister of Public Health, what will his action be? Those who have urged modification of the existing system are doubtless anxious to see all forms both of compulsion and persuasion swept away. Doubtless whatever Mr. BURNS proposes will, at least in principle, be accepted. Will he select what may appear to be the line of least resistance by striking off from the statute book every trace of compulsion—will he sever the leash which holds back small-pox from the infant population? Such a course would please a small section of the public and would insure the support of certain Members of Parliament holding peculiar views. On the other hand, it is no exaggeration to say that it would literally astound the civilised world which is now tending to follow to its logical conclusion JENNER'S discovery and adopting not only compulsory vaccination but also revaccination. Such a step would be regarded as another of the signs of degeneracy with which the scientific and logical German is wont to associate this country. We shall ourselves be much surprised if Mr. BURNS, in response to sectional clamour, yields thus far. His action, or perhaps inaction, up to the present time we have rather attributed to a desire above everything not to encourage the unfit. We may be wrong but we shall retain our opinion for the present.

In the meantime, suggestions are doubtless reaching the central health office from many quarters and amongst them there has, we believe, been a letter from the National Vaccination Officers' Association urging that certificates of exemption should be issued by these officers who are in effect the local administrators of the Vaccination Acts. These officers suggest that they shall hand the certificate to the parent and retain a copy themselves, entering the name and details in their registers and receiving a registration fee therefor. There is something to be said for the proposal. But if it were carried into effect certain conditions must be attached to it unless, as is possible, it is desired to reduce the whole affair to a farce. If the State believes primary vaccination to be of value as a preventive measure against small-pox during childhood it is surely logical and consistent that it should take some trouble to make its advantages appreciated. If, on the other hand, Mr. BURNS does not, after having studied the evidence for and against the subject, believe that it is of any practical value as a preventive measure, let him sweep the whole organisation connected with it away or turn it to other uses. If he elects to do this he must take such consequences as may eventually accrue. If, on the other hand, he is of opinion that vaccination properly performed protects the infants against small-pox he is morally bound, as the head of the central health department, to diffuse this knowledge. He is not entitled by the responsible position which he occupies to sit on the fence in connexion with a

public health question of this magnitude. Assuming, therefore, that he will seek the advice of scientific men and will follow it, he will, we imagine, arrange that if the duty of issuing certificates of exemption is to be left to the vaccination officer, such officers shall have a greater inducement to procure vaccination than to produce an exemption certificate, that in all cases a fair statement of the value of vaccination shall be presented to the parent and that whoever issues the certificate of exemption shall be furnished with some declaration which shall be read aloud to the applicant before being signed by him. Such declaration, which in our opinion should only be issued by a magistrate, should bring before the parent the seriousness of the step which is being taken and the risks to life which an attack of small-pox would involve to the child in question. If the State elects to provide gratuitous vaccination, it should also through its registrars issue to the parents some simple leaflets setting forth the reasons why the State affords such facilities.

Conversely, if the State, notwithstanding the testimony of science and of Royal Commissions which it has itself appointed, regards vaccination as useless and dangerous, let it diffuse information through its registrars in this sense. Such a step would furnish but another illustration of the fact that science has no active part or parcel in actual administration and that until this condition of affairs is altered and the Local Government Board is reconstituted on an expert basis the public will continue to be debarred from many of the blessings which the researches of science afford. In the event of this latter course being adopted it will be instructive to note whether the country which gave birth to JENNER and set the example of compulsory vaccination to the world will be followed in its degeneracy by a country such as Germany which, by compulsory vaccination and revaccination, has practically banished small-pox and small-pox hospitals from its midst.

Annotations.

"Ne quid nimirum."

LEGISLATION IN REGARD TO BUTTER.

THE Butter and Margarine Bill presented by Sir Edward Strachey, which was ordered by the House of Commons to be printed on Feb. 14th, is intended "to make further provision with respect to the manufacture, importation, and sale of butter and margarine and similar substances." The Bill is calculated to deal the death-blow to the sale of watered butter under the ingenious name of milk-blended butter. It provides for the registration of butter factories in which by way of trade butter is blended, re-worked, or subjected to any other treatment but not so as to cease to be butter. Any premises are similarly to be registered in which there is manufactured any butter substitute (that is to say, any mixture other than margarine, produced by mixing or blending butter with milk, cream, or any substance other than butter) or any imitation butter (that is to say, any article of food which resembles butter, but which is not margarine or a butter substitute) or on which there is carried on the business of a wholesale dealer in butter substitutes or imitation butters. Consignments also of butter substitutes are to be registered

has brought it home to the medical profession that our system of medical education requires considerable reform. We ask too much of the medical student; we do not give him the time in which he can fulfil our demands; we run a risk of killing in him the desire to know anything from first-hand experience or to find out anything for himself; we effect these things by filling him with elaborate and temporary information to assist him in his examinations. These things are beyond controversy, so that Dr SHAW'S earnest words are certain of a sympathetic hearing.

Epidemic Cerebro-Spinal Meningitis: Dr. M. H. Gordon's Memorandum to the Local Government Board.

A REPORT on the micrococcus of epidemic cerebro-spinal meningitis and its identification, presented by Dr. M. H. GORDON to the Local Government Board and recently published, contains a most exhaustive account of the organism and of its relation to the disease. Recent observations on the outbreak of the disease in New York and in Germany have uniformly confirmed the brilliant researches of WEICHSELBAUM made so long ago as 1887, and Dr. GORDON states that at the present time it is generally admitted that the diplococcus intracellularis, or, as it is sometimes called, the meningococcus, is certainly the chief and apparently the sole bacteriological factor in epidemic cerebro-spinal meningitis. The characters of the meningococcus as given in the report are as follows. It is an obligatory aerobic organism failing to grow under anaerobic conditions. In primary cultures it grows best upon agar smeared with blood or upon agar containing ascitic fluid. Dr. GORDON recommends a medium originally devised by WASSERMANN for the gonococcus called nutrose ascitic agar, and he states that the appearance of the colonies of the meningococcus upon this medium affords a means of distinguishing them from those of Gram-positive cocci and even from those of some Gram-negative cocci. They form after 24 hours' growth at 37° C. smooth, moist, grey, translucent circular or oval discs with regular outline. The meningococcus grows in milk but does not produce clotting or any alteration in reaction. It also grows feebly on potato. In order to keep up a stock culture on solid media subculture every two days is necessary. Microscopical examination of preparations of cultures shows that the organism occurs as single cocci, as diplococci in small groups, and occasionally in tetrads. A most important fact in regard to its staining reactions is that it invariably gives a negative result with Gram's stain; another character of great value in differentiating it is that it will not grow at a temperature below 25° C. Observations upon animals, notably those of VON LINGELSHEIM in the recent outbreak in Germany, who observed definite meningitis in monkeys after intraspinal injection of the meningococcus, have definitely established the etiological relationship of this organism to the disease. In regard to the manner of its action no soluble toxin has been found in culture media upon which the meningococcus has been grown, wherefore it would appear that its toxin is

contained within the coccus itself and is therefore an toxin. An agglutinating effect of the serum of patients suffering from the disease upon the organism has been observed and VON LINGELSHEIM in the recent outbreak observed it in 207 cases out of 644 examined. Attempts have been made to utilise this agglutination reaction for the identification of the meningococcus but Dr. GORDON is of opinion that its value for this purpose is small. A further reaction of value in differentiating the organism from other cocci is a fermentation method devised by GORDON; their action upon media containing various sugars, such as glucose, galactose, maltose, and saccharose is studied. The distribution of the organism within the body in cases of the disease and its detection in these various sites are considered in some detail in the report. Lumbar puncture affords the readiest method of obtaining the organism, and its recognition in cultures from the cerebro-spinal fluid is usually easy, since when present it is, as a rule, in pure culture. It can also be obtained from the blood in some cases, and here, again, usually in pure culture. It has been obtained in ten instances out of 41 cases of epidemic cerebro-spinal meningitis examined. A great deal of attention has been devoted to the detection of the organism in the upper respiratory passages, but there the matter presents much greater difficulty owing to the occurrence in the same situation of other cocci showing a negative reaction to Gram's stain, so that according to Dr. GORDON many of the statements made in this connexion are untrustworthy on account of this fact having been overlooked. One of the most important of these organisms likely to be confounded with the meningococcus in cultures made from the upper respiratory passages is the micrococcus catarrhalis, but others are known to exist even in normal saliva. The chief methods recommended for the differentiation of the meningococcus from these other organisms are the characters of its growth on nutrose ascitic agar, its inability to grow on media below 25° C., and its action upon the various carbohydrates. Dr. GORDON'S report is most interesting and affords a very valuable contribution to our knowledge of the organism, while its appearance at the present time is most opportune since it will be of use to those concerned in investigating any cases that may arise.

The Conscientious Objector and the Certificate of Exemption from Vaccination.

THE recent debate in the House of Commons and the undertakings given by Mr. BURNS render it clear that we may shortly expect some modification in the existing procedure for securing certificates of exemption. Although we have for some considerable time held the view that the methods adopted by some magistrates towards those applying for certificates are vexatious and likely to foster opposition, there can, on the other hand, be no question that the wholesale granting of certificates without any regard whatever to the circumstances of each case would be a step the consequences of which we do not fully realise until the advent of smallpox and the rush of the antivaccinationists to have them

stomoxys are recognised to be carriers of a trypanosome disease of horses known in South America as *mal de cadenas*, and inquiries made at the instance of Lieutenant-Colonel Bannerman showed that a species of stomoxys was prevalent in Assam and Bombay. As above mentioned, this insect did not appear to be a carrier of surra. The conveyance of trypanosomiasis becomes an important subject in view of the possible introduction of sleeping sickness into India. The collection of snake venom was continued throughout the year, the dried venom being sent to Kasauli for the manufacture of antivenene. The laboratory snake-man was unfortunately bitten on the left forefinger by a Russell's viper, but was immediately treated by Major G. Lamb, I.M.S., with appropriate antivenene which he had himself made at Kasauli. The result was very gratifying, for the man did not develop any constitutional symptoms of poisoning, although the finger became gangrenous and had to be amputated.

EXPLOSIONS IN SEWERS.

ATTENTION is called by the London County Council to a highly dangerous practice of which motor men appear to be sometimes guilty—namely, that of allowing inflammable naphtha or petrol to escape down the drains. The County Council has issued a timely warning on this subject to persons concerned in the use of petrol. It is pointed out that on several occasions recently explosions have occurred in sewers in which men were working and that life has been lost thereby. The explosions have been traced to the presence of highly inflammable gas in the sewer given off by light petroleum. Under Section 10 of the London County Council (General Powers) Act, 1894, there is an order prohibiting the disposal of inflammable petroleum products in this way, and any offence committed is punishable by a fine not exceeding £20, with an additional fine not exceeding £5 for every day on which the offence continues. In our opinion the fine should be very much heavier considering how very serious the results of such reckless conduct may be. Apart from the danger to life involved, an explosion may rupture the sewer and along its course the result may be a serious pollution of the subsoil.

SUICIDE IN ITALY.

"FOLLOWING up the comments in THE LANCET¹ on 'Suicide and its Methods,'" writes an Italian contributor, "I may now supplement them by the last statistical returns issued on the subject by the Direzione Generale della Statistica. These returns deal with the year 1904 and are full of interest as painful as it is dramatic. Self-murder, it appears, was on the increase in Italy from 1887 to 1893, after which period a slight diminution was noted up to 1903. The cases of suicide in 1887 were 1449, those in 1893 were 2059, while those in 1903 were 1922. But in 1904 the cases amounted to 2166! Of this appalling total, Lombardy contributes the largest number, 337. Next comes Piedmont with 297, the Emilia with 236, Venetia with 224, Tuscany with 210, Sicily with 163, Latium with 132, Liguria with 116, and Campania with 110. In the other provinces of Italy the number of suicides were, in each instance, below 100—the lowest number being in the Basilicata, 19. Classified according to sex, of the 2166 individuals who put themselves to death in 1904 the males numbered 1705 and the females 451. As to the 'stato civile' (condition as citizens), 963 of the suicides were bachelors or spinsters, 893 were married, 250 were in the widowed state, and 55 were of unknown civil condition. The great majority of the suicides occurred between the ages of 20 and 39 years. Between those periods of life the cases

were 877; 700 made away with themselves between the ages of 40 and 50; 380 between 60 and 79; 150 between 15 and 19; 28 at ages above 80; and 12 under ten years old. Touching the means of self-murder employed, that by firearms was the most frequent, numbering 522 cases; drowning was the means in 433 cases; hanging in 388; precipitation from a height in 213; poison in 188; asphyxia in 99; cutting instruments in 68; and crushing under vehicles in 61. As to the mental state of the suicides 'delirio per psicopatia' (frenzy due to psychical causes) figures largely, two under that head being ascribed to alcoholism, ten to the mania consequent on pellagra, and seven to neurasthenia. Of the four seasons the spring was the most prolific in suicide, numbering 640 cases; summer follows with 610, winter with 463, and autumn with 443. The months of April, May, June, and July witnessed the largest number of suicides; October, November, and December the smallest. Classified according to occupation in life the most numerous were those of the agricultural, pastoral, or artisan class, 452. Next, but at a long interval, come the well-to-do (capitalists and such like), numbering 86; and officers (combatant in either service), 77. Of the liberal professions those of the Church and medicine figure least, there being seven among the former and nine among the latter."

NEW VIEWS ON PATHOGENIC MYCOLOGY.

Dr. P. I. Koubassoff (a Russian physician) has set himself the formidable task of disproving the fundamental conceptions of modern mycology and epidemiology.¹ From his observations on malarial and typhoid fever made during a 12 years' stay in Turkestan he concludes that "the life cycle of the pathogenic microbes evolves through the following stages: a growth of the nature of a mycelium sprouts from a hibernating spore, as a bush (*buisson*) from its seed and its diverse constituents (*parties*) develop gradually into a monosporium, a penicillium, an aspergillus, ascospores, bacteriogenic spores, and facultative spores that turn again into hibernating spores, thus resuming the life cycle. The spores, more particularly the hibernating modification, are the real carriers of infection; the microbes, thought specific hitherto, as, e.g., bac. typh. Eberth, are mere 'promycelia.' They are too little resistant to form a pathogenic factor of any degree of importance. Their presence in the blood is possible only after the resistance of the organism has broken down." There is, unfortunately, in the array of observations practically nothing to support these statements. The animal experiments with the microbe of paludism (malaria) and the "microbe of typhoid fever" are little convincing and nothing is done to prove evolution of one of the forms into another by way of culture. Dr. Koubassoff states that he has succeeded in isolating most of the forms described by him from the blood of patients by diluting the blood drawn during the different stages of malaria, typhoid fever, and even pneumonia, with physiological saline solution, and growing them on the following media: Medium I.: To a kilogramme of broth: glycerine, 60.0; peptone, 12.0; ferratin (an iron albuminate), 1.2; glucose, 4.0; and sodium chloride, 4.0. From 7 to 10 per cent. of gelatin is added for a gelatin medium, and for agar from 2 to 3 per cent. of gelatin and 1 per cent. of agar-agar. Medium II.: An entire egg beaten up with a tablespoonful of glycerine and one glass of skimmed milk. On sterilisation this forms a very soft semi-solid medium. The forms thus obtained are identical with forms which were isolated from the green film

¹ THE LANCET, August 4th, 1906, p. 311.

¹ Du Microbe de la Fièvre Typhoïde (Heo-typhus) et de la Théorie Ternaire de Pettenkofer. Des Microbes du Paludisme: Recherches Microbiologiques, Épidémiologiques, et Cliniques. Print by I. N. Kouchneroff, Moscow, 1906. Des Champignons du Paludisme, 1905. Ueber die Pilze des Paludismus, A. Hirschwald, Berlin, 1905.

in the same way as are consignments of margarine in accordance with the provisions of Section 7 of the Sale of Food and Drugs Act, 1899. Any officer of the Board of Agriculture and Fisheries is to have power to enter at all reasonable times premises so registered, and an officer of a local authority who is authorised to procure samples under the Sale of Food and Drugs Acts may have similar powers. When the Board of Agriculture and Fisheries has reason to believe that any of the processes of blending, and so on, are carried on in unregistered premises it may appoint an officer and authorise him to inspect such premises. It is thus proposed to repeal Subsection (2) of Section 7 of the Sale of Food and Drugs Act, 1899. If any substance intended to be used for the adulteration of butter is found in any butter factory the occupier of the factory will be deemed guilty of an offence under this Act and if any oil or fat capable of being so used is found it shall be deemed to be intended to be so used, unless the contrary is proved. This provision is obviously meant to avoid the difficulty which the use of certain oils in butter has created in regard to their detection by chemical analysis. It will be an offence under the Act to store butter or margarine containing more than 16 per cent. of water, or to consign from a factory such butter or margarine unless the occupier or consignor proves that the butter or margarine was not made, blended, or re-worked, or treated in the factory. The sale of any butter substitute containing more than 24 per cent. of water will constitute an offence; and in the list of articles the importation of which is an offence under the Sale of Food and Drugs Act, 1899, butter or margarine containing more than 16 per cent. of water, butter substitutes containing more than 24 per cent. of water, or any imitation butter, except in packages conspicuously marked "butter substitute" or "imitation butter," will be included. Regulations are proposed in regard to the proportion of curd in butter. The fines are commensurate with the offences. Thus for a first offence the fine proposed is £20, for a second offence £50, and for any subsequent offence £100, while imprisonment may be inflicted under Section 17 of the Sale of Food and Drugs Act, 1899, in which such punishment is authorised. We have long pleaded for the more effective control by the State over the sale of butter substitutes. Under the name of milk-blended butter the public have been purchasing for a long time, unwittingly it may be, butter containing a very large proportion of water, and water at 1s. a pound is a somewhat expensive commodity. Again, under the name of butter, substances have been sold mixed largely with foreign oils the chemical characteristics of which are hardly distinguishable by analysis from those of genuine butter fat, and thus the analyst has been rendered helpless to bring fraud to light. We trust, as it is proposed, that this Act will come into operation on the first day of January, 1908, with but little alteration in the principles which it seeks to apply in the interests of the public. We should indeed like to see its provisions put into practice at an even earlier date.

THE SOUTH AFRICAN EXHIBITION.

ON Feb. 22nd there was a private view of the South African Exhibition which is now being held in the Royal Horticultural Hall, Vincent-square, Westminster, and which was formally opened by Their Majesties the King and Queen on Feb. 23rd. A luncheon was given to the invited guests on Feb. 22nd under the chairmanship of Sir Lewis Michell of Rhodesia, at which speeches dealing with the trade prospects of South Africa were made by, among others, the chairman and Mr. O. du P. Ohlappin, the Trade Commissioner for Cape Colony. The four colonies, Cape Colony, Natal, Transvaal and Orange River, and Rhodesia, which make up the British

possessions in South Africa, were all well represented at the exhibition, and as this is the first occasion on which the inhabitants of England have had the opportunity to view specimens of the produce and mineral resources of South Africa gathered together in an orderly manner the result should be widely instructive. Much of what is shown has no concern with a medical journal, but the collections of fruit, vegetables, wheat, barley, and arrowroot promise a great agricultural future for the British South African possessions. If they should be capable, as they are stated to be, of supplying this country with such products of excellent quality and in practically unlimited quantities, the comparative failure, as yet, of the mines will tend to become a matter of secondary importance. At the present time, owing to war and other causes, South Africa has not been able to develop her natural resources as a food-producing country. Now that an era of peace seems to have set in the people of these colonies will have the chance to devote their energies to the cultivation and improvement of the land. This means a good deal, for while there can be little doubt that farmers will find a ready market for much of their produce in this country, they will also be able to feed the resident population at reasonable prices and so to render life in South Africa much cheaper and more attractive.

THE PLAGUE RESEARCH LABORATORY IN BOMBAY.

THE report of the Plague Research Laboratory at Parel, Bombay, for the year ending March 31st, 1906, is an official publication of 30 pages, containing also five full-page plates representing laboratory apparatus. Great part of it is devoted to the subject of Haffkine's plague prophylactic; there are also shorter references to surra, Malta fever, and snake venom. In the introductory part of his report Lieutenant-Colonel W. B. Bannerman, I.M.S., the director of the laboratory, states that from April 1st, 1905, to March 31st, 1906, the number of doses of Haffkine's anti-plague vaccine sent out from the laboratory was 316,639, as against 129,507 for the preceding twelvemonth. Of this total quantity, 219,000 doses were supplied to British India, 50,000 to Native Indian States, and 36,000 to East Africa. The first inoculation with this prophylactic vaccine was performed on Mr. Haffkine himself on Jan. 10th, 1897, and from that time to the end of April, 1906, there have been 6,202,371 doses issued from the laboratory. A full account of the method of bottling the prophylactic, together with illustrations of the apparatus, is given in one of the appendices. All inoculators are now instructed to sterilise their syringes and needles by the hot-oil method before commencing operations, and to re-sterilise the needle between each inoculation so as to obviate any possible chance of contamination. A cheap and portable apparatus which can be used for this purpose in the open air has been introduced and has received the name of "Kapidia's lamp," as Senior Assistant Surgeon R. J. Kapadia worked out the details. A great deal of evidence has been supplied by officers of the Indian Medical Service, medical missionaries, and others showing that there was no impairment of the health of inoculated persons and that the vaccine had a marked prophylactic effect, imparting a high degree of immunity against plague for at least eight or nine months. An outbreak of surra among horses of the mounted police afforded an opportunity of studying this animal disease caused by a trypanosome. The infection was easily kept going through monkeys and guinea-pigs by subcutaneous inoculation, but attempts to do this by means of biting flies of the families tabanus and stomoxys have hitherto failed. Guinea-pigs injected with infected blood lived from 50 to 100 days; monkeys infected with guinea-pigs' blood lived on an average 39.1 days. Flies of the genus

a combination of theobromine-soda with sodium salicylate; barutin, prepared from theobromine, baryta, and sodium salicylate; theophorin, composed of theobromine-soda and formic acid; theobromose, a combination of theobromine and lithium; urocitral, prepared from theobromine-soda and sodium citrate; and uropherin, a compound of theobromine and lithium, with lithium benzoate or salicylate. The following table gives the doses of some of these compounds and their theobromine content.

	Dose.	Percentage of theobromine.
Agurin... ..	15 grains three times a day.	55.1
Barutin	3 to 8 grains frequently.	25.5
Diuretin	7 to 15 " "	59.7
Theophorin	15 grains three times a day.	62.5
Urocitral	7 to 15 grains three times a day.	52.2

Theophorin is the newest of these compounds; experiments on animals have shown that it combines the diuretic properties of theobromine with the tonic properties of sodium formate.

THE DUTTON MEMORIAL.

THE late Dr. Joseph Everett Dutton died, as our readers will remember, at Kasongo, on the Congo, aged 29 years, on Feb. 27th, 1905, from tick fever. Together with his colleague, Dr. J. L. Todd, he contracted the disease while engaged in its study. Both had apparently recovered by Feb. 9th, but Dr. Dutton had a relapse which proved fatal. He had done much excellent work in Africa, and in 1901 had identified the trypanosoma Gambiense, afterwards recognised as the cause of sleeping sickness. It is now proposed to endow a Research Professorship in Tropical Medicine at the Liverpool School of Tropical Medicine as a memorial of Dr. Dutton's life and work. The professorship is to be made a permanency and the income necessary for its maintenance will be supplied by the interest on trust funds. For this object a sum of £10,000 is required. Subscriptions may be sent to Mr. A. H. Milne, Honorary Secretary, Liverpool School of Tropical Medicine, Liverpool. The object is a worthy one and there is no need for us to insist upon the benefits which research into tropical medicine may bring forth. The results already obtained in the cases of malaria and yellow fever are sufficient answer to those who think that money spent on research is wasted.

THE HARVEST OF THE SEA.

FROM the *Fish Trades Gazette* we gather that some discord has arisen amongst the organisations concerned in fishery research over the question of the allotment of Treasury money in aid of this scientific work. It is alleged that the Marine Biological Association of Plymouth has so far alone enjoyed this financial aid which amounts to a considerable sum, and the trade submit that this association is a purely scientific body which is not in touch with either the trade or the various bodies concerned with fishery legislation and administration. A week or so ago a deputation from the Lancashire and Western Sea Fishery Committee (whose excellent work was referred to in a leading article in THE LANCET of Feb. 2nd) waited upon the Chancellor of the Exchequer at the House of Commons with a view of soliciting assistance from the Treasury in aid of its scientific work. It appears that the Lancashire organisation has supported its own researches out of the local rates, and at the same time the members have contributed to the cost of researches on the East and South Coasts by means of taxes. It was now thought that any Treasury grant should not be possible body but directly to the central

fishery authority—viz., the Board of Agriculture and Fisheries. In a conciliatory reply Mr. Asquith said that he had come very definitely to the conclusion that the time had arrived for a thorough investigation of the whole question by an independent and a competent authority. Whatever financial arrangements were made during the present year would be of a strictly provisional kind and it was his intention to bring together as soon as possible by means of an inquiry all the various sources of information which were available in order to see if some definite scheme could not be arranged to coördinate local and general effort on this most important economic question. We can hardly think that the members of the trade are foolish enough to underrate the value of scientific work, but, of course, on the great questions at issue it is important that practical results should sooner or later be forthcoming. It is to be hoped that all sides will agree on this matter and heartily coöperate in the great work in hand, the consummation of which is to bring good to all concerned. We have no doubt that the Chancellor of the Exchequer will not be long in arriving at an equitable scheme by which research will be encouraged and supported in a broad direction.

INFANT LIFE PROTECTION.

A BILL to amend the Infant Life Protection Act of 1897 has been introduced into the House of Commons by Mr. Staveley Hill, supported by, amongst others, Sir John Kenna-way and Mr. Ramsay Macdonald. The Act of 1897 dealt with nurse children under five years of age only in cases where more than one was taken by the baby farmer, or in the case of a child under two years of age only where a sum of money not exceeding £20 was paid down. Furthermore, the local authority could only remove the child from the baby farmer's premises if the said child's health were endangered either by reason of the house being insanitary or the person who had the child in his or her care being ignorant or negligent. The object of the new Bill is, amongst others, to extend the provisions of the Act to cases where only one child is taken in to be nursed or maintained and to any child received in consideration of a sum of money paid down, whatever the amount may be; to raise to seven years the age limit of children within the Act; to enable the local authority to remove an infant kept by a person who is unfit by reason of character or otherwise to have his or her care and maintenance, or who is in a house or premises unsuitable for the purpose, although such person or premises are not so unfit as to endanger the child's health; and to require notice to be given of all changes of residence of a person having the care or custody of children within the Act under penalty of imprisonment or fine. We are quite in sympathy with the objects of this Bill, especially in so far as it applies to cases where only one child is taken or to cases in which any sum of money is paid down. With regard to the question of the local authority removing children from unsuitable houses this in many instances will be a much needed reform but we do not envy the local authority its task of deciding whether or not a house or person is unsuitable from a moral point of view.

A MEDICAL INFORMATION OFFICE IN BERLIN.

FOR some years an office at which medical information as to hospitals, lectures, and other subjects of interest to medical men can be obtained has been at work in Paris, and a full description of it appeared in THE LANCET of Jan. 17th, 1903, p. 207. We now learn that a somewhat similar institution is about to be opened in Berlin at the Kaiserin Friedrich-Haus (Luisenplatz 2-4). The aim of the institution is to assist foreign physicians who go to Berlin to study. Information is to be given regarding all lectures,

in stagnant waters, cesspools, marshes, and so on. In their present state the publications add nothing to that part of science which they are meant to revolutionise, in spite of the numerous excellent microphotographs.

THE DEATH OF HENRI MOISSAN.

DEATH would appear to be ruthlessly active in the ranks of chemical science. Curie, Mendeléeff, and Menshutkin have been taken away comparatively recently, and now the scientific world is the poorer for the loss of M. Henri Moissan, the first to isolate fluorine in the free state and the first also to produce artificial diamonds on any scale. M. Moissan was 54 years of age and he died on Feb. 20th after having undergone an operation for appendicitis. It was in 1886 that M. Moissan succeeded in isolating fluorine by the electrolysis of fluoride in a platinum tube closed with stoppers of fluor spar. Fluorine proved to be a pale green gas which has a powerful action on almost all known substances. In 1906 M. Moissan was awarded the Nobel prize in acknowledgment of the remarkable results which he obtained in his high-temperature experiments, using for the purpose the intense heat of the electric arc. These experiments led the way to the commercial production of calcium carbide (and thus indirectly of the marvellous illuminating gas acetylene), aluminium, and metallic calcium. The temperature reached was oftentimes near to 7000° F. M. Moissan by means of this intense heat fused iron together with carbon and then suddenly cooled the mass. The effect produced enormous pressure within, the outer part solidifying, and on fracturing the solid material it was found that part of the carbon had crystallised into diamonds. They were microscopic in size but still they were undoubtedly diamonds. Similar crystals are occasionally found in the steel and slag produced in the furnaces of iron foundries. M. Moissan was a most indefatigable worker in the field of chemical research, a fact which gained for chemistry some new and valuable results and his death at a comparatively early age will very generally be regretted.

ANKYLOSTOMIASIS IN BELGIUM.

Consul-General Sir Cecil Hertslet has issued a most interesting report¹ upon ankylostomiasis and the means taken to combat this disease in Belgium. The report opens with a brief account of the nature of the disease and of the manner of its spread and then goes on to detail the steps which the Belgian Government took to combat the evil. About three years ago a commission was appointed which reported that in the Liège district alone some 25 per cent. of the miners were infected. In November, 1904, a Royal decree promulgated certain rules for the district of Liège. The mines were divided into two classes, those infected and those not infected or at least which were considered to be only lightly infected and which should be able to furnish a clean bill of health within six months from the passing of the decree. In this latter class notification of any case of ankylostomiasis was required. With regard to the former class proper closet accommodation of at least one closet for every 25 workers had to be provided at the pit's mouth and buckets with watertight linings and tight-fitting covers had to be provided for below ground. Stringent rules were drawn up for the keeping of both closets and buckets clean. All miners undergo a clinical and bacteriological examination. If found infected they are not to work. While off work, however, they are paid a sum amounting to about 17s. per week, which is provided partly by the provincial authorities and partly by the mine-owners. Cards containing simple rules of hygiene were issued to

miners, but these rules, says Sir Cecil Hertslet, though good in theory, were in practice found to be somewhat impracticable. Other cards were issued to mine-owners. As regards treatment, the drugs chiefly used were male fern, salicylic acid, and eucalyptus with castor oil. Of these three mixtures that containing eucalyptus seems most popular and quite as efficacious as the others. As a result of these measures the following figures show very well the progress made in the fight against the disease. In 1902 in 16 mines in the province of Liège the percentage of miners affected was 29·5; in 1904 it was only 12·25. By the beginning of this year five of the mines were reported as free from the disease. Although the law was at first made applicable to the province of Liège only it has now been applied to the province of Hainaut also.

HALTING PLACES FOR THE MOTOR OMNIBUS.

SOME years ago we suggested in these columns that many accidents in the street might be avoided if the omnibuses had definite stopping places along the route, besides which the labour and strain of pulling up and re-starting the horses would be minimised. Out of kindness and consideration for the horses not a few persons have sustained an unpleasant, if not serious, accident by refusing to have the omnibus "pulled up" when they wished to dismount; others have had no consideration at all and have consequently always alighted in safety. There is no reason why anybody should be exposed to the risk entailed by jumping on or off an omnibus while it is in motion. If there were definite calling places no such risk would be involved at all. If this is the case with the horse-drawn omnibus, how much more so is it with the motor omnibus. It is, in fact, only the absolutely sturdy person, sound in nerve, wind, and limb, who dares to jump on or off a motor omnibus while it is careering along. The pace of these vehicles renders it a highly dangerous proceeding for almost anyone to attempt to alight from them whilst in motion, and an attempt to jump on is just as likely to result in an accident. We are aware that there are places in the streets where by some unwritten law omnibuses are required to stop but as a rule these stations are too far apart and too irregular to be generally useful, and even then it is not everybody—and certainly it is not strangers in the metropolis—who know of their existence. As a matter of fact, these halting places do not exist for the convenience of the public as patrons of the omnibus, but merely so that the traffic at busy corners and crossings shall not be impeded by these vehicles stopping there. The system which we suggest is in vogue on most tramways and now that the motor omnibus is as fast as the electric tramcar it should be subjected, it seems to us, to the same regulations for the convenience and safety of the public.

THE THEOBROMINE CLASS OF DIURETICS.

Dr. F. Zernik, who has contributed largely to our knowledge of the composition of proprietary medicines, has published in the *Apotheker Zeitung*, 1906, p. 898, the results of his analysis of the various theobromine derivatives which have been placed before the profession as diuretics. Theobromine itself has been recommended as a diuretic; it is considered superior to caffeine owing to its relatively slight action on the central nervous system. Theobromine is only slightly soluble in water; it forms a soluble compound with sodium hydroxide, having so marked an alkaline reaction that it is not suitable for therapeutic use. Hence various attempts have been made to produce soluble compounds of theobromine suitable for administration. These include agurin, a compound of theobromine-soda and sodium acetate; diuretin,

¹ Report on the Precautions Taken to Combat Ankylostomiasis (Miners' Worm Disease) in Belgium. No. 656 Miscellaneous Series of Diplomatic and Consular Reports published by the Foreign Office.

to pepsin. Pepsin is completely destroyed by trypsin in alkaline solution and almost entirely so by 0.01 per cent. of sodium hydroxide. Diastase is rendered inactive in nine hours by 0.1 per cent. of sodium hydroxide, it is almost entirely destroyed by 0.009 per cent. of hydrochloric acid—i.e., in a solution containing one-twentieth the acidity of the gastric juice—and its activity is weakened by pepsin even in neutral solution. But diastase is not affected by trypsin, rennin is not destroyed by pepsin, and invertin is not injured by pepsin, trypsin, or diastase. These laboratory results will doubtless give such therapeutic monstrosities their quietus. There is no place in medicine for them. One of these preparations is said to contain "the five active agents of digestion, pepsin, 'veg.' (sic) ptyalin, pancreatin, lactic and hydrochloric acids," and it is stated to be "superior to all other remedies in dyspepsia and diseases arising from imperfect digestion." But on examination it was not possible to establish the presence of either the proteolytic or the amylolytic ferment. Another elixir—"the only true digestant, because it contains the enzymes of all the glands which are necessary for digestion"—was found to possess no enzyme activity whatever.

AN INTERNATIONAL CONGRESS ON PSYCHIATRY, NEUROLOGY, PSYCHOLOGY, AND THE NURSING OF LUNATICS.

A CONGRESS under this comprehensive title will be held at Amsterdam from Sept. 2nd to 7th, 1907. The congress is under the patronage of Queen Wilhelmina and Prince Hendrik of the Netherlands, and the honorary presidents are the Dutch Minister for Home Affairs, the Minister of Justice, the Commissary of the Queen in the province of North Holland, and the Burgomaster of Amsterdam. Dr. G. Jellgersma, professor of psychiatry and neurology at the University of Leyden, is the president, and Dr. W. P. Ruijsch, chief inspector of public health at the Hague, is the vice-president. There are a large "Propaganda Committee for the Netherlands" and a widely distributed "International Propaganda Committee." The congress will consist of four sections: (1) Psychiatry and Neurology (President, Dr. O. Winkler of Amsterdam); (2) Psychology and Psycho-physics (President, Dr. G. Heijmans of Groningen); (3) Nursing of Lunatics (President, Dr. W. P. Ruijsch of the Hague); and (4) Exhibition (President, Dr. J. van Deventer, senior, of Amsterdam). The congress will consist of general sessions and meetings of sections. In the general sessions chosen subjects will be dealt with by specially invited speakers. At the meetings of sections special questions will be discussed and criticism will be invited. Any one taking an interest in the subjects of the congress may become a member thereof. The languages employed will be English, French, and German. Members who will treat any suitable subject are requested to send a synopsis before May 1st to the secretary, who will see to the translation, printing, and distribution thereof. Those wishing to attend the congress are requested to sign a special card which will be sent by the secretary and to return it with their visiting card and cheque for 16s. 8d. to him. Tickets admitting ladies accompanying members may be obtained at 8s. 4d. each. A more detailed programme will be issued shortly. The general secretary is Dr. G. A. M. van Wayenburg, Prinsegracht, 717, Amsterdam.

EPIDEMIC DIARRHŒA IN GORTON.

Mr. A. W. Martin, the medical officer of health of the urban district of Gorton, in a special report to the Local Government Board on the prevalence of diarrhœa in that district during the summer and autumn months of 1906, states that from July 13th to Oct. 25th there were 75 registered deaths from diarrhœa, 38 being males and 37 females.

Of these deaths 54 were in children under 12 months of age and 67 out of the total 75 were under two years of age. Of the 54 deaths of children under one year of age 42 were bottle-fed. Four had been breast-fed, but when taken ill were having other food. Five were exclusively breast-fed and in three cases no information could be obtained. Of the 51 deaths concerning which information was obtainable, 35 mothers had attempted breast-feeding and 26 of these had failed, while only nine had been able to suckle their children for the full term. Of the total 75 deaths 60 occurred in houses supplied with privy middens and 15 in those supplied with water-closets, the rate per 1000 being 15 deaths per 1000 privies and 3.8 per 1000 water-closets. These figures show that two factors are principally concerned in the spread of the disease. The one, of course, is the privy midden system and the other the absence of breast feeding. Mr. Martin considers that "the present generation is witnessing an occurrence in the evolution of man probably never experienced by the human race previously, and that is a race of breastless women." That organs unused to atrophy is a canon of physiology, and it may be that the disinclination or inability of the modern woman to suckle her child, the inability being from social conditions, is leading to a real inability from atrophy of the mammary glands. To this cause may be due the enormous number of quack advertisements which disfigure the pages of popular magazines and which pretend to offer nostrums able to increase the size of the mammary glands. Whatever be the cause, the question of how children are to be breast-fed is one which demands the most serious attention of those concerned for the progress of the country, and although the matter is being taken in hand in many places a true solution of the problem seems as yet far distant.

THE Society of Tropical Medicine and Hygiene was formed on Jan. 4th of this year at a meeting held at the Colonial Office for the purpose of the study and discussion of diseases met with in tropical countries. The second meeting of the society will be held on Friday, March 15th, at 5.30 P.M., at the Royal College of Physicians of London, to consider the rules drawn up by a sub-committee for the constitution of the society and the regulation of its work. So much has been done in recent years to advance the knowledge of the diseases of warm climates that there must be ample food for discussion and study in this branch of medicine, and the meetings of the society should prove interesting not only to medical men with tropical experience but to every medical man engaged in the practice of medicine wherever his lot may be cast.

At a meeting of the Harveian Society of London on Thursday, March 7th, at 8.30 P.M., Mr. W. Watson Oheyne, F.R.S., will open a discussion on the Diagnosis and Treatment of Fractures in the Neighbourhood of a Joint, and will illustrate his remarks with skiagraphs. The following have promised to speak: Professor Howard Marsh, Mr. Edmund Owen, Mr. A. Pearce Gould, Mr. W. Arbuthnot Lane, Mr. Robert Jones (Liverpool), and Mr. J. Lynn Thomas (Cardiff). Members of the medical profession are invited to be present.

WE are informed that Dr. J. Kingston Fowler and Dr. J. Rose Bradford have consented to stand for re-election as representatives of the Faculty of Medicine upon the Senate of the University of London.

THE Department of Public Health of Queensland, in a bulletin dated Jan. 5th, states that for the week ending on that date one case of bubonic plague occurred. The patient was a male, aged 17 years. A further bulletin, dated Jan. 12th, states that no other case had occurred. As

both those to which admission is free and those for admission to which a fee is charged. Particulars can also be obtained as to hospitals and other medical institutions, and at what times and under what conditions they may be visited. Finally, information can be obtained as to lectures at the various clinics or medical societies and as to opportunities for watching operations in both clinics and hospitals. All information will be given free of charge. We are glad to be able to lay this information before our readers and we owe it to the courtesy of Professor Dr. Kutner, the director of the Kaiserin Friedrich-Haus, that we are able to do so. The new Information Office, however, is not the first of the kind in Berlin, for a similar one was opened in connexion with the University at the commencement of 1905 and a note upon it from our Berlin correspondent appeared in THE LANCET of Jan. 14th of that year. Such institutions as the Paris Bureau de Renseignements Médicaux, and that already existing and that about to be opened in Berlin, are essential to any medical man desirous of studying in a foreign town if he is not to waste a large portion of the time which he can afford to devote to study away from home, and such period is often very limited.

THE PERCENTAGE OF PHOSPHORUS IN VARIOUS FOODS.

M. Baland has published in the *Journal de Pharmacie et de Chimie* for January a series of determinations of the amount of phosphorus present in various foodstuffs. The determinations were made on the actual food and not on the ash obtained by their ignition. The percentages of phosphorus, expressed as phosphorus pentoxide (P_2O_5), are as follows: Wheat (except Australian wheat) and oats, 0.65 to 1.11; maize, millet, barley, and rice, up to 0.8; carrots, cabbages, turnips, and onions, 0.1; asparagus ends, cauliflower, lettuce, and leeks, 0.18; potatoes, 0.29; truffles, 0.5; peas, 0.6 to 1.0; haricot beans and lentils, to 1.35; beans, 1.45; cherries, currants, strawberries, oranges, pears, and grapes, to 0.1; dried figs, dates, and bananas, to 0.3; almonds and dried nuts, to 0.9; beef, veal, mutton, and fowl, to 0.45; fish, to 0.6; snails, oysters, and mussels, 0.26 to 0.35; cheese—Gruyère 1.81, Dutch 1.62, Camembert 1.1, average 0.68 to 1.81; roasted coffee, 0.4; cocoa, to 1.3; chocolate and milk (beverage), 0.62; hen's eggs, 0.26; white of egg, 0.015; butter, 0.13; and cod-liver oil, 0.05. M. Baland deplores the craze for fine white flour. Year by year in response to the demand of the consumer, machinery is perfected for producing still finer flour, containing, as a consequence, still less phosphorus and nitrogen.

HENRY VIII.'S BARBER.

THE origin of Saturday night tubbing seems to be lost in the mists of antiquity. According to Mr. Sidney Young, F.S.A., author of the "Annals of the Barber Surgeons," who on Feb. 23rd delivered a most erudite and amusing discourse at Barbers' Hall on the Relations Anciently Existing between Barbers and Surgeons, it was the custom of no less a person than King Henry VIII. to perform partial ablutions on occasional Saturday evenings. The "King's barber," one John Pen, Penn, or Penne, an ancestor of the famous Quaker of that name, was expected to be present at these august ceremonies, when the Defender of the Faith was pleased "to cleanse his head, legs, or feet." The regulation requiring the barber's attendance was a standing order, dating apparently from the reign of Edward IV. It is preserved in the "Liber Niger Domus Regis" (Harl. MS., 642), and its wording seems to imply that the solemn washings were partial and special rather than thorough, and that the king's

majesty often did without them. The royal barber, who was also a groom of the privy chamber and one of the 15 persons allowed to enter it, was also required to shave the king daily, "having in readiness his water, basons, knives, combs, scissours, and such other stuffe as to his roome doth appertaine for trimming and dressing of the king's head and beard." He was further required to "take a special regard to the pure and clean keeping of his own person and apparel, using himself always honestly in his conversation without resorting to the company of vile persons," and so on. Thus we have the beginnings of asepsis. When he was shaving the king a knight of the chamber or squire of the body, or both, were required to be present in order to prevent foul play. The portrait of Pen figures prominently in Holbein's famous picture of Henry VIII. delivering a charter to the barbers and surgeons on the occasion of their union in one body. The face is so fine in itself and so well painted that the great Sir Robert Peel was said to have offered the Barbers' Corporation £2000 if it would allow him to have it cut out and replaced by a copy. He is further reported to have said that he should like to sleep on the Barbers' dining table and to gaze on awakening at his favourite Pen. The table, as its form plainly shows, is an ancient dissecting table, whither were carried the corpses of malefactors handed over at Tyburn before 1745 to the barber-surgeons. There can be no doubt about the use to which the table was put, but, as Mr. Sidney Young informed his hearers, the anecdote touching Sir Robert Peel is pure myth.

EPIDEMIC CEREBRO-SPINAL FEVER.

THE epidemic of cerebro-spinal fever continues to make steady progress. Two cases have now occurred in London during the present week, one in Stepney and one in University College Hospital, the last-mentioned patient being a man, aged 28 years, who was admitted on Feb. 19th and died on the 25th. The source of his infection has not been traced and there are not as yet any signs of an extension of the disease from this centre. In Glasgow 14 fresh cases were notified and 17 deaths occurred on Feb. 24th, 25th, and 26th. Up to the present time there have been 248 cases in Glasgow with 142 deaths. In Belfast six cases were notified on Feb. 22nd and five deaths occurred on Feb. 25th and 26th; according to the latest returns there have been in all 118 cases with 71 deaths. In Dublin one fresh case was notified on Feb. 26th, making the eleventh in that city; there have been eight deaths, and three patients remain under treatment. In England fresh cases of the disease have been found in Leicester, Gravesend, Obelmsford, and Handsworth. In Scotland isolated cases have occurred in Borrowstounness, Kilsyth, Grangeopans, Loanhead, and Peebles. In Ireland there have also been isolated cases at Greencastle, Ballymoney, Newry, and Sheeptown.

THE WORTHLESSNESS OF LIQUID PREPARATIONS CONTAINING MORE THAN ONE DIGESTIVE FERMENT.

LIQUID preparations containing more than one digestive ferment—e.g., pancreatin (trypsin) and pepsin—have recently been put before the profession without regard to the fact that the ferments are mutually incompatible in solution. The worthlessness of such preparations has been proved by Dr. Torald Sollmann and emphasised in a special report of the Council on Pharmacy and Chemistry of the American Medical Association, which was published in the *Journal of the American Medical Association* of Feb. 2nd. Dr. Sollmann has found that trypsin is destroyed in six hours at 40°C. in a solution containing 0.56 per cent. of hydrochloric acid without pepsin, or 0.112 per cent. hydrochloric acid in addition

The first month past, the causes just specified become rapidly less fatal, but in their stead bronchitis, pneumonia, whooping-cough, and diarrhoeal disorders become conspicuous in the death roll. Bronchitis destroys the largest number of victims in the second month of life, whilst pneumonia is most destructive in the later months of the first year. Among common infectious diseases the most fatal in early infancy are whooping-cough and measles; the former disease shows almost uniformly high fatality from the second to the end of the twelfth month and then rapidly declines, whereas the latter disease attains its maximum fatality in the second year and thereafter becomes considerably less fatal.

(To be concluded.)

MEDICINE AND THE LAW.

The Action of the Police at Manchester in a Case of Attempted Suicide.

IN THE LANCET of Feb. 16th, p. 466, an account was given of the prosecution by the police at Manchester of a medical man and two others for an assault alleged to have been committed in resisting the police in the fulfilment of their duty. An elderly man had attempted to commit suicide by cutting his throat and the relatives had communicated with the police in addition to summoning medical assistance. The police were apparently under the impression that an attempt at suicide of this kind was a serious crime demanding summary arrest and the close custody and observation of the criminal, and having made up their mind that he must be removed to the Ancoats Hospital proceeded to carry out their resolution in spite of the protests of the relatives and in the teeth of a warning from Mr. S. Bagley, the medical practitioner who was already in attendance, that such a course would be attended with danger to the patient. In opposing the removal Mr. Bagley and the patient's two sons offered sufficient resistance to form the basis of a charge, and although the "assault" involved was not more than what is generally termed "technical," the police were ill-advised enough to make it the subject of legal proceedings. The charge was dismissed after an argument at least as technical as the alleged assault, on the ground that attempted suicide being a misdemeanour only the police could not arrest without a warrant unless they had witnessed the commission of the act, and that consequently to resist them did not constitute an offence. It was, however, contended on behalf of the prosecution that under a special Act passed for the benefit of Manchester in 1844 its police possess powers not enjoyed by similar officials outside the scope of that Act, and upon this question an application was made to have a case stated for the consideration of the High Court. Apart from this point, of interest chiefly to the citizens of Manchester and its police, the case appears to involve little else but the consideration of the conduct of those responsible for the arrest in question. This is a matter to which their superior officers may well give attention. To remove a wounded person, whatever his offence, when a medical man expresses the opinion that he should remain where he is, is a dangerous course to adopt. Should the death of the prisoner result from the removal the police officer responsible might find a very ugly charge framed against himself. The attempt at suicide is not now treated by the law as seriously as it was only a few years ago, when trial upon indictment necessarily followed, so that the great anxiety shown in this case to effect an immediate arrest was unusual. A point of importance to which the attention of the police should also be drawn is this: the relatives appear to have wished the old man to remain at home and to be treated there with a police officer in charge of him, and the medical man considered that this could be done. In other words, he appears to have been a patient who if he had received an injury of the same character accidentally would have been treated for it at home. Why, then, should the police take him to a hospital at all? A hospital, apart from such emergencies as street accidents, is a charitable institution for the benefit of those whose cases cannot be dealt with in their homes and who cannot afford to pay for treatment elsewhere. If the patient is a prisoner he is still received in the hospital, for it opens its doors to all without distinction of religious creed or of moral character. This, however, affords no justification for

the police filling a bed in a hospital ward with a prisoner for their own convenience and without regard as to whether he is a proper object of the hospital's charity or not. It is to be hoped that this aspect of the case will be brought to the notice of the Manchester police, and that the protests of Mr. Bagley will have had the effect of causing them to act with more care and consideration in future. He doubtless regrets that owing to the case against him having been dismissed upon a point of law he was not called upon to justify his action by his evidence and to put forward his version of the incidents of which the police had given theirs.

Two American Suits: Pressure Paralysis as an Accident, and Expectancy of Life.

It is not uncommon to find that more or less prolonged pressure upon a nerve trunk will result in the temporary paralysis of the muscles and anesthesia of the skin surfaces which are supplied by that nerve. The familiar instance is "crutch palsy" of the upper extremity. Syphilitic perioritis may lead to a gradual effect of a similar nature when, for instance, a nerve trunk passes through a foramen the walls of which are inflamed. Sometimes after a somewhat lengthy operation, where the anaesthetised patient has had to lie in a strained or unnatural posture, the paralysis which may result may puzzle one clinically inexperienced in such cases. Lately in the Indiana (U.S.A.) courts such a case led to legal proceedings. It was held that an injury to the hand superinduced by numbness resulting from using it and the forearm as a head-rest during sleep was covered by insurance against injuries through external and accidental means. The case is cited as *The Aetna Life Insurance Co. v. Fitzgerald*.—There are certain matters which, by the policy of the law, are excluded from discussion as being so problematical and so impossible of decision that it is merely to waste the court's time and to foster perjury to admit their forensic consideration. Such a matter might appear to be the probable expectancy of a person's life in the light of the knowledge of the age at death of his parents and grandparents. But it will be recalled that life insurance offices make such matters the subject of pertinent questions and the replies have been found to guide such offices in the estimation of the "life" under consideration. In the case of *Haynes v. Watervale Railway*, recently tried in the State of Maine, it was held that evidence of the age of the parents of the plaintiff was to be allowed in forming an estimate of the expectancy of his own life.

The Case of an East-End Bakery.

Two years ago, on Feb. 6th, 1905, a journeyman baker in the East-End fell down while at work and died shortly afterwards and the jury at the inquest upon his body found a verdict in accordance with medical evidence to the effect that death was due to heart failure accelerated by long hours of labour.¹ The *Daily Express* gave prominence to a somewhat sensational account of the case and published comment upon it couched in strong terms, upon which the master baker brought an action for libel. In defence the *Daily Express* pleaded that the words complained of were in their natural and ordinary meaning true in substance and in fact, and the jury took this view to the extent that although they found a verdict for the plaintiff they awarded him only one farthing as damages. Appeals by defendants against verdicts upon the grounds that the damages awarded are excessive are common, but it is unusual for appeals to come from plaintiffs who consider the damages inadequate. The baker plaintiff, however, appealed in this case successfully so far as the Court of Appeal was concerned, Lords Justices Vaughan Williams and Stirling considering him entitled to a new trial. Lord Justice Fletcher Moulton dissented and the House of Lords has now declared that he was right and the order for a new trial has been reversed. The late Lord Davey summed up the law by saying that the practice was not to disturb a verdict unless it was "perverse," and that in the case before their lordships it could not be said that the verdict was not one that might reasonably have been arrived at. The *Daily Express* is to be congratulated upon its success in a case of great importance to newspapers which, when commenting in outspoken fashion and in accordance with their duty upon matters in which the public health and public welfare are concerned, may fall into some trifling error of detail. There are people who may complain of such an error but who may not deserve

regards the Mauritius a telegram from the Governor received at the Colonial Office on Feb. 22nd states that for the week ending Feb. 21st there were eight cases of bubonic plague and six deaths from the disease.

THE REGISTRAR-GENERAL'S SIXTY-EIGHTH ANNUAL REPORT.

II.¹

In a previous notice of this report we summarised the weighty remarks of the Registrar-General on the waning fertility of English mothers. The causes of this calamity were discussed, as were also its effects in modifying the age-constitution of the population and thus seriously affecting the rate of mortality.

Our readers may remember that in commenting on that portion of the report of the Duke of Devonshire's Committee on Physical Deterioration which advocates the establishment in this country of a system of disease registration, we strongly urged the desirability of the project on the ground that, valuable as the national mortality returns undoubtedly are, they can never fully supply the place of a record of that sickness which results fatally in usually a small, and always an uncertain, portion of the cases occurring. We are, therefore, the more gratified to find that the official upon whom would probably devolve the duty of administering such a system in the event of its establishment cordially supports the recommendation to which we have referred. "Ever since the establishment of the General Register Office," writes Sir William Dunbar, "the only available test by which the state of the public health could be judged has been the mortality prevailing locally from time to time. It is, however, difficult to avoid the conclusion that the data which, for more than a half century, have been relied on for this purpose—relating as they do solely to sickness of sufficient intensity to destroy life—form no reliable measure of the aggregate loss of health and of 'earning power' experienced by the community as the result of sickness. Of the 'sickness' that is not unto death' the mere statement of the resulting mortality forms but a rough indication; for the fatality of most diseases varies enormously, both in different places and in different times. Not many years ago the truth of this contention was recognised by Parliament when one of the more enlightened English municipalities obtained legal powers for the notification of certain infectious diseases the prevalence of which was known to be prejudicial to health and life. Among diseases other than the common infectious ailments now recognised as communicable are tuberculosis and pneumonia, which diseases alone destroy more lives annually than do all the common infectious diseases put together. Regarding the quantitative incidence of tuberculosis or of pneumonia, not to speak of several other prevalent and fatal diseases, we are at present ignorant. A large portion of the sufferers from these diseases come under the treatment of the public hospitals, infirmaries, and dispensaries, and in view of the desirability of obtaining accurate information on this point it is, in my judgment, desirable that an attempt should be made to give effect to the recommendation of the Duke of Devonshire's Committee on Physical Deterioration by collecting periodical returns of sickness from the Poor-law medical officers in coöperation with the hospitals and other charitable institutions throughout the country." We quote Sir William Dunbar thus liberally in order to show that he is in sympathy with the recommendation of the committee referred to, and also, we may add, with ourselves. The Registrar-General does not specify the department with which the decision rests, whether the Local Government Board or the General Register Office; but we gather from his remarks that in the event of a beginning being decided upon no difficulties will be raised by his department.

As in previous reports, the general subject of mortality is treated of in Dr. Tatham's letter to the Registrar-General. From this letter we learn that in the year 1905 the loss of life by disease in England and Wales was less than in any previous year on record. As compared with the average rates in the previous five years the mortality among both males and females, in town as well as in country,

showed a substantial reduction, the fall in the urban group of counties being considerably greater than in the rural. In view of the steadily growing interest attaching to infantile mortality great prominence is given to the subject in the present report. In the volume for the previous year a new table had been given showing the loss of life among infants in groups of months within the first year after birth, and in each successive year of the first five. That table has been greatly extended for the present report, in fact, it has been partially reconstructed, so as still further to subdivide the first year of life, the deaths from the principal causes being shown in terms of 1000 births, in each week of the first month, and in each month of the first year. The death-rates are also shown of survivors in each subsequent year of the first quinquennium of life. This tabular extension has involved the re-abstraction of the whole of the infant deaths in 1905, but Dr. Tatham is confident that the additional labour has been justified by the results, more especially since the table now corresponds in all respects to the new tabular form No. V. issued to medical officers of health by the Local Government Board. Moreover, inasmuch as infantile mortality is shown in the present report for representative areas, urban as well as rural, medical officers of health will possess in these tables trustworthy standards by which the infantile mortality of their own districts may be judged.

In the pages of THE LANCET attention has frequently been directed to the fact that although the general mortality in this country has steadily fallen in the course of the last half century, nevertheless this benefit has by no means been shared by infants in their first year of life. Frequent and at times considerable fluctuations in the rate of death among young children are caused by atmospheric and seasonal conditions, but if an average of several years be taken it will be found that infants in their first year of life perish as rapidly now as they did half a century ago. Although this fact has been steadily kept before us in the successive reports of the Registrar-General it is only in comparatively recent times that public interest has been thoroughly aroused. Last June, however, a conference on the subject was called by Mr. John Burns, President of the Local Government Board, and the medical officer of that Board has promptly taken steps to procure periodically from every medical officer of health in England and Wales a return of mortality in the infantile community of his district.

We observe that the mortality in specified parts of the first year of life is indicated as a proportion of the total births registered within the year, although the more correct method would have been to calculate the deaths in each part of the first year on the number of survivors or on the mean population of the period. Inasmuch, however, as the births are not at present returned for intervals of time shorter than three months it is not possible to calculate precisely the number of survivors at the several weeks or months of the first year. For these periods it is explained that the published figures must be regarded as records of that portion of the total mortality under one year that occurs in the successive weeks or months of that period rather than as death-rates in the ordinary acceptance of that term.

It is shown in the tables that about one-fifth part of the total loss of life in the first year takes place within the first week after birth, whilst by the end of the first month the proportion reaches one-third, and by the end of the third month it exceeds one-half. In both sexes the first week of life is by far the most destructive to infant life. Thus we note that one out of every 35 males born, and one out of every 46 females born, perishes within a week of birth. In the first week of life the mortality of male infants is higher by nearly one-third than that of female infants. The excess in the male rate remains nearly constant for several months and then decreases irregularly until, in the fourth and fifth years of life, somewhat more female children die than male children.

The high mortality in the first few days after birth is mainly due to the decease of infants who, either from immaturity or from debility at birth, can hardly be regarded as viable. Wasting diseases, including premature birth, congenital defects, atrophy, &c., are the chief causes of deaths occurring at this early age. In the second, third, and fourth weeks of life the mortality falls to less than a quarter of that in the first week. The same diseases still account for a large share of the mortality, but from diseases other than these the mortality in successive weeks of the first month varies but slightly, being somewhat higher in the second than in the first half of that period.

¹ A previous notice of this report appeared in THE LANCET of Feb. 16th, p. 450.

annual death-rate of 1·6 in Smethwick, 3·7 in Grimsby, and 5·1 in St. Helens. The 95 deaths from whooping-cough showed a marked decline in the numbers in recent weeks; the highest rates therefrom were 1·2 in Rochdale, 1·7 in Rotherham, and 2·6 in Middlesbrough. The 65 deaths referred to diphtheria also showed a decline, the disease being proportionally most fatal in Derby and in Wigan. Scarlet fever caused eight deaths in London, five in Birmingham, and three each in West Ham, Sheffield, and Hull. The deaths referred to "fever" were exceptionally few. The fatal case of small-pox occurred in Bristol. No case of small-pox has been under treatment in the Metropolitan Asylums Hospitals since the end of June last. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had steadily declined in the eight preceding weeks from 3846 to 3035, further fell to 2928 in the week under notice; 322 new cases of this disease were admitted to these hospitals during the week, against 311 and 368 in the two previous weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 528 and 527 in the two preceding weeks, declined to 379 in the week under notice, and were 59 below the corrected average in the corresponding week of the last five years. The causes of 58, or 1·1 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London, Leeds, Bristol, West Ham, Salford, and in 48 other of the 76 towns; the proportion of uncertified deaths, however, again showed a marked excess in Birmingham, Liverpool, Gateshead, South Shields, and Tynemouth.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 23·0 and 22·0 per 1000 in the two preceding weeks, further declined to 18·8 in the week ending Feb. 23rd, but exceeded the mean rate in the 76 English towns by 1·0. The rates in the eight Scotch towns ranged from 14·6 and 15·9 in Aberdeen and Paisley, to 20·3 in Glasgow and 20·8 in Dundee. The 654 deaths in the eight towns showed a further decline of 110 from the numbers in the two previous weeks, and included 71 which were referred to the principal epidemic diseases, against 105 and 84 in the two preceding weeks. These 71 deaths were equal to an annual rate of 2·0 per 1000, which exceeded the rate from the same diseases in the 76 English towns by 0·7; they included 27 which were referred to whooping-cough, 25 to "fever," 10 to diarrhoea, six to diphtheria, two to measles, one to scarlet fever, and not one to small-pox. The 27 fatal cases of whooping-cough exceeded the number in the previous week by seven, and included 20 in Glasgow, three in Greenock, and two each in Edinburgh and Aberdeen. The 25 deaths referred to "fever" were fewer by 24 than the number in the previous week, including 21 in Glasgow, and two both in Edinburgh and in Paisley; 19 of the 21 in Glasgow and all the four in Edinburgh and Paisley were certified as cerebro-spinal meningitis. Of the six fatal cases of diphtheria, two occurred in Paisley. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 178 and 163 in the two previous weeks, further declined to 161 in the week under notice, but exceeded the number in the corresponding week of last year by 39. The causes of 23, or 3·5 per cent., of the deaths registered in the eight towns during the week were not certified or not stated; the mean proportion of uncertified deaths in the 76 English towns during the same week did not exceed 1·1 per cent.

HEALTH OF DUBLIN.

The annual death-rate in Dublin, which had been equal to 21·8, 28·6, and 31·4 per 1000 in the three preceding weeks, declined to 27·1 in the week ending Feb. 23rd. During the first eight weeks of the current quarter the death-rate in the city averaged 28·6 per 1000, the mean rate during the same period not exceeding 20·1 in London and 21·6 in Edinburgh. The 203 deaths of Dublin residents during the week under notice showed a decline

of 32 from the high number in the previous week, and included nine which were referred to the principal epidemic diseases, corresponding with the number in the previous week. These nine deaths were equal to an annual rate of 1·2 per 1000, and included three from whooping-cough, three from diarrhoea, two from "fever," one from diphtheria, and not one either from small-pox, measles, or scarlet fever. The fatal cases of whooping-cough showed a further decline from recent weekly numbers. The deaths in the city included 37 of infants under one year of age and 51 of persons aged upwards of 65 years; the deaths of elderly persons were fewer than in any previous week of this year. Nine inquest cases and seven deaths from violence were registered during the week; and 71, or 35·0 per cent., of the deaths occurred in public institutions. The causes of five, or 2·5 per cent., of the deaths registered during the week were not certified; the percentage of uncertified deaths in the week under notice was 5·9 in Edinburgh, whereas every death in London was duly certified. The 146 deaths in Belfast during the week ending Feb. 23rd included 12 which were referred to cerebro-spinal fever or to cerebro-spinal meningitis.

THE SERVICES.

THE NEW SCHEME OF ARMY REORGANISATION.

Mr. Haldane on Monday last in a long and elaborate speech put the House of Commons in possession of his scheme of army reorganisation. He referred to the deficit of men in the Army Medical Department as "very serious indeed." His remarks on the subject will be found in our Parliamentary columns. With regard to the scheme generally it may probably be said to be on the whole and under existing conditions about the best which has yet been devised. But it is too comprehensive in character to be appreciated in its entirety and it is impossible to foretell how it will work out in practice. It is not easy to create an "army on the cheap," especially a good one. It remains also to be seen how far reliance can be placed on the patriotic sentiment and national sense of duty on the part of the youth and young manhood of this country to make it a success. While there is no room for doubt about Mr. Haldane's honesty of purpose and belief there will still remain much room for misgiving among all those who have not already made up their minds on the subject.

ROYAL ARMY MEDICAL CORPS.

Colonel Ernest H. Fenn, C.I.E., is placed on retired pay (dated Feb. 16th, 1907). Lieutenant Godfrey F. Rugg, from the Seconded List, to be Lieutenant (dated Feb. 10th, 1907).

Lieutenant-Colonel E. Eckersley has been appointed a recruiting medical officer in London. Captain J. C. Kennedy, from the Eastern Command, has joined the London District for duty. Captain J. M. Cuthbert has taken over temporary charge of the Glencorse Military Hospital.

ROYAL ARMY MEDICAL CORPS IN INDIA.

The following officers embarked from England on Jan. 23rd: Lieutenant-Colonel M. W. O'Keefe, Major J. Hennessy, Captain R. Rutherford, Captain J. S. Gallie, and Lieutenant M. J. Cromie. Lieutenant-Colonel W. T. Swan has been granted extension of sick leave from Jan. 20th, 1907, to date of embarkation for India. Major Boyle has been ordered to Agra from Bareilly Brigade and Major L. Way ordered to Allahabad from Calcutta for duty. Lieutenant Keane has been ordered to Meerut for duty in the Station Hospital on completion of course of instructions in sanitation at Lucknow. Lieutenant A. A. McNeight has been transferred to Allahabad for temporary duty. Lieutenant W. C. Nimo has been transferred to Fyzabad on completion of course of instructions in sanitation at Lucknow. Lieutenant-Colonel R. E. Molesworth's passage on the *Plassy*, sailing March 6th, has been cancelled.

ARMY MEDICAL RESERVE.

The undermentioned to be Lieutenants on probation (dated Feb. 1st, 1907): Archibald Crawford Adams, Cecil Ewing, and William Mitchell Browne. Alfred Sutton Millard to be Lieutenant (dated Feb. 1st, 1907).

IMPERIAL YEOMANRY.

Duke of Lancaster's Own: Frederick James Green to be Surgeon-Lieutenant (dated Jan. 18th, 1907). Mont-

to recover compensation on account of it, and it is satisfactory to see that juries can, and may, appreciate this. They are not, as a rule, subject to any tendency to be unduly lenient to defendants in actions for libel, as all newspaper proprietors know.

Medical and Legal Presumption of Survivorship.

The recent terrible loss of life on board the wrecked steamship *Berlin* brings into prominence a question of considerable interest from a medical as well as a legal point of view—namely, the question of survivorship. The presumption as to survivorship may become important with regard to the devolution of property; common instances affording occasions for questions of survivorship arising occur when two persons (especially when two relatives) perish in the same calamity, such as a wreck, a battle, or a conflagration. Direct proof can seldom be procured in these cases. In the Roman law and in several other codes recourse is had to artificial presumptions whenever the particular circumstances connected with the deaths are wholly unknown, such presumptions being based on the probabilities of survivorship resulting from strength, age, and sex. Thus, if a father and son perish together in the same shipwreck or battle Roman law presumed the son died first, if he was under the age of puberty; but if he was above that age that he was the survivor, the principle being that in the former case the elder is generally the more robust and in the latter the younger. The French Code has regard to the ages, and presumes that of those under 15 the eldest survived and that of those above 60 the youngest survived; that if one of the parties were under the age of 15 and the other above the age of 60 the former survived, and that if both parties were between those ages, but of different sexes, the male survived unless he were more than a year younger than the female, but that if they were of the same sex the survivorship of the younger must be presumed. The same rules were in force in the Territory of Orleans at the time of its cession to the United States and have since been incorporated into the Code of Louisiana. They have also, with some modifications, been adopted into the State of New York. But in the law of England there is no presumption of law arising from age or sex as to survivorship among persons whose death is occasioned by one and the same cause. Nor is there any presumption of law that all died at the same time. The question is one of fact, depending wholly on evidence, and if the evidence does not establish the survivorship of anyone the law will treat it as a matter incapable of being determined. The *onus probandi* is on the person asserting the affirmative. In *Wing v. Angrave* (8 H. L. C. 183) two persons, husband and wife, made their separate wills. In the husband's will the property was given to his wife, "and in case my wife shall die in my lifetime" then to W. W. in trust for the children on their coming of age, and in case all of them should die under age then to W. W. for his absolute use and benefit. In the wife's will (made under a power given by her deceased father, in default of the exercise of which the property was to go to relatives specifically named) the property was given to the husband (subject to interests in the children), "and in case my husband should die in my lifetime" then to W. W. absolutely. The husband and wife and two children perished at sea, being all swept off the deck by one wave and all disappearing together. It was held by the House of Lords that there was no presumption that the husband had survived the wife or the wife the husband. The principles thus established must be considered as the actual law governing the courts of England and their reasonableness will hardly be disputed. They discard theories which are at best founded on mere conjectures which can rarely, if ever, be verified. The principles on which the courts of England act appear to be recognised and acted on to a certain extent by Holland and the German and Scandinavian States, while in the south of Europe, Italy, France, and Spain the doctrines of the Roman law prevail.

Barberio's Reaction for Semen.

In the *Semaine Médicale*, 1906, p. 476, M. Levinsohn describes Barberio's reaction for the identification of semen and draws attention to its superiority over other methods. A concentrated aqueous solution of picric acid is added to one drop of the suspected semen or its concentrated aqueous solution. In the presence of semen rhomboidal crystals, yellow in colour, are formed. This is a delicate microscopical reaction; it is alleged to have the advantage that it is only

produced with the semen of man, thus excluding the semen of various animals and the other secretions and excretions of the human body. The reaction occurs even in the absence of spermatozoa from the semen, a point of importance in cases of blennorrhagic bilateral epididymitis, when the ordinary microscopical method is useless.

Looking Back.

FROM

THE LANCET, SATURDAY, Feb. 28th, 1829.

POPULAR FEELING FROM THE LATE TRIAL.

A MAN went to Bartholomew's a few days ago, complaining of hydrocele, and was placed under the care of Mr. EARLE. He was told he would soon be cured; and on Saturday last, was desired to go into the operating theatre, where it was intended to tap him. When he arrived, the theatre was crowded to excess, and the first object that attracted his attention was Mr. Earle standing by the table, with a trocar in his hand ready to operate. "Oh!" said the patient, "is this it? No, my lads; I have heard of that Barnaby Cooper's operation for the stone, in the Borough, and you don't take any stone from me, depend on't; besides, my friends don't know where I am." And having thus expressed his determination, he bolted, amidst the loud laughter of the pupils. A chimney-sweeper was waiting just by, to have a cancer of the scrotum removed; but on seeing the other man make so hasty an exit, he took to his heels in the same manner, and was no more seen or heard of.

THE COMMON BUCK-BEAN, OR MARSH TREFOIL, AS A SUBSTITUTE FOR HOPS.

Mr. Yosy communicated to the Medico-Botanical Society, that the above-named plant is used in Germany as a substitute for hops, and contains the bitter principle in greater abundance than the common hop. The leaves should be gathered in the spring, and dried in the shade. It is also employed in brewing porter in Sweden, and it is said to have been introduced there by an English sailor, in 1789. For this communication, the Society presented to Mr. Yosy their silver medal.—*Transactions of the Medico-Botanical Society*, No. 1.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8250 births and 5469 deaths were registered during the week ending Feb. 23rd. The annual rate of mortality, which had been equal to 20.9 and 20.4 per 1000 in the two preceding weeks, further declined to 17.8 in the week under notice. During the first eight weeks of the current quarter the death-rate in these towns averaged 19.8 per 1000, the rate during the same period in London being 20.1. The lowest annual death-rates in the 76 towns during the week were 6.9 in King's Norton, 10.7 in Leyton, 11.6 in Derby, and 11.8 in Smethwick; the rates in the other towns ranged upwards to 24.8 in Stockport, 25.5 in Brighton, 27.7 in Middlesbrough, and 27.9 in Hanley. The 5469 deaths in the 76 towns showed a further decline of 780 from the high numbers in recent weeks, and included 390 which were referred to the principal epidemic diseases, against 466 and 412 in the two preceding weeks; of these, 136 resulted from measles, 95 from whooping-cough, 65 from diphtheria, 39 from diarrhoea, 38 from scarlet fever, 16 from "fever" (principally enteric), and one from small-pox. The deaths from these epidemic diseases were equal to an annual rate of 1.3 per 1000 in the 76 towns, to the rate from the same diseases in London being only 1.2. No death from any of these epidemic diseases was registered last week in York, Sunderland, Walsall, Hanley, or in 12 other of the 76 towns; the annual death-rate therefrom, however, ranged upwards to 3.3 in Rotherham, 4.4 in Grimsby, 4.6 in Middlesbrough, and 5.6 in St. Helens. The 136 fatal cases of measles showed an increase upon recent weekly numbers; they caused an

work. Malarial cachexia and the enfeeblement resulting from Indian service greatly handicap these discharged men in seeking employment in the labour market against healthy men. It is true more work is done by the officer and the soldier, but the eight-hour day's work of civil life is still hardly dreamed of in the barracks, and so parents resent their boys entering a calling very poorly paid, and which weakens by its routine that development of character that a full day's work produces and on which the future of the nation depends. When people, ignoring all these drawbacks, play the card of "compulsion" I tramp it with that of "betterment"—better training, better payment for officers and men, a higher ideal of service and duty to England, and on her part more sympathy with those on whom the "burden of Empire," that most exhausting and enervating strain, weighs with killing force.

In my opinion, at any rate, the army should be a high school for the young men of the land and a training institution raising each individual in it to higher ideals. Education should be fully carried out and the well-chosen officers, well paid and well treated, should live most devotedly for England and she will amply repay them if they care for her sons serving in the army. I say with much pleasure that one corps of officers have never in the past failed in this splendid betterment service. The work done in past years by the medical officers for the "betterment" of the soldier's life has been too devoted for words. Greatly handicapped and weakened by defective status in the past ages of ignorance and neglect they struggled hard and often broke down in the fight for justice for the soldier.

Had their rational, scientific, and common-sense views prevailed in the dark ages of the past army history the defective prestige of the soldier's life that now is dying out so slowly in England would never have existed, and like the police or the post office or any other public national employment a stream of the finest of our young men would with short service be pouring into the service to benefit by its teaching, as the young Dane to-day benefits by the "popular high schools" of that progressive land.

Any medical man who desires to see the soldiers at the "punishment drill" that physically weighs down the young soldier's heart and shakes his circulation has only to halt his carriage any day in front of the railings of Wellington Barracks in London and join in the crowd that day by day looks on to see the soldier at that old-world "pillory-like" punishment of "defaulting punishment drill," driven about the square by ignorant provost sergeants, and hustled "to make a Roman holiday" in front of a crowd of onlookers. Not all the tinsel glamour and allurements of the recruiting sergeants in Trafalgar Square can wipe out the injurious effects of this wretchedly old-world and public punishment daily going on before the public eye within a stone's throw of the Park. Yet a 6d. fine would quite suffice and easily wipe out the offences so punished.

All this, and much more, has to be removed and abolished within the army, and when it is done and betterment comes we shall need no "compulsion." I trust medical men in civil life will inquire into all these matters before becoming *conscriptivists*. To them I can appeal with confidence because they know the sanitary needs of the military as of the civil population and hard at work themselves can measure by their trying days of duty the easy-going life that still in certain corps, to the detriment of the nation, survives within the army. I close my letter with these watchwords, "BETTERMENT AND NO CONSCRIPTION," and appeal to all medical men to stand by this programme.

I am, Sirs, yours faithfully,

GEORGE EVATT,
Surgeon-General late A.M.S.

Junior United Service Club, London.

THE CURRANT AS A FOOD.

To the Editors of THE LANCET.

SIRS,—The "true inwardness" of the effort which has for some time been made to "boom" the currant as not only an eminently digestible but also as a highly nutritious article of diet would be both amusing and instructive if this were the proper place for expiring it. Mr. J. Cantlie has not at all exaggerated the objections to the currant from the point of view of digestibility. The currant is, of course, only a small grape, but with a proportionately tougher and less digestible skin than the ordinary grape and with relatively more of it on the well-known principle that the smaller a

globular body is the larger in proportion is the ratio of its surface to its contents.

If we are to recommend any dried form of grape for dietetic use surely it would be more rational to advocate the use of sultana raisins than currants. It is rather an ambiguous recommendation of the currant to say, as Mr. Haydn Brown does, that in bread it will "cause the least harm." As to the preposterous advertisements about the highly nutritive value of currants, until those who are responsible for them can show that the juice of the currant, like that of the grape, contains anything more than a little sugar and a trace of albuminoid and saline matter, it is a mere waste of time to discuss the subject.

I am, Sirs, yours faithfully,

Gloucester, Feb. 23rd, 1907. FRANCIS T. BOND, M.D. Lond.

ON THE CONDITION OF THE BLOOD-VESSELS DURING SHOCK.

To the Editors of THE LANCET.

SIRS,—May I be permitted to make a correction in your report in THE LANCET of Feb. 23rd, p. 507, of my remarks in discussing Mr. J. D. Malcolm's paper at a meeting of the Royal Medical and Chirurgical Society on Feb. 12th. The report says that I "did not believe that the treatment of shock by the application of heat was attended by any beneficial result." To have given anyone the impression that such was my opinion I must have been more than usually halting and inconsequent. I am, in truth, quite innocent of heterodox views on the subject of shock and I accepted with all humility the statement that the application of warmth exercises a beneficial influence in the treatment of that condition. Mr. Malcolm had instanced this beneficial influence in favour of his view that the blood-vessels are contracted in shock. What I endeavoured to say in the course of my criticism of his arguments was that the beneficial influence of warmth was due in all probability partly to its agreeable effect upon the patient and largely to the fact that it tended to prevent undue loss of heat from the surface of the body; and that, further, the action of warmth upon the calibre of the blood-vessels being that of dilatation and the blood-vessels being unduly dilated in shock, such action, if it existed, which I did not believe, would be harmful and not helpful.

That the blood-vessels in shock are dilated and not contracted seemed to me to be abundantly clear from the writings of Crile, Leonard Hill, E. H. Starling, Lockhart Mummery, and others, to whose very convincing arguments Mr. Malcolm's paper had, in my judgment, opposed nothing of any real importance. There are other points on which, judging from the report, my incoherence would seem to have misrepresented me, but inasmuch as they portray me merely as an orthodox platitudinarian bore, and not as a propagandist of dangerous therapeutic heresies, I forbear to trouble you on the subject.

I am, Sirs, yours faithfully,

York-street, W., Feb. 23rd, 1907.

LEONARD WILLIAMS.

BURIAL BY THE STATE.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Feb. 16th, p. 463, under the above heading, is a letter from Mr. S. P. Wills which, while expressing "wonder that the matter of burial by the State has not been made a subject of practical legislation" and indicating the details over which control is considered desirable, touches also on the collateral points of premature burial and the "earth-to-earth" and cremation systems of disposal of the dead. That these topics are highly important, intimately bearing on the individual and the community, cannot be questioned; they have already been freely handled in the press, yet no sufficient legislative action has been taken except in the case of cremation, for which necessary safeguards prior to permission to act have been promulgated. The matters touched upon range themselves under two headings: (1) action desirable on death supervision; and (2) disposal of the body subsequently; and while the efficient control of the former is beyond all doubt the duty of the State, that of the latter, more especially as bearing on one sole mode of burial and its associated details, is open to question. May I say a few words on these points?

At the present time we have a condition of affairs which,

of weights and measures commonly known as the metric system" may seem drastic, but the arguments in its support seem to me incontrovertible.

I am, Sirs, yours faithfully,
Feb. 25th, 1907. D. D. D.

ITALIAN MUNICIPAL ABATTOIRS.

A VISIT TO THE MILAN AND VEROCELLI SLAUGHTER-HOUSES.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

If the laws of Italy relating to public health questions are examined it will seem that Italy must be quite an ideal nation. The fact is that United Italy has only been in existence for a very short time and as the laws were but recently enacted they were naturally based on the best models. But between the law and its application there is a wide space. Still, it is something to know that in Italy the counsels of perfection do not conflict with the law. Thus, in an old country like England the law says that the authorities may, if they choose, build a public slaughter-house. Of course, the result is that only a very small number of local authorities have availed themselves of this permission. But the Italian *Regolamento* of August 15th, 1890, emphatically states that all communes with more than 6000 inhabitants must construct public abattoirs. Further, only a technically qualified person—that is to say, a veterinary surgeon—must be appointed as director or manager of these abattoirs. Then the law gives minute details in regard to their construction, so that they shall be thoroughly sanitary buildings. There must also be a place where animals can be kept for a period under observation and there should be a steriliser and a destructor. The last two stipulations have been carried out on a very large scale in Italy. But in other respects there is a terrible difference between the law and the reality.

M. Pion, a well-known authority on these subjects, writing in the *Semaine Vétérinaire* of 1893, says:—

When some 30 years ago a number of slaughter-houses were built they were not supplied with sufficient water nor was enough room allowed. The means provided for suspending the carcasses were not numerous enough and they were complicated, cumbersome, and difficult to manoeuvre. In most cases they are similar to the very mediocre abattoirs of the South of France, where, under so powerful a sun, there should prevail absolute cleanliness. The slaughter compartments or sheds are paved with flag-stones and there are gratings and openings where the blood flows down and mixes with excremental matter, finding its way by a sewer to a river which is generally near at hand. Sometimes the abattoir is near the seaside, as, for instance, at Bastia and Donisefio. The fish, the seagulls, birds of prey, and dogs then play the part of scavengers. At the same time foul odours testify to the absence of sanitation. Much the same may be said in regard to most slaughter-houses on the borders of the Mediterranean, however important they may be. But there is one corrective. During the summer very few animals are slaughtered and no hogs whatsoever.

From this it will be seen that the state of affairs in Italy is not described as perfect and that the law remains to a large extent a dead letter. Nevertheless, the public abattoirs at Rome, which were completed in 1892, possess many modern improvements. There are a quarantine section, a destructor, a post-mortem chamber, and baths for the attendants; there are no private compartments for slaughtering but large halls where concealment is impossible. The principal fault is that the space, 50,858 square metres, is not sufficient for a population of about half a million. The cost was £280,000, or 14s. 6d. per inhabitant. Many other towns propose to follow the example of Rome and to build something more like modern and sanitary slaughter-houses. This is notably the case at Genoa and at Milan.

The slaughter-house of the latter town I was able to visit. In a general sense it recalls the abattoir of La Villette at Paris. There are the long rows of private compartments giving on to a roofed court, but it is not a glass roof. In Paris complaints are made of the excessive heat when the sun shines on the glass. At Milan this grievance would be more insupportable. But, on the other hand, the roof is here held up by a series of pillars rising a considerable height above the buildings on each side of the court. Thus there are a free passage of air and some light. Only a very narrow ray of sunshine reaches the floor of the court, and of course in a climate like that of Italy the object is to obtain as much air but also as much shade as possible. Apart from this the disposition is very similar to that of the Paris abattoir (see illustration in THE LANCET of Jan. 12th, p. 125). On both sides is the

long succession of double doors as if it were a row of coach-houses. Each butcher hires one of these compartments, but throws these doors wide open when he is slaughtering and does some of the work outside. The bullocks and other animals are driven into these compartments where they may see at the farther end carcasses hanging from cross-beams. Much filth falls on the floor as the intestines are cleaned out on a marble slab placed in a corner of each of these compartments. The darkest corner seems to have been selected for this purpose—namely, between the door and the side wall, just where the light entering by the door cannot reach. Near the slab there is an opening to a drain in the angle of the wall. Here the small intestines are cleaned out and their contents fall on the floor. This recalled the filthy spectacle to be seen at La Villette during slaughtering time and is far from satisfactory. These small compartments only contain very rudimentary contrivances. Above there are two huge wooden rafters crossing the compartment at a height of from 12 to 14 feet. A triangular wooden apparatus, something like an artist's easel, is used to raise the carcasses. This tripod is armed with a pulley and crank. Thus the carcass of a heavy animal may be lifted and suspended to the cross-beams, but it could not be moved backwards or forwards or the halves separated. The intestines fall on the floor; the stomach is thrown into a wooden tank which is lifted by hand and emptied in the open shanty where the manure awaits removal.

The place for the slaughtering of hogs is bad but still there are plenty of light and air and a good, sound, water-tight cemented floor. The walls are not enamelled or made of washable material, so that the blood and dirt adheres to, and sinks into, them. But there are good sound troughs for washing out the intestines that can easily be kept clean. The sheep slaughter-house is much in the same condition. The surrounding walls are armed with long spikes and on these are hung the carcasses of the sheep, where they remain in the unsuitable atmosphere and dirt of the shambles. Then there is quite a large horse slaughtering department which is the worst constructed part of the abattoir. Here for air and light there are but the door and windows on one side, and only very few openings in the roof. Though a good deal of horseflesh is eaten the horse-tripe is thrown away. The place where the tripe from bullocks, &c., is washed and prepared is large, lofty, but dirty. Above there are many rafters with cobwebs hanging down in great numbers. For washing and soaking very large broad wooden tubs are used. These are fine specimens of cooperage and look picturesque, but stone or metal, not wood, is the material that should be employed.

The stables are more insanitary than the slaughtering department. Light is admitted on one side only and the structures are low and very imperfect. Instead of a well-drained water-tight floor the earth is paved with small round stones which let the liquid manure pass through and facilitate the contamination of the subsoil. Again the offices for the veterinary surgeons and staff looked shabby, dusty, and poor. The German "freibank" system of sterilising tuberculous and other slightly diseased meat, which was so well explained by Dr. Hugh A. Macewen when dealing with German methods of meat inspection in a recent number of THE LANCET,¹ is applied here. This flesh after it has been exposed to heat in a steriliser for a sufficient time is sold to the poor at the rate of 60 centimes the kilogramme, or about 3½d. per pound. It is the rule at Milan not to sell more than two pounds to each purchaser so that it should not be used in eating or boarding houses. Perhaps what impressed me most favourably was the carts which butchers are made to employ when they carry meat from the abattoir to their shops. These are light vehicles and in no wise ungainly. They close completely, but near the top there are on each side narrow apertures to let the air pass but not large enough to admit flies or any great quantity of dust. They are of different sizes, some small enough to be pushed or pulled along by one or two men, but so far as the meat is concerned the form of inclosure or protection is the same. The meat is also well shielded from the heat. This is a detail which needs emphasising in England and particularly in London. Here no special care is taken as to the handling and conveying of carcasses and meat; there is no such thing as a regulation butcher's cart such as may be seen any day in the streets of Milan.

As a contrast with Milan, which is one of the largest

¹ THE LANCET, Feb. 2nd, 1907, p. 312.

as shown by the Parliamentary inquiry of 1893, provides "no safeguard against criminal attempts on life," forms "no trustworthy record of disease," and requires no reasonable proof of death, so furnishing an occasion for premature burial with possible accompanying horrors; yet surely it would be no difficult task to frame a few regulations which would necessitate full professional inspection by recognised and authorised officials in every case of notified death, which would require removal of the body to a public mortuary where the conditions made such action necessary on sanitary grounds, for its retention for a reasonable period pending disposal, and which would prevent burial or other disposal of the body without the certificate of the authorised official, drawn up shortly before the closure of the coffin, as to the fact of death and its causation? That the chances of concealment of foul play and of premature burial would be reduced to a minimum, that sanitary requirements would be met, and the causations of death be placed on a more reliable and scientific basis than at present pertains will not be questioned; yet we permit the present haphazard and dangerous practice to continue. Here surely the need of State intervention on death notification, for the well-being of all, is placed on an undisputable basis as a matter of duty; the facts are clear and well known to the thinking community and to the legislature; action only is wanted. And at the present time we have two methods in operation for disposal of the body—vault or earth consignment in a coffin and cremation. By the former process as usually carried out we now, just as older races did and probably now as then under the influence of religious views bearing on the resurrection of the body, oppose the natural resolution of our mortal frames through the wholesome and beneficent earth's action by inclosure in metal or strong wooden surroundings; yet we do but delay the process of disintegration thereby and give occasion to its passing through a phase of decomposition, unaccompanied by the disinfecting power of porous soil, which because it is out of sight is out of the mind of the majority of individuals though no less horrible in fact. That "earth-to-earth" burial in properly selected ground would meet the requirements of sanitation and follow closely nature's plan may be granted and there seems no reason why such a satisfactory committal to the grave cannot be effected under our existing custom with no more offence to the living than is produced by contact of the earth with the dead, some slight covering intervening. The necessary departure from our present proceedings would be some mechanical arrangement by which the top and sides of the coffin could be removed after placement in the grave and before returning the excavated soil. It may be replied that the collapsible coffin practically effects all that is needed. But is this so certain? One outcome of strict "earth-to-earth" burial would, I think, follow, and this is no small matter to those who dread the possibility of premature burial: no return to consciousness would ensue should life not be extinct. In regard to vault burial it is difficult to adduce a single point in support of it; and though in our islands committal of the body to the sea might be advocated in the future, when accumulating burials as now effected have curtailed the available desirable ground, the only other mode open to those who have a repugnance to coffin burial, for various reasons, is cremation. Mr. Wills regards it with horror; others, however, are clearly not of his way of viewing the process. Its sanitary advantages are apparent: it is rapid and effective in action; by it resolution of the body into its elements differs not from that of earth burials except in the chemical combinations effected; through preliminary necessary legal requirements the possibility of concealing malpractice is reasonably excluded and the fears of premature burial do not come into existence; it is stated not to be more costly than grave burial. Though stigmatised as "heathenish" by some, its position is essentially the same as earth burial; both systems preceded Christianity and both are now practised under it; the real principles involved in both are not those of religion but of sanitation and social jurisprudence.

Whether the time is not a ripe one for pressing home the necessity of proper regulations preceding the disposal of the dead, now that we have a political party in power whose supposed essence is social reform, is a question well worth consideration, but in respect to the permissible modes of disposal of the dead, subject to such sanitary and other safeguards as may be necessary for the well-being of the community as a whole, is not the matter rather one for the

individual to decide for himself? And is it not for the individual with fears of premature burial to take such counter-acting precautions as may suggest themselves pending the provision of proper legislative enactments by the State?

I am, Sirs, yours faithfully,

FRANCIS H. WELCH, F.R.C.S. Eng.

Lee, S.E., Feb. 16th, 1907.

THE CENTRAL MIDWIVES BOARD.

To the Editors of THE LANCET.

SIRS.—I notice in THE LANCET of Feb. 16th a report of the meeting of the Central Midwives Board and in the last paragraph it is stated that "the charge alleged against a midwife—A. L. Bellis—by the local supervising authority of Southampton was considered and the Board decided that she should be severely censured on her own admission of having made a false declaration of stillbirth."

I may say that the local supervising authority has not made any such charge against Nurse Bellis, nor has the local supervising authority communicated with the Central Midwives Board respecting her; furthermore, the local supervising authority has no official knowledge that she has been censured by the Central Midwives Board. I received the notice of stillbirth from her, and at the coroner's inquest she explained that it was a breech presentation, and that the child was partly born on her arrival. It would appear to me that she had a perfect right to give a certificate of stillbirth, but through a misapprehension she put "B.B.A." on the certificate. I placed so little importance on the nurse's mistake that I did not report the particulars to the local supervising authority.

Trusting you will give these remarks the same publicity as your report of the meeting of the Central Midwives Board of Jan. 31st,

I am, Sirs, yours faithfully,

R. E. LAUDER, M.D. Durh.,

Medical Officer to the Local Supervising

Southampton, Feb. 27th, 1907.

Authority.

THE ADVANTAGES OF THE METRIC SYSTEM.

To the Editors of THE LANCET.

SIRS.—The Decimal Association is doing good work in helping to bring about the consummation so devoutly to be wished—namely, the adoption of a decimal system of weights and measures and coinage in the United Kingdom. Everyone, I suppose, is convinced of the absurdity of the present system, if such it can be called, for there is absolutely no uniformity in it, consisting, as it does, of a bewildering number of weights and measures of various origins. There must be real reform and there can be no adjustment or adaptation of such a clumsy system; it must go altogether in favour of metric measures applied to all the branches of standardisation, weight, capacity, length, and even coinage. The trouble is to appoint the exact moment when the old system is to be made obsolete and the new system current, but the experience of other civilised countries has proved that the difficulty of change is not as great in practice as might be thought. Further, there is no non-metric country left to worry us as we have worried others. The following is an interesting calculation, and there are scores of others in regard to the immense saving of time which would be effected if the metric system was adopted. Schoolmasters have estimated that the saving in educational time by the exclusive adoption of the metric measures would be about 200 hours per year per child. If coinage were decimalised the saving would be increased to about 350 hours—that is, about 200,000,000 hours a year for ever of school children's time can be saved by a reform which would cost adults on the average about the equivalent of a day's work. This seems alone worth while bringing about the reform in earnest apart altogether from the gain to commercial and scientific workers. We should then worry no longer about the equivalent of metres in inches (of which three barleycorns make one), of grams in grammes, of kilogrammes in tons, of pints in litres, of shillings in francs, and so on *ad nauseam*. Most of us, especially those who are compelled to make scientific calculations, hope that the Weights and Measures (Metric System) Bill ordered recently by the House of Commons to be printed will receive full, careful, and unbiased consideration. A Bill "to render compulsory the use of the system

know what must be done with the infirmary site now that they have got it. The scheme most frequently talked of has been to build a free library and an art gallery under one roof. Another idea strongly advocated by some, and worthy of consideration, is to preserve it as an open space. The curious objection raised to this is that the space will be or look so large that the shops and warehouses in the surrounding streets will be dwarfed, a matter which would not be a grief to those rejoicing in the open space. Another project seriously put forward by one of the city council is to have not only a free library and art gallery but also colonnades and various fine things, with 250 shops. These are, I believe, more in number than those in the chief shopping streets, and if they were to succeed it would be at the expense and ruin of a good many of the shopkeepers. If they did not succeed the corporation would not get its rent, and the loss from the experiment would fall on the ratepayers. The scheme of a committee of the corporation, together with other schemes, had a long discussion given to them at the last meeting of the council. In the end the matter was referred to the committee to see if it could not devise some plan of getting revenue, in addition to providing a temple of literature and art.

Feb. 28th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Health Committee; Cerebro-spinal Meningitis; Insanitary Houses.

At a meeting of the health committee held on Feb. 21st allusion was made to the fatal case of "spotted fever" which had occurred in the city. Dr. E. W. Hope (the medical officer of health), in reply to the chairman, said that there was absolutely no need for alarm. Cerebro-spinal meningitis was a disease which rarely appeared, and when it did appear it caused a great deal of attention out of all proportion to its gravity. Week after week and month after month there were deaths from measles and whooping-cough outnumbering this disease by 100 to 1, but the public were so familiar with those diseases that they unfortunately attracted little attention. Dr. Hope said that provision had been made in Liverpool for the isolation of any doubtful cases.—The health committee will on March 6th submit to the city council recommendations to apply the Infectious Disease (Notification) Act, 1889, to cerebro-spinal meningitis for six months as an experiment and permanently to anthrax.—A corporation scheme for the demolition of insanitary houses in the Burlington-street and Brassey-street areas at a cost of £23,250 was the subject of a Local Government Board inquiry in Liverpool last week.

University of Liverpool: Current Topics.

The University of Aberdeen is about to confer the honorary degree of LL.D. upon Professor J. Campbell-Brown, the chief of the department of chemistry at the University of Liverpool. Dr. Campbell-Brown is one of the oldest members of the University staff of professors.—Two more expeditions are to be despatched by the School of Tropical Medicine to West Africa in the course of a few months—one to further investigate the causes of sleeping sickness, and the other to investigate and to report upon blackwater fever.—In view of the Government grant of £1050 to the University, of which £350 is to be apportioned to the expenses of research work, it is interesting to note that there are at present close upon 150 post-graduate students engaged in research work in various departments of the University. The amount of research work at the University is very great and the expenses are considerable, so that this Treasury grant is particularly welcome.

The Royal Southern Hospital: The Tropical Diseases Ward.

The annual meeting of the subscribers to the Royal Southern Hospital took place on Feb. 11th at the town hall under the presidency of the Lord Mayor. An interesting feature of the report was the allusion to the value of the ward set apart for the treatment of patients suffering from tropical diseases. 120 cases were treated in the ward last year. Three cases terminated fatally—viz., one of malarial fever, one of sprue, and one of dysentery with abscess of the liver. The diseases treated were: malarial fever, beri-beri,

dysentery, ankylostomiasis, leprosy, and scurvy. The nationalities included 69 English, 13 Irish, eight Scotch, four Welsh, nine Indians, four Chinese, three negroes from West Africa, two Americans, two French, two Norwegians, one German, one Greek, one Dane, and one from St. Helena. Several ladies from the Colonial Office were trained for special tropical work as nurses. A considerable number of students attended the course of instruction at the School for Tropical Medicine, a large proportion of whom obtained the diploma in tropical medicine after examination at the University of Liverpool. The ward was of the greatest possible benefit to those treated in it and deserved all the support that could be given to it by ship-owners and others interested in the port of Liverpool and especially by those engaged in foreign trade. The income of the general hospital was a little over £9000, whilst the expenditure reached £11,612. The x ray department has been enlarged and a new out-patient department is in contemplation. An appeal is also made for a "Samaritan" fund for the supply of surgical appliances to the indigent poor which is greatly needed. The total number of in-patients treated during the year was 2502. The out-patients numbered 12,075.

Vaccination Statistics for Liverpool and Toxteth Park.

During the year 1905, 5118 and 4091 births were registered in the parish of Liverpool and Toxteth Park district respectively. 4404 (Liverpool) and 3175 (Toxteth Park) children were successfully vaccinated. 10 (Liverpool) and 14 (Toxteth Park) were found insusceptible of vaccination. One conscientious objection was sustained in Liverpool and six in Toxteth Park. 560 (Liverpool) and 427 (Toxteth Park) children died before being vaccinated. None (Liverpool) and 55 (Toxteth Park) vaccinations were postponed by medical certificate. 84 (Liverpool) and six (Toxteth Park) cases were removed to districts the vaccination officers of which had been duly apprised. 59 (Liverpool) and 406 (Toxteth Park) cases were removed to places unknown and two were not accounted for in Toxteth Park. 86 per cent. of the children were vaccinated (on the births) in Liverpool; whilst if deaths before vaccination, removals, &c., are deducted, the percentage of vaccinations in Liverpool reached the extraordinary average of 97. Toxteth Park percentages are not quite so high, but are highly creditable.

Hospital Sunday Fund.

The treasurer of the Hospital Sunday Fund has reported that the amounts remitted to him to date are £8541, being £787 over and above the amount contributed last year.

A Visit to the R.M.S. "Lanfranc": A Miniature Hospital.

The new twin-screw Royal Mail steamer *Lanfranc* of the Booth Steamship Company, which has been built for service between Liverpool and Spanish, Portuguese, and South American ports, lay in mid-stream in the river Mersey on Saturday, Feb. 16th, for inspection, prior to sailing on Feb. 18th on her maiden voyage, and afforded much pleasure and wonder to her numerous visitors. Her principal dimensions are: length, 434 feet; breadth, 52 feet 3 inches; gross tonnage, 6300 tons; her engines will develop about 5000 indicated horse power, and her sea speed is designed to be about 14½ knots. She possesses a promenade deck, a shelter deck, an upper deck, and a main deck. Her sanitary arrangements are all that can be desired. At the after end of the shelter deck is a large lavatory for gentlemen. The ladies' lavatory on the same deck is situated on the port side and contains a novel feature on shipboard in the shape of a sitz bath, to which hot and cold fresh water is supplied. Another feature of interest is the large number of shower baths in both lavatories. The hospital block for first-class passengers deserves particular notice; there are three wards, with special hospital cots in each, two bath-rooms, and a dispensary, all adjoining the medical officer's comfortable apartments. This hospital contains eight cots. The first-class dining saloon is a large and handsome room, with seats for over 200 persons. There are 18 tables, each seating 12 passengers. Fresh air is brought down by two large ventilators at the forward end of the saloon and powerful electric fans insure a good circulation of air under the trying conditions which obtain in the tropics. All the berths are supplied with electric fans. The after end of the ship is fitted up for 350 steerage passengers. The large lavatories and the bulk of the sleeping accommodation are on the upper deck. An effort has been made to combine essential privacy with the free ventilation which a voyage

centres of population in Italy, I visited the slaughter-house of the small town of Vercelli. This latter institution compared very favourably with that of the capital of Lombardy. Instead of a population of 520,000, Vercelli has only 17,900 inhabitants, according to the last census. The abattoir is on the outskirts and fairly well isolated. The special building for slaughtering pigs is quite a modern structure. The floor is water-tight and convex, so that there is a drain on each side. Then there are overhead rails known as the "omnibus" system, so that the carcasses, suspended to little wheels, can be easily pushed in different directions and need not be carried. For cleaning the intestines there are good stone troughs and a large boiler provides a constant supply of hot water. The place for preparing tripe is well apart from other buildings and the floor is carefully cemented and drained. But there is not much tripe prepared here, as a large portion is sold to a dealer who takes it away to some distance from the town. In every part of the Vercelli abattoirs where there is killing the buildings are lofty and open from floor to roof; there is no upper storey. The floor, which is on a level with the earth, is rendered water-tight. Above, under the roof and on both sides of the building, there are permanent openings. These are not windows that can be closed but apertures which cause a through draught which cannot cease day or night. Altogether, considering that Vercelli is but a small town and its financial means must be limited, this slaughter-house was very creditable. At Milan it is recognised that the abattoir is unworthy of the town and I was assured by the mayor and others concerned that a new and model abattoir would be built at no very distant date. Indeed, throughout Italy the desire for really sanitary abattoirs is growing on all sides. This feeling is likely to increase as it becomes more and more evident that, with good management, these institutions can be made to pay financially.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Poor-law Medical Officers and the Chairman of the Prestwich Guardians.

AT a recent meeting of the Prestwich guardians the chairman made some general and sweeping remarks as to the inattention and neglect of duty on the part of Poor-law medical officers. This naturally excited some notice and at a meeting held on Feb. 21st a letter was read from the medical officers of the union calling attention to the strictures passed by the chairman at the last meeting on the manner in which district medical officers performed their duties and asking that the chairman should state definitely any charge that he might have against them. The result was that the reverend chairman practically withdrew his statements, which were not limited in any way, and would naturally be applied to the medical officers of the Prestwich union before going farther afield. He is reported to have said: "I have to state, in answer to the letter of the doctors, that these strictures do not apply to this union or to any of our present staff or district medical officers. When I illustrated my case for the acceptance of the resolution I proposed, I simply illustrated it by occurrences that have taken place, not necessarily in our union, and therefore I say that the honour of our medical officers has not been impugned and an unfair aspersion has not been cast upon the character of the work done." The strictures thrown broadcast were severe and calculated to injure specially the medical officers of the Prestwich union. Yet there is no word of regret. If the reverend chairman did not intend his strictures to apply to the Prestwich union he should have said so at first. The motion which he had proposed was to the effect that the guardians should be informed of all sick cases. In all probability the medical officers would be well pleased if the guardians visited their sick cases, but of course it should be done solely with the wish to coöperate in benevolent work. However, the medical officers did not lack defenders on the board, and if the disclaimer overtakes the charge no great harm will have been done.

Isolation Hospital at Hollingworth Lake.

An isolation hospital for the joint authorities of Littleborough, Milnrow, and Wardle has been built in the neighbourhood of Hollingworth Lake and was opened on Feb. 16th.

It contains fever wards and an administrative block. The cost of the buildings has been £9130.

Some Hospitals and Infirmarys.

It is a pleasure to hear of a hospital free from debt, even though some philanthropists consider that the weight of a debt hanging on the neck of the committee is an incentive to their energy in the efforts that have to be made to increase old subscriptions and to get new ones. The Royal Lancaster Infirmary was stated to be in this happy state at the annual meeting on Feb. 19th. The income had increased by £104 or more in the year, and was nearly £3500. The expenditure had, as is usual, also increased but only to the amount of £71. At the end of 1905 there was an adverse balance which was wiped out by Lord Ashton, so that for the first time since the new institution had been opened there was a credit balance. There had been a considerable increase in the work of the hospital.—At the annual meeting of the Victoria Hospital, Burnley, it was shown that there was "very urgent need for a substantial extension of the hospital, and that at least £20,000 would be required." The matter is to be brought before a town's meeting, but if a few more of the wealthy residents will follow the lead of the chairman of the governors and give £2000 each, the town's meeting will no doubt approve of the scheme.—The report of the Oldham Infirmary was somewhat depressing. It was stated at the annual meeting on Feb. 18th that the year's working showed a deficit of £869, although the Hospital Saturday collections were the largest on record. The governors wished to say to the people of Oldham and district that if they wanted the infirmary kept up to its present standard they must find at least £1000 a year more than they were now doing. Taking one year with another they required £7250 to keep free from debt. Extensions and furnishing, with incidental expenses, had cost £21,156, and the amount raised was £19,590. The chairman was not dismayed and said "it only needed to be properly put before the people of Oldham, and especially the industrial people, to induce them to recognise that the infirmary had a claim upon them and ought not to be allowed to go into debt." It is to be hoped that this appeal will obtain the desired income.—The Stockport Infirmary likewise shows a deficiency on the year's working; in this case of £373. The income had been £5042 and the expenditure £5415. The accommodation was increased some time ago by 27 beds and the income has never covered the expenditure, the yearly deficit for the last seven years having been £600. To pay the way legacies have been encroached upon. It seems that a small increase of £20 has been made in the subscriptions and there was some increase in the workpeople's contributions which amounted to £1119. The work, of course, increases whatever the income may be. The mayor said that the expenditure worked out at about 1s. 1½ per head of the population and in a wealthy town like Stockport a much larger sum should be raised without difficulty. But philanthropists are prone to forget that there are many other sums of 1s. 1½ or more that must also be raised. Still, in spite of deficits, they look forward in Stockport to the extension of the out-patient department and the provision of a nurses' home.—The story told at the meeting of the Northern—formerly the Clinical—Hospital in Orcheston Hill, road was, like most of the others, a good deal chequered. Last year was the hospital's jubilee and the committee set itself the task of raising £25,000 to pay the debt to the bank, to equip the hospital fully, and to provide a sufficient endowment to put the finances on a more satisfactory basis. At the close of the year £18,092 had been raised but at the meeting the chairman was able to announce that the whole of the £25,000 had been obtained. Still, though in a much better position than it was, the deficiency of revenue, £970, added to previous deficits, amounted to £4000, which would have to be repaid to the bank out of the £25,000; and if the balance were funded, as the treasurer said, it would only bring in about £800 to meet an annual deficiency of nearly £1000. The foregoing accounts may probably be taken as representative of the state of hospital finances all over the country. All more or less in difficulties, some with their heads just above water, while others are nearly submerged. But notwithstanding the work which they are called on to do is ever increasing.

The Infirmary Site.

One of Lytton's novels bears the title "What Will He Do With It," and the people of Manchester do not as yet seem to

certainly prevent in future medical men from entering into a strike.

Settlements for Tuberculous Patients in German South-West Africa.

A committee was formed some time ago for the purpose of settling tuberculous patients in German South-West Africa. As the rising of the natives in this colony has now ceased the committee, which includes medical men as well as other persons interested in colonial matters, has again drawn attention to the advantages of a settlement in South-West Africa. The matter was recently discussed before a meeting of the Berlin Society for Social Medicine. Professor Senator spoke in favour of the plans of the committee, saying that the sanatoriums at home received only patients in the first stage of the disease while it was still curable. A great many tuberculous patients were unable to obtain admission to the sanatoriums either from want of room or from the cases being unsuitable for sanatorium treatment. It was by this class of patients that tuberculosis was spread and benefit would accrue from their removal to a country like South-West Africa, which offered them the best possible chance of recovery. The insurance institutions under the workmen's insurance laws should therefore assist tuberculous workmen desiring to emigrate, as they were authorised by law to do. Dr. Merret said that the climate of the colony was very good for tuberculous patients, but that cardiac diseases were frequent because of the elevation of the country, the capital, Windhoek, being situated about 1800 metres above sea level. No patients in an advanced stage should proceed to the colony, but only those who were still able to work and to earn their livelihood there.

Medical Women in Germany.

Since 1899 women have been admitted in Germany to the State examination in medicine and may therefore become duly qualified practitioners. The universities of the individual States of Germany are, however, by no means uniform in the position which they take up with respect to women medical students. The University of Jena, for instance, does not admit women at all. In all the Prussian universities and in the universities of Strasbourg (Alsace-Lorraine), Rostock (Mecklenburg-Schwerin), and Giessen (Hesse) women are not allowed to matriculate but are admitted only as guests (*Hospitantinnen*) and may attend a lecture or take part in a course only by the special permission of the individual professor or *privat-docent*. Some of the leading professors in the University of Berlin, such as Professor Waldeyer and Professor von Bergmann, decline altogether to admit women. The universities of Leipzig (Saxony), Tübingen (Württemberg), Freiburg and Heidelberg (Baden), and also the three Bavarian universities in Munich, Erlangen, and Würzburg, are the most liberal, as they allow women medical students to matriculate under the same conditions as men. These concessions, however, are available only for German women, whilst for foreigners special provisions exist. As a few years ago women were excluded from nearly all the German universities, the progress made by them is considerable and it is very likely that the restrictions which are still in force at some universities will soon disappear and that women will be treated everywhere on an equal footing with the male students. Notwithstanding the facilities given to women at a good many of the German universities the number of female medical students is relatively small, their total number being, according to information collected by Dr. J. Schwalbe, the editor of the *Deutsche Medizinische Wochenschrift*, only 300, as compared with 7219 male students, equal to 4 per cent. Of these 300 ladies a good many are foreigners, so that a considerable increase of the number of medical women practising in Germany is not very likely to occur. In the beginning of the year 1906 there were only 60 fully qualified medical women registered in Germany.

Feb. 23b.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Report on Cancer.

THE cancer committee of the Royal Hungarian Medical Society has drawn up a report giving the results of last year's investigations, the chief points of it being as follows. The year's investigations show that cancer is not associated with peculiarities of diet, climate, or mode of life, thereby

confirming the conclusions announced a year ago. The experiments yielded very interesting results, including a demonstration of the possibility of perpetuating malignant new growths through successive generations of mice in such a way that the cancer cells appeared to be gifted with the power of multiplication, for the malignancy of cancer and a clue to the solution of its mystery appear to lie in this abnormal proliferation and reproduction. The property of perpetual multiplication definitely separated cancer from known infective diseases. Much experimental work had been done in treating malignant growths but attempts at immunising with serums did not justify the claims sometimes made for them, although in some cases they deprived the cells of the power of growth. The action of radium and radio-active solutions had been carefully studied. It was undeniable that these sometimes influenced the growth and development of normal and tumour tissues, but there was no evidence yet obtained that radium emanations had any selective or special action on tumour tissues.

Prevalence of Influenza.

Influenza is more prevalent in Hungary this year than it has been for a long time past, and it is a striking feature that influenza bacilli are present in a great many cases of other catarrhal affections. This has been particularly the case during the present winter season. The occurrence of the disease seems to be due either to an increase of virulence or to a lowering of the relative vitality of the patient, for the bacilli may be found even in persons not presenting primary symptoms. Occasionally, perhaps, an association of different bacilli makes inoculation more easy. It is impossible to decide, however, whether there may not be a number of other bacteria grouped as influenza bacilli because of their morphological characteristics, yet without possessing true virulence. It is not impossible that once the disease has begun and passed through several persons the bacilli gain in virulence and so become capable of affecting hitherto immune individuals.

The Pathology of Sciatica.

Dr. Verebely finds that in the literature on the subject of the pathological appearances observed in sciatica there is a general agreement as to the existence of a swelling of the nerves. Some observers, especially in England, have thought that they discovered uric acid in the neurilemma. It seems very probable, however, that these deposits were secondary. In most reported cases the nerve was found to be redder, more voluminous, and less dense than normal. In one case the sheath was found to be loosened, with some dilated veins around the nerve, but there was no sclerosis of the nervous tissue. In another case it was thought that more fat was present in the nerve than normal. Out of the 11 cases reported three were negative pathologically and the eight that were positive showed an increase in size, though without much nerve change.

The Mental Disturbances of Heart Disease.

Dr. Mahler recently read an interesting paper on this subject at a country medical meeting. The paper consisted chiefly of the clinical histories of 13 cases observed by him in which these conditions were associated. He first classified the cases under two groups—(1) mild forms, which did not produce severe mental symptoms; and (2) aggravated forms of organic disease, where the mental infirmities recorded were inferior to the physical. In the severer forms the treatment must be directed chiefly to the physical condition while in the milder forms both may be treated coincidentally. Etiologically he divided the condition into four classes: (1) local conditions, such as palpitation, tachycardia, &c.; (2) pains around and within the heart, such as angina pectoris; (3) secondary lesions of the brain; and (4) disturbances of the circulation.

Feb. 23d.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Changing the Medical Law in the Province of Quebec.

A BILL of much interest to the medical profession in the province of Quebec has just been introduced into the Quebec Legislature. It is proposed by it to extend the course of medical study from four to five years, to define better what constitutes the illegal practice of medicine, and to define better the powers of the College of Physicians and Surgeons.

the river Lagan, Belmont, Knock, and those portions of the city over 100 feet above sea-level obtain their water exclusively from the Mourne source. Of course, when there is a surplus from the Silent Valley (Newcastle) it is put into consumption in the Woodburn area, the two being mixed in about equal proportions. The two houses from which were taken the samples commented on by Professor Symmers in his report are both in the area supplied from the Woodburn and the Mourne districts.

Cerebro spinal Fever in Belfast.

There can be no question that the epidemic of cerebro-spinal fever so prevalent in Belfast presents many difficult problems for solution. 1. Is it in any ordinary sense an infectious fever? (a) No cases have so far been recognised in which direct infection from another person ill of the disease could be scientifically established. (b) The outbreaks are at different points of the city with no history of infection. (c) All the methods adopted—that is, isolation of patients in the fever hospital and disinfection—have failed completely in arresting the disease. (d) At the various hospitals where cases have been treated, no nurse, medical officer, or attendant has been attacked, a state of matters altogether different from that which would occur had cases of typhus fever or small-pox (without vaccination) or scarlet fever been introduced in the same way. (e) Dublin is only a three hours' journey from Belfast with a constant interchange of people: why is Dublin escaping and Belfast suffering so terribly with this strange disease? 2. The necropsies so far would support the view that the disease was swallowed, just as typhoid fever generally is, rather than that the disease germs on the German view entered the brain centres through the ethmoid from the nose. 3. May it not be that the disease germs (the meningococci) are always with us but that the peculiar atmospheric conditions have done one of two things: made patients, through catching cold, influenza, &c., more vulnerable (increased susceptibility); or has the strange, cold, variable weather made the bacilli more infective? 4. It is remarkable that all the adults attacked (and a young man of the better classes died this week at one of the Belfast suburbs called the Knock) have been almost entirely men. Why, so far, are adult women escaping? We are groping in the dark so far as to the nature of this peculiar disease, but light will come.

Feb. 26th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Prevention of Tuberculosis.

A MEETING of the International Society for the Prevention of Tuberculosis (*Société Internationale contre la Tuberculose*) was held on Feb. 5th when various resolutions were adopted. The first discussion arose in connexion with a communication by M. Glaisse on the subject of the sanitation of the small court-yards (*courrettes*) which may be in connexion with high buildings. The atmosphere of these places was liable to become septic, fetid, and stagnant. It might be purified by filtering the air through a spray of water and free ventilation sufficient for the prevention of bad smells could be provided if some slight modifications were made in the existing arrangements. M. Bernheim said that the best remedy for the evils complained of was to take care that these places were not too much closed in. M. Juillerat suggested that dispensary medical officers should coöperate with the compilers of the sanitary register of houses (*casier sanitaire des maisons*) by giving information as to the houses where the tuberculous dispensary patients resided. Dr. Georges Petit and Dr. Thézard communicated a paper on the use of asparagin in medicine. They had been making experiments with nutrient media for the preparation of bouillon intended for the cultivation of microbes, and in the course of this inquiry it occurred to them that asparagin associated with phosphoric acid and with various phosphates might be useful therapeutically. Clinical observations subsequently showed that asparagin promoted assimilation and might be of great service in the treatment of tuberculosis, anaemia, and various cachexias. Patients who had for a long time suffered from total loss of appetite were by this means enabled to take their food well and consequently increased in weight. Asparagin is given in doses of one or two grammes daily before the two principal meals; it is taken in alkaline or

acid solutions according to the state of the patient's stomach.

Lumbar Puncture in the Complications of Suppurative Otitis.

At a meeting of the Society of Surgery held on Feb. 6th M. Leguen read an account of a case which had been under the care of M. Lapointe. The patient had suffered from suppurative in the middle ear for some years but shortly before his entry into the hospital had complained of headache, feverishness, and stiffness of the neck. M. Lapointe opened the antrum and the tympanum, enlarged an opening which he found in the upper wall of the tympanum, and evacuated a subdural abscess. The dura mater itself was intact. Nevertheless M. Lapointe, struck by the extreme polynucleosis which a lumbar puncture revealed, resolved to open the dura mater. Another abscess came into view which was drained and the patient made an uneventful recovery.

A Drug Eruption.

M. Bergé read this case before the Hospitals Medical Society at a meeting held on Feb. 22nd. The patient was suffering from acute bronchitis and after taking a medicine containing opium developed a typical scarlatiniform rash which terminated in an intense desquamation. The appearance of the eruption coincided with the disappearance of the bronchial catarrh. During the night, however, the patient was troubled again with pulmonary symptoms and took some more of the medicine as he found that it always gave him great relief. The rash appeared for the second time.

"Le Théâtre Antisérielien."

M. G. Le Vallier and M. P. Nigel have recently organised a quite novel series of evening entertainments with a view to support and to carry on the movement for the prevention of venereal diseases. The programme will include: (1) a dramatic performance in two acts—*L'Immolee*—founded on a case of sterility due to syphilis; and (2) a demonstration of the effects of syphilis exhibited by lantern pictures, according to the most recent practical observations. The entertainments in question (*soirées populaires*) commenced on Feb. 22nd at No. 133, Rue Saint Denis, and the management provide members of the medical profession with free admission and fauteuils on presentation of their cards.

Feb. 25th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Syphilis Antitoxin in the Cerebro-spinal Fluid.

Professor Wassermann and Dr. Plant, writing to the *Deutsche Medizinische Wochenschrift*, announce that they have discovered an "antistoff" of syphilis in the cerebro-spinal fluid of patients suffering from dementia paralytica. Their experiments were based on a discovery made by Professor Wassermann—namely, that the hæmolysis of red corpuscles is hindered when an "antistoff" is mixed with a fluid containing a toxin. In experiments with 41 samples of cerebro-spinal fluid the hæmolysis ceased in 32 when they were mixed with an extract of syphilitic organs. Neither the cerebro-spinal fluid alone nor the syphilitic extract alone hindered the hæmolysis, and the effect was not produced when the fluid was brought in contact with tissues obtained from a person free from syphilis. It is therefore proved that anti-syphilitic substances are formed in the cerebro-spinal fluid of the majority of cases of dementia paralytica—in other words, it is proved that these patients have formerly suffered from syphilis. Professor Wassermann and Dr. Plant, however, decline to say that the question whether this disease is really caused by syphilis is decided by these experiments.

Sick Clubs and their Medical Officers.

The medical officers of a sick club at Cologne had on the advice of the medical union resigned their appointments without giving notice of their intention, so that the members of the club were for some time left without medical attendance. The club accordingly brought an action for damages against five of the medical men and the decision of the court was to the effect that their course being illegal they were bound to indemnify the club. The club now demands not less than 100,000 marks (£5000) from the defendants but another court will have to decide whether this sum really represents the loss which the club has sustained by the sudden resignation of the medical men. This action will

association and the new rules were sent to England to the council and a cable was received which was supposed to sanction the arrangement. Accordingly the annual meetings of the two societies were held conjointly on Jan. 4th and the following new office-bearers were elected under the new rules: President: Professor Harry B. Allen. Vice-Presidents: Mr. G. A. Syme and Mr. George Cuscaden. Treasurer: Dr. O. H. Mollison. Honorary secretary: Dr. L. J. Balfour. Librarians: Mr. A. W. F. Noyes and Dr. H. D. Stephens. Council: Dr. W. R. Boyd, Dr. G. T. Howard, Dr. Felix Meyer, Dr. W. Moore, Mr. F. W. W. Morton, Mr. W. Beattie Smith, Dr. J. F. Wilkinson, and Dr. A. J. Wood. All of these, except the President and Vice-Presidents, were the officers of the Medical Society of Victoria. Professor Allen has taken the leading part in the negotiations which led to the amalgamation and in drafting the scheme for union. Mr. Syme was president of the Victorian branch in 1900 and resigned with all its other members of the council and many of the branch when the branch did not ratify by a three-fourths majority the action of the council in expelling a member. Mr. Cuscaden was the retiring president of the branch and the only member of the late council of the branch re-elected.

Hospital Affairs.

The new Royal Alexandra Hospital for Children, Sydney, was officially opened by his Excellency the State Governor on Dec. 12th, 1906. It is situated at Camperdown, and will accommodate 175 children when complete. It is claimed to be one of the finest, if not the finest, children's hospital in the world. Immediately connected with the receiving and examination rooms there is a special pavilion containing four separate small wards of eight beds each, in which patients will be placed for the necessary few days following their admission, to insure their having no latent infectious disease, before their being transferred to the main pavilions, thus preventing the risk of infecting the larger wards should any such contingency arise. There are two main medical and surgical pavilions, both of which, as well as the special pavilion, are flanked by very spacious verandahs and balconies, capable of containing a row of cots and so of being utilised for sleeping out, for which further provision has been made by wide doorways from the wards to each between every pair of cots, so that they may be wheeled out.—It has been once more proposed to remove the Melbourne Hospital from its present site to one farther from the centre of the city. The proposal was first made 20 years ago but the site then suggested, the horse and pig market near the university, could not be obtained. The same site is now once more suggested. It is further proposed to remove the town hall to the present site of the hospital. The idea is that the sale of the present town hall site would furnish sufficient funds to purchase the hospital site and to rebuild there, and the purchase money of the hospital site would enable the hospital authorities to rebuild the institution in the market, and the Government is expected to grant a new site farther out still for the market. Opinions are divided as to the advisability of the proposals. The decision of the whole question will rest with the city council.—The Women's Hospital, Melbourne, has at last decided to undertake the care of women not admitted to the institution and to provide medical attendance and nursing to indigent obstetric cases in their own homes within a certain area.—Some time ago Mr. T. Scott published statements to the effect that the Warrnambool (Victoria) Hospital was imposed upon by persons who could afford to pay for private medical attendance. The committee invited Mr. Scott to prove his statements and placed the books of the hospital at his disposal. He accepted the challenge and recently wrote to the committee saying that after going through the books he found the names of 40 persons who, in his opinion, were not entitled to admission on the ground of inability to pay private fees. The committee, however, held that the cases referred to, with one exception, admitted in error, were suitable cases for admission.—At a recent inquest on a patient at the Melbourne Hospital a question was raised of some importance to medical men. The patient was admitted with septicaemia after miscarriage. The resident surgeon gave a certificate of death and the body was on the way to the cemetery when the burial was stopped by order of the coroner, who directed the making of a necropsy which showed that death was due to peritonitis and septicaemia, but there was nothing to indicate that anything of a criminal nature had occurred. The coroner,

however, said that he was of opinion that abortion had been illegally procured and if the case had been differently managed by the hospital authorities the unknown author of the act might have been discovered. In every case of the kind the police should receive full information from the medical man in attendance.

Supervision of Private Hospitals.

The Select Committee of the Legislative Council of New South Wales appointed to inquire into the Private Hospital Bill has taken a good deal of evidence which points to the necessity for legislation on the subject. It was stated that 450 lying-in homes existed in the State and that many were in charge of ignorant, incapable, and often drunken women. Cases were cited where a woman had a patient waiting for confinement and the only room available for the lying-in was occupied by a patient with typhoid fever. In another instance a nurse had a case of erysipelas in the home and was at the same time attending four maternity patients in the town. 85 per cent. of the parish hospitals were lying-in homes and malpractice was rife in them.

Training of Mentally Defective Children.

At the last meeting of the Board of Public Health of Victoria the question of establishing a special training school for mentally defective children was considered. The chairman, Dr. Norris, observed that while everyone would recognise the wisdom of such a proposal he thought that it should be accompanied by some legislative enactment to prevent mentally deficient persons who received the benefit of such work, from marrying. Special treatment, while not abolishing the deficiency, might so improve the condition of the subjects that they might find it easier to marry and to transmit their hereditary deficiencies. The Board agreed with this view and the chairman was instructed to communicate it to the Chief Secretary.

A Retreat for Inebriates.

The Government of Victoria has authorised the purchase of an estate at Lava, with an area of 600 acres, for the purpose of establishing an inebriate retreat.

Deplorable Accident with a Pistol.

Dr. Andrew Davidson, medical superintendent of the Callan Park Asylum for the Insane, will receive great sympathy in peculiar circumstances. A patient had somehow procured a revolver and Dr. Davidson sent for the plumber to the institution to force the locks of the patient's boxes. He did so, and found in one of them a revolver which he handed to Dr. Davidson. Almost immediately the revolver went off and the plumber was shot fatally.

Adulteration of Milk and Butter.

Heavy fines were recently imposed in the central police court, Sydney, for adulteration of milk. There were 11 charges brought against one company trading in several suburbs. The analyses showed that the amount of added water varied from 6.75 to 21 per cent. The defendant had been convicted previously and his employers had been fined on 47 occasions.—The city analyst at Perth, Western Australia, has published a report on food-supply—chiefly milk, butter, and tinned foods. The butter he found much adulterated, oleo-margarine, fats, and oils being skillfully combined in it, and preservatives freely used. Tinned foods were invariably bad or inferior from decomposition.

Prosecution of the Vendor of an Alleged Cure for Consumption.

An agent was committed for trial at the Sydney police court on Jan. 8th for obtaining money by false pretences. He sold an alleged cure for consumption called "Tuberculozque." An analysis showed that the preparation, which was sold in two bottles, No. 1 and No. 2, consisted of a dilute solution of bromide of potassium in (1) and a dilute solution of a salt of iron in (2). The agent alleged that the preparation contained copper.

Dinner to Dr. R. R. Stawell.

On Jan. 15th Dr. R. R. Stawell, physician to the Children's Hospital and to out-patients at the Melbourne Hospital, was entertained at dinner by a large and representative gathering of his medical brethren prior to his departure for a visit to Europe. Sir Thomas FitzGerald presided and proposed Dr. Stawell's health, the toast being supported by Mr. M. U. O'Sullivan and Mr. G. A. Syme. Dr. Stawell, in replying, after some personal reminiscences in which he acknowledged the help and loyalty of his hospital colleagues, referred to

as to discipline, as well as to permit the College to make pecuniary grants to medical societies.

A Hygienic Institute for London, Ontario.

The Ontario Government has decided to make a grant of \$50,000 to the Medical Faculty of the Western University at London, Ontario, for the purpose of a hygienic institute in that city. A sum of \$5000 per annum will also be given for five years for its maintenance. As it is the policy of the present Government to encourage medical education in other sections of the province of Ontario than that immediately associated with the Provincial University at Toronto, this procedure is therefore in accordance with that policy. The city of London will give a free site for the institution and will also devote a sum equalling that of the Government to the erection of the building. The city will also erect a new contagious diseases hospital to be worked in connexion with the institute. The latter will be a great benefit to the medical men practising in Western Ontario.

Ontario Medical Council and the Canadian Press Association.

The Canadian Press Association has just finished its annual sitting in Toronto. As during the session of last year, this association has placed itself on record as being antagonistic to the Ontario Medical Council as well as to all similar bodies, which it claims are conducted by irresponsible men. The reason for the antagonism of the Press Association is not far to seek. Recently the Ontario Medical Council had before it the case of a practitioner who advertised a remedy alleged to cure *la grippe* and other bodily ills. He was found guilty of misconduct from a professional aspect and his name was ordered to be expunged from the Ontario Register. The matter was, however, taken into the courts and the name was ordered to be replaced on the Register. The disinclination of practitioners generally to advertise does not, of course, meet with the approval of the Press Association. Their action, therefore, smacks decidedly of interestedness.

New Nurses' Home Opened in Toronto.

A fine new nurses' home for the nurses of the Sick Children's Hospital, Toronto, has just been completed and opened with appropriate ceremonies. It was the gift of Mr. John Ross Robertson, the proprietor of the *Evening Telegram*, Toronto, and cost \$130,000. Mr. Ross Robertson has done a great deal for this institution. He originally gave a large sum of money for the hospital and then presented to the institution the Lakeside Home for Sick Children on Toronto Island, which is said to be the largest home or hospital for summer residence in the world. The hospital has cared for 75,000 children since the day of its establishment.

Gift to the University of Toronto on the Nobel Plan.

A prospector at Sudbury, Ontario, recently died and left to the University of Toronto \$10,000 of Ontario Government bonds, the interest of which is to be used in giving small prizes similar to the Nobel prizes. Two of the clauses of the will are of interest to the medical profession as well as to others in Canada. A prize is to be given for any important discovery, invention, or development by any Canadian which will lessen the dangers and loss of life in connexion with the use of electricity in supplying power and light, and another for any marked public distinction achieved by any Canadian in scientific research in any useful and practical line.

The Verdun Hospital, Quebec.

The annual meeting of the board of management of the Protestant Hospital for the Insane at Verdun, province of Quebec, was held in Montreal a few days ago, when Dr. Burgess, the medical superintendent, presented the annual report. This stated that 503 patients were in residence in the hospital on Jan. 1st, 1906. During the year 151 patients were admitted (87 men and 64 women), 110 were discharged, 34 died, and one escaped. At the close of the year there were 507 in residence. It cost \$114,860 to carry on the institution during the year. The receipts were \$112,182.

"Osteopaths" in Ontario.

The province of Ontario possesses a few of those citizens of the United States who now and again come into Canada for the purpose of exploiting some peculiar methods in the practice of quackery. Of these there is a body known as the "osteopaths," who now seek incorporation in the College of Physicians and Surgeons of Ontario, practically on the same basis as the homeopaths—that is to say, they desire representation on the Ontario Medical Council and licence and power to conduct their own examinations and to confer

their own degrees. It is a little presumptuous but quacks are never deficient in that qualification.

Notes from Winnipeg, Manitoba.

The *Western Canada Medical Journal* has appeared at Winnipeg. Two numbers have been issued. Dr. W. Osler contributed the opening article to the first, and the opening article of the second is from the pen of a layman on "The Effect of Sunlight upon White Skin." It is a decidedly interesting and able article.—The College of Physicians and Surgeons of Manitoba is having a plebiscite taken on the subject of reciprocity with the other provinces of the Dominion.—The Manitoba Government has promised to grant \$25,000 for the purposes of a consumption sanatorium when the committee in charge of the matter has raised \$50,000. The sum of \$15,000 has already been raised.—The Manitoba Medical College at Winnipeg has entered its new building. There are 140 students in attendance, 35 being in their first year.—The following are the officers of the Winnipeg Medical Society for the current year: President, Dr. E. W. Montgomery; Vice-President, Dr. J. R. Davidson; Second Vice-President, Dr. N. J. McLean; secretary-treasurer, Dr. O. H. Vrooman; and councillors, Dr. McKenty, Dr. H. MacKay, Dr. H. P. H. Galloway, and Dr. J. O. Todd.

Ontario Medical Council.

The following medical practitioners in the province of Ontario will constitute the Ontario Medical Council for the next four years:—Elected by acclamation: Dr. J. L. Bray, Chatham; Dr. J. McArthur, London; Dr. J. A. Robertson, Stratford; Dr. J. Henry, Orangeville; Mr. P. Stuart, Milton; Dr. S. H. Glasgow, Welland; Mr. E. E. King, Toronto; Dr. H. Bascom, Uxbridge; Dr. S. O. Hillier, Bowmanville; Dr. A. F. MacColl, Belleville; Dr. W. Spankie, Wolfe Island; Dr. J. W. Lane, Mallorytown; and Dr. M. O. Klotz, Ottawa. By election: Dr. J. H. Cormack, St. Thomas; Dr. T. W. Vardon, Galt; Dr. R. J. Gibson, Sault, Ste. Marie; and Dr. J. S. Hart, Toronto. The homeopathic representatives are Dr. G. Henderson, Strathroy; Dr. L. Luton, St. Thomas; Dr. E. T. Adams, Toronto; and Dr. C. E. Jarvis, Toronto.

Feb. 18th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Bubonic Plague.

AFTER a long interval two fresh cases of plague have occurred in Sydney. Both the patients were employed near the harbour and are mild cases. Three rats infected with plague were caught in the neighbourhood of one of the cases. A case has also occurred in Queensland.

Prevalence of Disease in Victoria.

At the last meeting of the Board of Public Health of Victoria the chairman, Dr. W. P. Norris, gave a review of some statistics as to the prevalence of certain diseases. During the fortnight ending Dec. 29th, 1906, there were 39 cases of typhoid fever, 31 cases of diphtheria, and three of scarlet fever reported. The average for the corresponding period of the years 1902 to 1905 was 89 cases of typhoid fever, 96 of diphtheria, and 50 of scarlet fever. From the year 1904 there had been a decline in the prevalence of typhoid fever; pulmonary tuberculosis had increased, the figures being 400 cases in 1904, 550 cases in 1905, and over 700 in 1906. The number of deaths, however, had been reduced. From 1901 the yearly mortality from pulmonary tuberculosis had been 701, 704, 681, 626, and 601. The population had increased and the rate per 10,000 of the population was in the same years 14.3, 14.0, 13.5, 12.2, and 11.7. The sanatorium for consumptives since its establishment 20 months ago had treated 276 patients, of whom 177 were discharged with the disease so arrested that they could return to work, 35 had been unrelieved, two had died, and 62 remained in the institution.

Amalgamation of the Medical Society of Victoria and the Victorian Branch of the British Medical Association.

As stated in a former communication, the Medical society of Victoria has become associated with the Victorian branch of the British Medical Association, subject to the approval of the central organisation of the British Medical Association in England. The terms of the proposed combined

and a monograph on Ambrose Paré.—Dr. Jentz, professor of gynaecology in the University of Geneva.—Dr. Eugen Plessin of Berlin, a strenuous advocate for the adoption of animal vaccine.

THE EIGHTIETH ANNIVERSARY OF LORD LISTER'S BIRTHDAY.

THE eightieth anniversary of Lord Lister's birthday occurs in April next, and it has been suggested that the event would suitably be commemorated by the republication of his scientific papers prefaced by a short biography. The biography would contain an account of the part played by the genius of Lister in the development of our knowledge of infectious processes and the history of his efforts to obviate wound infection, his work in these directions having revolutionised the whole of surgical practice and led to the saving of more lives and the prevention of more misery than it is possible to calculate. Lord Lister's original papers, which are scattered throughout the medical and scientific publications of this country, are for the most part accurate observations of his personal labours which gives them a particular value from the biographical point of view. We feel sure that a very large number of professional and scientific men, whatever their country or school, will be glad to have the collected works of Lord Lister. It may be added that already a number of Lord Lister's friends and admirers have expressed their warm approval of this means of celebrating his birthday, and it is proposed to form a committee representative of medicine and science to determine how the above object can best be attained. Dr. C. J. Martin of the Lister Institute will be glad to hear of the names of any who wish to take part in this tribute to one who for 40 years has been pre-eminent among the surgeons of the world.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—The Gillson Scholarship in Pathology for 1907 has been awarded to Mr. Francis Arthur Bainbridge, M.A., M.D. Camb., D.Sc. Lond., M.R.C.P. Lond., of Guy's Hospital. At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—M. B. S. Button (Sections I. and II.) and O. C. Morrell (Section I.), London Hospital; W. V. Pegler (Section II.), Leeds; E. W. Squire (Sections I. and II.), St. Mary's Hospital; and J. S. Ward (Sections I. and II.), Sheffield.
Medicine.—M. B. S. Button (Sections I. and II.), London Hospital; E. S. Cooke (Sections I. and II.), Royal Free Hospital; S. F. Fouracre (Sections I. and II.), Charing Cross Hospital; S. Singh (Section II.), Glasgow; and G. L. Walker (Sections I. and II.), Leeds.
Forensic Medicine.—M. B. S. Button, London Hospital; J. C. Fletcher, Royal Free Hospital; S. F. Fouracre, Charing Cross Hospital; G. Rolason, Birmingham; and R. Spears, University College Hospital.
Midwifery.—H. J. W. Barlee, Middlesex Hospital and Lyons; M. B. S. Button, London Hospital; S. F. Fouracre, Charing Cross Hospital; S. Singh, Glasgow; and R. P. Wyld, Manchester.
The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: M. B. S. Button, W. V. Pegler, and S. Singh.

UNIVERSITY OF OXFORD.—In a congregation held on Feb. 16th the following degrees in medicine were conferred:—

Doctor of Medicine.—A. M. Gossage, Magdalen College.
Bachelor of Medicine and Surgery.—L. T. Barra, University College.
On Feb. 19th a statute was passed in convocation empowering the Board of the Faculty of Medicine to send two representatives as members of the Board of Studies for Responses.

UNIVERSITY OF CAMBRIDGE.—Dr. Laurence Humphry has been appointed a member of the degree committee of the special board for medicine.—Dr. Rouse, Mr. O. Browning, Mr. J. Wallis, Mr. E. A. Parkyn, and Mr. D. H. S. Cranage have been appointed delegates to the International Congress on School Hygiene, to be held in London next May.—Mr. F. Darwin, M.A., M.D., has been appointed to represent the University at the 200th anniversary

of the birth of Linnaeus, to be held at Upsala in May next.—The following have been appointed electors to professorships in the University:—Anatomy: Professor Howard Marsh and Professor A. Thomson. Downing of Medicine: Sir Thomas Barlow and Sir E. O. Perry. Botany: Professor Langley. Zoology: Dr. W. H. Gaskell and Professor Graham Kerr. Physiology: Professor Sherrington and Dr. H. K. Anderson. Surgery: Dr. L. Humphry. Pathology: Professor G. H. F. Nuttall.—At a Congregation on Feb. 14th the following degrees were conferred:—

M.C.—H. M. Davies, Trinity.
M.B.—O. M. Stevenson, St. John's; and E. E. Atkin, Gonville and Caius.

The collections in the Museum of Zoology have been enriched by gifts of a cast of the skeleton of the gigantic marsupial *Diprotodon australis* by Dr. E. C. Stirling, F.R.S., of Adelaide, and of skeletons, skulls, and skins of antelopes from Florida and tropical Africa by Mr. O. B. C. Storey.—Mr. J. J. Lister, St. John's, has been appointed a manager of the Balfour Fund for Animal Morphology in the place of the late Sir Michael Foster, K.C.B.—Mr. F. A. Potts, Trinity Hall, is to occupy the University table in the Marine Biological Association's Laboratory at Plymouth.

UNIVERSITY OF LONDON.—At examinations held recently the following satisfied the examiners:—

B.Sc. DEGREE BY RESEARCH (FOR EXTERNAL STUDENTS).
Chemistry.—Thomas Stewart Patterson, University of Leeds; and Kenworthy James Thompson, University College, Aberystwith.
Geology.—Lewis Leigh Fennor, Laboratory of the Geological Survey of India, Calcutta.

ROYAL COLLEGE OF SURGEONS IN IRELAND: FELLOWSHIP EXAMINATION.—The following candidates, having passed the necessary examination, have been admitted Fellows of the College:—

John Armstrong, B.Ch., &c., Royal University, Ireland; Samuel Creighton Clarke, L.R.C.S.I., &c.; Raghunath Vithal Khedkar, L.R.C.S.I., &c., Edin.; George Whitfield Little, L.R.C.S.I., &c.; Augustus Anson Warren Merrick, L.R.C.S.I., &c.; and Francis James Palmer, L.R.C.S.I., &c., Captain, R.A.M.C.

The following candidates have passed the primary part of the Fellowship examination:—

Burjorji Pirozsha Ranaji, L.M. and S., Bombay University; Patrick Edward Hayden, L.R.C.S.I., &c.; Henry Stokes, B.Ch., &c., University, Dublin; Robert Adams, Miss Ina Marion Clarke, Ernest Cotton Deane, Frank Newenham Harvey, Noel Morley Herbert, John Joseph McGrath, John Menton, Miss Amy Florence Nash, George Guming Sneyd, Miss Cecilia Forence Williamson, and Owen Waller James Wynne.

FOREIGN UNIVERSITY INTELLIGENCE.

Bonn: Dr. Hermann Kuhn of Königsberg has been appointed Professor of Ophthalmology in succession to Professor Theodor Saemisch who has retired; Dr. H. Stursberg has been recognised as *privat-docent* of Internal Medicine.—**Brussels:** A School of Tropical Medicine will be opened next autumn and will pay special attention to sleeping sickness; Dr. van Kampenout has been appointed Director.—**Gießen:** Dr. Voß of Basle has declined the chair of Medicine.—**Heidelberg:** Dr. Otto Benda has been recognised as *privat-docent* of Anatomy.—**Jena:** Dr. Giese, *privat-docent* of Forensic Medicine, and Dr. Lommel, *privat-docent* of Medicine, have been appointed Extraordinary Professors.—**Kiel:** The chair of Ophthalmology which Professor Völcker is resigning has been offered to Professor Otto Schirmer of Greifswald.—**Königsberg:** Dr. Otto Voss, *privat-docent* of Otolaryngology, has been granted the title of Professor.—**Munich:** Dr. Ernst Moro of Graz has been recognised as *privat-docent* of Children's Diseases and Dr. M. Geiger as *privat-docent* of Psychology.—**Prague (German University):** A chair of Experimental Morphology and one of Laryngology are about to be established.—**Tomsk:** Dr. Wedenski has been appointed Professor of Surgery.—**Turin:** Dr. Teobaldo Soli has been recognised as *privat-docent* of Midwifery and Gynaecology.—**Würzburg:** Dr. Enderlen of Basle has been appointed Professor of Surgery in succession to the late Professor Schönborn.

DONATIONS AND BEQUESTS.—The honorary secretaries of King Edward's Hospital Fund for London have received the sum of £10,000 from the executors of the late Mr. John Nicholas.—The late Mr. James Bownick Davison has bequeathed, subject to his wife's life interest, £1000 to King Edward's Hospital Fund and £500 to the Sarbiton Cottage Hospital.—By the will of Mrs. Harriet Venables the Infant Orphan Asylum at Slough will receive £500. The

the necessity and importance of moving the Melbourne Hospital and increasing its departments and usefulness.

Honour conferred on Dr. A. L. Kenny.

Dr. A. L. Kenny of Melbourne, who is on a visit to Europe after travelling in the East, has been appointed private chamberlain to the Pope, with the title to wear cape and sword and to rank with noblemen on duty at the Vatican. Dr. Kenny is on the staff of St. Vincent's Hospital. He acted as secretary to the Australasian Roman Catholic Congress. Jan. 21st.

Obituary.

EBENEZER TOLLER, M.R.C.S. ENG., L.S.A.

Mr. Ebenezer Toller, who recently died at his residence, "The Zephyrs," Scarborough, after a long and painful illness, was descended from a remarkable Bedfordshire family, his grandfather and three great-uncles being each between 7 and 8 feet in height, and his four great-aunts are described on an old engraving held in the family as the four beauties of Bedfordshire. During his infancy his father died suddenly whilst speaking at a public Whig meeting at the time of the Reform Bill, his mother dying shortly afterwards. Mr. Toller studied medicine at King's College Hospital and took the diplomas of M.R.C.S. Eng. and L.S.A. in 1857 and 1858 respectively. On leaving King's College he at once became resident medical officer to the St. Andrew's Castle Private Asylum, Bury St. Edmunds, and from here he went to the Middlesex County Asylum at Colney Hatch; he was afterwards appointed medical superintendent of St. Luke's Lunatic Hospital, London, and the ability shown by him in his management there obtained for him the similar post at the Gloucester County Asylum, which he held from 1863 to 1882. This asylum had been built up gradually from a comparatively small structure to one holding rather less than 600 patients, but the demand for further accommodation made it necessary to build a branch asylum to accommodate 400 more patients on a site about a mile farther from the city. The extra work and anxiety which this expansion involved unfortunately proved so great a strain for Mr. Toller that his health completely broke down and he was compelled to retire. He was the pioneer in providing in lunatic asylums those entertainments which are now looked upon as a matter of course in every asylum. His musical ability prompted him, when a medical officer at Colney Hatch Asylum, to institute concerts for the patients. These and other forms of entertainment which he organised attracted great attention and received the recognition of the Commissioners in Lunacy so far back as March, 1862. At St. Luke's Hospital the assistance rendered by his many musical friends gave his concerts a character of more than average importance. Mr. Toller was also a strong advocate of treating the insane in surroundings as homelike as possible and deprecated strongly their being kept in large numbers in great buildings. These views he brought before the Association of Medical Officers of Asylums at the Royal College of Physicians of London in 1864, in a paper which was afterwards published with plans of cottage asylums. He was a Fellow of the Royal Meteorological Society and at Gloucester he made systematic meteorological observations which were forwarded monthly to Greenwich Observatory. He was also to be seen in the hunting field and played cricket in the asylum eleven. His second son, Dr. Seymour Graves Toller, became assistant physician to St. Thomas's Hospital, but his health failing he was appointed physician to the Government Hospital at Cairo and lecturer in medicine. Here he died suddenly and in the absence of any relatives (in consequence of their inability to arrive in time) his funeral was attended by Lord Cromer as principal mourner. A children's ward at St. Thomas's Hospital bears his name as a memorial and the "Seymour Graves Toller prize" is awarded annually to the first student in medicine. Dr. S. G. Toller was a brilliant violinist and a member of the Royal Amateur Orchestral Society. Mr. E. Toller had four other sons but only the eldest survives him. The funeral service was held at Holy Trinity Church, Scarborough, of which he was a churchwarden, and it was attended by a large number of the residents.

JOHN FALCONER, M.R.C.S. ENG.

Mr. John Falconer of Lasswade, near Edinburgh, who died on Jan. 6th at the age of 80 years, was a man whose genial personality will live in the memories and thoughts of all who knew him. The son of a well-known practitioner in Loanhead, he naturally received his education in Edinburgh and while studying medicine at the University there he became demonstrator to Professor John Goodieir. He took the diploma of M.R.C.S. Eng. in 1848 and for a time was assistant to Professor Quekett, the London histologist. He had many anecdotes of Goodieir, for whom he cherished a deep admiration, as well as of Sir Richard Owen the anatomist, and various London surgeons. During the Crimean war he did duty in the Turkish Hospital at Scutari. Soon after returning to England he went to China, where he practised at Han-kau for 17 years. At the end of this time he suffered from inflammation of the liver, from which he made a slow recovery. Being in easy circumstances he settled near Lasswade, where he could indulge his favourite pursuit of horticulture. Mr. Falconer was a man of ferid character and powerful build. He excelled in athletic exercises. A man of lively aesthetic tastes, he was warm and enduring in his friendships, keen in his resentments, easily accessible to pity, generous, and charitable. He was a zealous Freemason, being a past master of the Celtic Lodge and having held high office. About a year ago Mr. Falconer had a slight paralytic shock which recurred several times, much impairing the power of the right side and lessening the vigour of his mental faculties. His only son, John James Falconer, who had studied medicine at Edinburgh for several years and had passed all the examinations save the concluding ones, died from consumption three weeks before his father.

ROBERT A. L. GRAHAM, M.B., B.Ch., B.A.O. R.U.I.

Dr. R. A. L. Graham of the Belfast District Lunatic Asylum, who died on Feb. 13th from perforation of the bowel during an attack of typhoid fever, was one of the ablest of the younger members of the Belfast School of Medicine. The son of a Presbyterian clergyman (the Rev. Dr. Graham of Comber, county Down), young Graham when a student was at Queen's College, Belfast, where, as well as in the Royal University of Ireland, he had a brilliant record. In addition to being a prizeman in many classes, he was senior scholar in biological science at Queen's College. In the Royal University he obtained the degree of B.A. in 1896, taking honours and an exhibition, and in 1898 he graduated as M.B., B.Ch., and B.A.O. At the University he was also awarded in 1899 the diploma in mental diseases, and in the following year he won the Stewart scholarship in mental diseases (£200). After graduating in medicine he studied in London, Freiburg, and at Munich. He was a skilled pathologist and was demonstrator of pathological neurology in Queen's College, Belfast. For the past nine years he had been assistant medical officer at the Belfast Asylum in Grosvenor-road. Up to the time of his falling ill—three weeks before his death—he had been collecting information for the Royal Commission on the Care and Control of the Feeble-Minded, with special reference to mentally feeble children in and around Belfast. Through his enthusiasm a small but thoroughly equipped laboratory had been fitted up at the asylum, where he did much original work, and one of his most interesting contributions to the local medical society was on a case of General Paralysis of the Insane with Syphilitic Meningomyelitis, the paper being afterwards published in the *Journal of Mental Science*. He was specially complimented by the Commissioners in Lunacy for his efforts to raise the pathological side of asylum work. Dr. Graham was 31 years of age and unmarried. A modest kindly man, he had all the enthusiasm of the man of science and the thoroughness of the careful investigator and close observer.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. L. Willems, formerly President of the Belgian Academy of Medicine.—Dr. G. Doremberg of Cannes, corresponding member of the Academy of Medicine of Paris.—Dr. Karl von Lotzbeck, surgeon-general in the Bavarian army, who has been on the retired list for more than 11 years. He published various surgical papers

ASHLEY and Mr. COURTHOPE have given notice that they will move the rejection of this measure.

Butter and Margarine Bill.

The Bill which Sir EDWARD STRACHEY has introduced into the House of Commons to make further provision with respect to the manufacture, importation, and sale of butter, margarine, and similar substances has been printed. It contains clauses for the registration and inspection of butter factories and for the prohibition of adulterants on these premises. The inspection of these factories is placed in the hands of officers of the Board of Agriculture and of officers of local authorities who are authorised to procure samples under the Sale of Food and Drugs Act. Clause 4 of the Bill imposes a limit of moisture. No butter in any butter factory must contain more than 16 per cent. of water and a like standard is set up for margarine. If that limit is exceeded the occupier of the factory or the consignor of the butter or the margarine shall (whether the excess of moisture is due to adulteration or not) be guilty of an offence under the Act unless he proves to the satisfaction of the court that the butter or margarine was not made, blended, reworked, or treated in the factory. Any person who manufactures, sells, or exposes for sale, or has in his possession for the purpose of sale, any butter substitute which contains more than 24 per cent. of water will also be guilty of an offence under the Act. These limits of moisture are applied in another clause to imported butter, margarine, and butter substitutes.

Medical Inspection and Treatment of School Children.

The Education Acts (Amendment) Bill introduced by Mr. WALTER REA contains a provision for the medical inspection of school children. Under this Bill a local education authority would be empowered "to provide for the medical inspection of children before or at the time of their admission to a public elementary school and on such other occasions as the Board of Education direct." It would also have the power to make such arrangements as might be sanctioned by the Board for attending to the health and physical condition of the children educated in public elementary schools.

Coroners' Inquests.

Mr. LUKE WHITE has presented a Bill in the House of Commons which is designed to dispense with the compulsory viewing of bodies on the holding of coroners' inquests.

The Sale of Whisky Bill.

The Bill, which has been presented in the House of Commons by Mr. WILLIAMSON, for the purpose of amending the law relating to the Sale of Whisky and to provide for the marking of casks and other vessels containing whisky, has been printed. It is backed by Mr. MURRAY, Mr. CATHCART WASON, Sir ANDREW TORRANCE, and Mr. BILLSON. The provisions of the Bill are summarised in a memorandum, the most important being as follows: To secure to purchasers of whisky a clear statement whether it is a whisky made in a pot still from pure malt, or of malt and corn, or is in part a spirit made in a patent still from unmalted grain. To carry out this object the Bill proposes to enact that all whisky shall, from the time of leaving the distillery till sold to the consumer, be described by a mark or label on the cask or bottle as "whisky" or "blend of whisky and patent still spirit," as the case may be. Provision is made for similar information being given to persons purchasing whisky on draught. Power to prosecute for offences against the Bill is given to officers of Inland Revenue, but persons authorised by local authorities having the execution of the laws relating to food and drugs are also to have power to prosecute and are to be supplied by the Inland Revenue with the information necessary for that purpose.

Infant Life Protection Bill.

Mr. STAVELTY HILL's Bill to amend the Infant Life Protection Act, 1897, is supported by Sir JOHN KENNEDY, Mr. ARTHUR LEE, Mr. HAY, Mr. WALBROND, Mr. RAMSAY MACDONALD, Mr. HILLS, and Mr. NICHOLLS.

The Government's Pharmacy Bill.

On Friday Mr. HERBERT SAMUEL presented to the House of Commons a Bill promoted by the Home Office to regulate the sale of certain poisonous substances and to amend the Pharmacy Acts. A Bill introduced by Mr. WESTREY to amend the Pharmacy Acts has also been printed. It provides, *inter alia*, that every shop for the sale of poisons "shall be under the bond fide personal conduct and supervision of a duly qualified person," and for the "maintenance of a register of shops where poisons may be sold, and also a register of the duly qualified chemists conducting each such shop," and requires that "companies keeping open shops for the sale of poisons shall have that portion of their business managed by a duly qualified chemist as director."

The Army Medical Services.

The Secretary of State for War in his memorandum relating to the Army Estimates for 1907-08 makes a brief reference to medical matters in the army. He states that the principles of sanitation are being steadily inculcated in the army by means of a school of army sanitation at Aldershot for combatant officers and men, and for non-commissioned officers and men of the Royal Army Medical Corps.

by the compulsory examination of all officers in hygiene, the distribution of literature, and by the delivery of lectures by officers of the Royal Army Medical Corps. By these means, and by the institution of sections of specially trained men to look to the sanitary affairs of units in the field, it is confidently hoped to reduce the proportion of sick in future campaigns.

Public Health Legislation.

The Earl of ONSLOW has intimated that he intends to initiate a discussion in the House of Lords on various Public Health Acts. He intends to ask the Government whether, in its opinion, the time has arrived for the extension of these Acts. No date has yet been named for the discussion.

The Registration of Nurses.

Mr. CLAUDE HAY has given notice that he intends to introduce a Bill to provide for the better training and registration of nurses and for the voluntary registration of private nursing homes.

The Public Health Acts.

Mr. J. W. WILSON on Tuesday introduced a Bill to amend the Public Health Acts.

HOUSE OF COMMONS.

WEDNESDAY, FEB. 20TH.

Cerebro-spinal Meningitis.

Mr. LUPTON asked the President of the Local Government Board, with reference to the recent outbreaks of spotted fever in the United Kingdom, whether there was any practical method of ascertaining that a tube of vaccine virus was at the time of use free from the contagion of cerebro-spinal meningitis; and, if the answer be in the negative, whether he would discontinue the manufacture of calf lymph until it could be guaranteed free from all extraneous disease germs.

Mr. JOHN BURNS replied: I am advised that there is a practical method of ascertaining the presence of the organism of cerebro-spinal meningitis in vaccine lymph, and that in the periodic bacteriological examination which is made of each batch of calf lymph this organism if present and alive would be detected. I am further advised that the processes adopted in the elimination of extraneous micro-organisms from the lymph would undoubtedly destroy the organism in question.

Mr. J. W. WILSON: What steps are being taken to secure protection from the disease?

Mr. BURNS: I am issuing a circular to the sanitary authorities relative to this disease and am forwarding a memorandum to them on the subject that has been prepared by the medical officer to the Local Government Board. The report has been made by Dr. M. H. Gordon to me on the micrococcus of epidemic cerebro-spinal meningitis, with special reference to identification in the upper respiratory passages. That report is in the press and will be published in the course of a few days. If further medical investigation is found necessary on this matter I shall not hesitate to take prompt steps.

Mr. WILSON: Does the right honourable gentleman expect any immediate danger?

Mr. BURNS: I do not think there is any immediate cause for panic or alarm. The whole of the medical authorities are apprised of the position and are doing the best they can in the matter.

Mr. JOHN DILLON: Has the right honourable gentleman power to take or has he taken any means to control the trade in old clothes in the city of Glasgow? The disease seems to have spread in that centre and I should say that trade would be exceedingly dangerous.

Mr. BURNS: The Local Government Board is taking every step to ascertain what are the causes likely to spread this disease and will specially inquire into the question raised by the honourable Member.

Vaccination Fees.

Mr. RAPHAEL asked the President of the Local Government Board for what reason the Board had insisted that the Poor-law guardians of the borough of Derby should pay the medical officer of the union workhouse a fee of 2s. 6d. for each case of vaccination at the workhouse in excess of the inclusive salary he was ready and willing to accept from the guardians; and whether he would give instructions to his department that in the future no action should be taken to frustrate the endeavours of local authorities to secure economical administration.

Mr. BURNS replied: The law contemplates that a contract will be entered into with a workhouse medical officer in respect of the vaccination of the persons in the workhouse and that a fee will be paid him in respect of each such vaccination. The remuneration for this purpose cannot properly be included in his salary as the remuneration covers duties which would not devolve on him in the absence of a contract. But the fact that separate provision will be made in respect of fees for vaccination may of course be taken into account in determining the amount of the salary.

The Prosecution of Milk Vendors.

Mr. RENDALL asked the honourable Member for South Somerset: as representing the President of the Board of Agriculture, whether, having regard to circulars issued by the Board concerning milk which fell below the legal standard owing to the conduct of the cow and not owing to the corrupt act of the cow owner or the milk distributor, he proposed to introduce legislation to safeguard milk vendors from prosecution in cases where it was proved that milk had been sold in the condition in which it left the cow.—Sir EDWARD STRACHEY replied: The suggestions made by my honourable friend will receive careful consideration in the event of any further legislation as to the sale of milk being proposed. In the meantime we shall be happy to make inquiries in any case in which it appears that proceedings have been instituted with regard to the alleged adulteration of milk either under a misapprehension of the law or without due consideration of the facts of the particular case.

Mr. RENDALL asked the honourable Member for South Somerset: as representing the President of the Board of Agriculture, whether he would introduce legislation in regard to the sale of milk, to provide that where it was apparent to the inspector under the Sale of Food and Drugs Act that the producer was responsible for the adulteration, and

¹ The provisions of this measure are stated in an annotation (see p. 623).

will also bequeath £400 each to the National Hospital for Paralyzed and Epileptic, the Hospital for Incurables, Putney, Windsor Infirmary, Maidenhead Cottage Hospital, Earlswood Asylum for Idiots, and the Infant Orphan Asylum at Wanstead.

THE Leicester town council at its meeting on Tuesday last increased the salary of Dr. O. K. Millard, the medical officer of health of the borough, from £600 to £700 per annum.

SHANGHAI GERMAN MEDICAL SCHOOL.—Dr. Claude du Bois Reymond, a son of the eminent physiologist, who is now *privat-docent* of ophthalmology in Berlin, has been offered a post as teacher of ophthalmic surgery in the Shanghai German Medical School. The appointment is for six years.

WEST LONDON POST-GRADUATE COLLEGE.—The Post-Graduate College attached to the West London Hospital has now been recognised by the University of London as an institution where candidates for the M.D. degree can spend the necessary year of hospital study after passing the degree of M.B.

SCARCITY OF CERTIFIED MIDWIVES.—At a meeting of the Loughborough (Leicestershire) rural district council on Tuesday, Feb. 19th, the medical officer of health of the county wrote drawing attention to the scarcity of certified midwives in the district. He asked the council to inform him if it knew of any suitable women who would be likely to take up the work.

PRIZE FOR INDUSTRIAL HYGIENE.—The council of the Society of Arts is prepared to award, under the terms of the Benjamin Shaw Trust, a gold medal, or a prize of £20, "for any discovery, invention, or newly-devised method for obviating or materially diminishing any risk to life, limb, or health incidental to any industrial occupation, and not previously capable of being so obviated or diminished by any known and practically available means." Descriptions of inventions must be sent in not later than Dec. 31st, 1907, to the secretary of the Society of Arts, Adelphi, London, W.C., either under the inventor's name or under a motto, accompanied by a sealed envelope inclosing the name. The judges will be appointed by the council. The council reserves the right of withholding the prize or of awarding a smaller prize or smaller prizes.

BRITISH MEDICAL BENEVOLENT FUND.—The annual general meeting of the supporters of this fund was held at 15, Wimpole-street, W., on Feb. 19th. Sir William H. Broadbent, the President, was unable to be present, and Sir William S. Church being prevented by a meeting of the amalgamated societies from presiding as announced, the chair was taken by Mr. E. Parker Young, chairman of the committee. The report of the committee for the preceding year was read and adopted, and was ordered to be printed for circulation. In the annuity department the income was £2485 2s. The following legacies were received and duly invested: Dr. Grieve, £259 10s. 6d.; Dr. W. Burns, £90; Dr. Parsons, £100; Dr. Cameron, £100; and Dr. Trollope, £500; total, £1049 10s. 6d. In the grant department the amount distributed was £1619 5s., as against £1562 in the preceding year. The total amount of money received, however, appeared to be less by £150. In 1905 a special appeal was made which brought in donations to the amount of £841. During the year without any special appeal the donations reached the satisfactory sum of £226, while the annual subscriptions showed the remarkable increase of £251. This increase, though the result in part of personal effort, was largely due to the generous assistance rendered by the editors of THE LANCET and of the *British Medical Journal* in permitting the publication in their columns each month of the proceedings of the committee with an abstract of the cases relieved. This simple record of facts told in an eloquent and touching way the work and wants of the fund. A special donation of £20 was again received from Miss Flower to enable some of the most deserving cases to get a summer holiday. Other special donations to provide special Christmas gifts were received from Miss Flower of £20, from Dr. Satchell of £10 10s., and other sums from Mr. Patmore Sheehy and Miss Breeze. The accounts were audited as usual by Messrs. Deloitte, Plender, Griffiths, and Co., chartered accountants. The committee, while glad

that the favourable anticipations made in the report of last year had been realised, felt only too well how much still remained to be done before the fund was recognised as widely and supported as liberally as it deserved and ought to be, and called upon all interested in its work to continue, and, if possible, to increase, their efforts on its behalf.

THE MIDDLESEX HOSPITAL.—A meeting of the court of governors was held on Feb. 28th, when Mr. Henry Morris occupied the chair. After the transaction of the usual business an address was presented to Nurse Sarah Cross in recognition of her heroic services during the recent earthquake in Jamaica.

GUY'S HOSPITAL.—The treasurer of Guy's Hospital has received a bequest of £1000 under the will of the late Mr. Charles James Oldham, F.R.C.S. Eng., of Brighton for the purpose of endowing an annual prize in ophthalmology at the Medical School. A further anonymous donation of £200 has also been received for the fund for the Endowment of Medical Education and Research.

ROYAL PORTSMOUTH HOSPITAL.—Two important meetings in connexion with the Royal Portsmouth Hospital were held last week. On Feb. 22nd the mayor presided over a meeting at the town hall, which was held to inaugurate a fund for the erection of new children's wards in place of the present inadequate, ill-adapted, and insanitary ones. A generous contribution of £500 was made by Mr. J. J. Young, J.P. (chairman of the committee of management), and a sum of £2525 was obtained before the meeting closed. On the following day the annual meeting of the subscribers was held, Mr. T. A. Bramson, M.P., presiding. The report, which was a satisfactory one, stated that there was only a small deficit of £89 on the year's working, there was an increase of 1280 cases in the number of patients treated, and the average cost per bed occupied on total ordinary expenditure was £58 11s. Only two hospitals in the kingdom were conducted on more economical lines. The Hospital Saturday Fund contributed £973, and £804 11s. were received from the Hospital Sunday Fund.

MRS. CRAIGIE MEMORIAL FUND.—A committee, which has been formed by some of the friends of the late Mrs. Craigie (John Oliver Hobbes) to raise subscriptions for a memorial to her, appeals to the medical profession on the ground that the deceased novelist was formerly a student at University College. It is proposed that, in the event of sufficient funds being collected the memorial should include the following: (1) a portrait plaque, in marble or bronze, to be placed in University College, London; (2) a replica of the plaque to be placed in a suitable position in the United States; (3) a scholarship for the study of modern English literature to be given annually in England; and (4) a similar scholarship to be given annually in the United States. Subscriptions may be sent to one of the honorary treasurers—viz., the Hon. Mrs. Rochfort Maguire, 3, Cleveland-square, St. James's, S.W.; Mrs. George Cornwallis West, Salisbury Hall, St. Albans; Miss Blanche Eliot, 8, Onslow-gardens, South Kensington, S.W.; or to Messrs. Barclay and Co., Limited, 1, Pall Mall East, London, S.W.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Public Health Bill.

THE text of the Public Health (Regulations as to Food) Bill which was brought in by Mr. JOHN BURNS on the second day of the parliamentary session has been published. It provides that the power of making regulations under the various Public Health Acts shall include "the power of making regulations authorising measures to be taken for the prevention of danger arising to public health from the importation, preparation, storage, and distribution of articles of food or drink (other than drugs or water) intended for human consumption." The Bill further sets forth that without prejudice to the generality of the powers so conferred, those regulations may (a) provide for the examination and taking of samples of any such articles; (b) apply, as respects any matters to be dealt with by the regulations, to any provision in any Act of Parliament dealing with the like matters, with the necessary modifications and adaptations; and (c) provide for the recovery of any charges to be made by the regulations. Both Mr.

WEDNESDAY, FEB. 27TH.

Guardians and Cerebro-spinal Fever.

Mr. ALDEN asked the President of the Local Government Board whether he would issue to boards of guardians, relieving officers, and poor-law medical officers the circular as to spotted fever or cerebro-spinal meningitis which he proposed to issue to the sanitary authorities; and further, whether he would suggest to the guardians and relieving officers that poor sick persons and the poor parents of sick children should not at the present time, if they stated that they were unable to pay for a doctor, be deterred from making application for medical assistance by the fear of having the relief made a debt or by the fear of having to come before the guardians or a committee.—**Dr. JOHN BURNS** replied: I am sending to boards of guardians the memorandum which accompanied the circular referred to with a view to its distribution amongst poor-law medical officers. As regards the latter part of the question, I have no reason to suppose that persons properly entitled to receive medical relief are deterred from applying or it by the considerations mentioned by my honourable friend and it does not seem to me necessary to communicate with the guardians on the subject.

BOOKS, ETC., RECEIVED.

BAILLIERE, J. B., ET FILS, 19, Rue Hauteville, Paris.

Nouveau Traité de Médecine et de Thérapeutique. Publié en fascicules sous la Direction de MM. P. Brouardel et A. Gilbert. XII. Maladies de la Nutrition: Goutte—Obésité—Diabète. Par H. Richaudeau, Médecin de l'Hôpital des Enfants Malades, et J. A. Sicard, Médecin des Hôpitaux de Paris. Price fr. 7.

CHURCHILL, J. AND A., 7, Great Marlborough-street, London, W.

Some Points in the Surgical Anatomy of the Temporal Bone from Birth to Adult Life. By Arthur H. Cheate, F.R.C.S., Aural Surgeon to King's College Hospital and to King Edward VII.'s Hospital for Officers. Price 5s. net.

Une Méthode Simple pour l'Analyse de l'Eau. Spécialement recommandé aux Officiers Médecins du Service Sanitaire. Par John C. Thrush, M.D. Vic. D.Sc. Lond., D.P.H. Cant., Lecteur et Examinateur de l'Université de Londres. Traduction sur la Cinquième Edition Anglaise (1904). Par MM. les Drs. Magnier, Interne à l'Hôpital de Maréville et Thier, G. Chef du Laboratoire de Bactériologie des Cliniques de l'Université de Nancy. Price 2s. 6d. net.

DENT, J. M., AND Co., 29 and 30, Bedford-street, London, W.C.

Thomas H. Huxley. By J. R. Almsworth Davis, M.A., Trinity College, Cambridge. (English Men of Science Series. Edited by J. Reynolds Green, D.Sc.) Price 2s. 6d. net.

ENCYCLOPÆDIA PRESS, 22, Bank-street, Sheffield.

The Kennel Encyclopedia. Under the General Editorship of J. Sidney Turner, M.R.C.S., F.R.S., F.Z.S., &c. (Chairman of the Committee of the Kennel Club). Assisted by Vale Nicolas (one of the Assistant Editors of the Encyclopedia of Legal Precedents). Vol. I., Part I., A to B. The work will comprise about 16 parts or 4 volumes. Price of each part (to those other than original subscribers) 5s. net.

ENKE, FERDINAND, Stuttgart.

Geschichte der Ohrenheilkunde. Von Dr. Adam Politzer, O. Ö. Professor der Ohrenheilkunde an der Wiener Universität, K. K. Hofrat, Vorstand der K. K. Universitätsklinik für Ohrenkrankheiten im Allg. Krankenhaus in Wien. Zwei Bände. I. Band. Von den ersten Anfängen bis zur Mitte des neunzehnten Jahrhunderts. Price M.20.

FISCHER, GUSTAV, Jena.

Einführung in die Versicherungsmedizin. Vorlesungen für Studierende und Aerzte. Von Dr. J. Grober, a.o. Professor an der Universität Jena. Price M.3.60; geb. M.4.50.

Stereoskopbilder zur Lehre von den Hernien. Von Professor E. Ederlein, Basel, und Professor E. Gasser, Marburg. Price, bound, M.25.

FROWDER, HENRY, Oxford University Press, London, New York, and Toronto.

The World's Classics. Price 1s. net. LXXXIX. The Dramatic Works of Richard Brinsley Sheridan. With an Introduction by Joseph Knight.—LXXXIX. The Works of Oliver Wendell Holmes. II. The Professor at the Breakfast-table.—XCIV. Scott's Lives of the Novels.—XCV. The Poet at the Breakfast-table. By Oliver Wendell Holmes. With an Introduction by W. Robertson Nicoll. Vol. III. With an Introduction by Frank H. Williams. LXXXVII. C. Cranford. The Cage at Cranford: The Moorland Cottage. Poems of Thomas Hood. With an Introduction by Walter Jerrold. By Elizabeth G.askell. With an Introduction by Clement Shorter. CXXIII. Horae Subsecrae. By Dr. John Brown. With an Introduction by Austin Dobson. CXX. and CXXI. The Posthumous Papers of the Pickwick Club. By Charles Dickens. CXXII. Mrs. Casella's Curtain Lectures and other Stories and Lyrics. By Douglas Jerrold. With an Introduction by Walter Jerrold.

GARRIE, WILLIAM, AND SONS, Edinburgh and London.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vol. III. Lath Bursitis to Gummi Indurum. Price not stated.

HILDEBRAND, AUGUST, Unter den Linden, 63, Berlin, N.W.

Das Wesen des Menschlichen Seelen- und Geisteslebens als Grundriss einer Philosophie des Denkens. Von Professor Dr. Berthold Kern, Generalarzt. Zweite, völlig Neubearbeitete Auflage. Price M.7.

INTERNATIONAL TRACT SOCIETY, LIMITED, 451, Holloway-road, London, N.

The School of Health. A Guide to Health in the Home. By Alfred B. Owen, M.D., and M. Ellsworth Owen, M.A., Editors of "Good Health." Price 2s. net.

KNAPP, PAUL, TRUTH, TRUSTEES, AND Co., LIMITED, Dryden House, Great Street, London, W.

A Text-book of Ophthalmic Operations. By Harold Grimdale.

M.B., F.R.C.S., Ophthalmic Surgeon and Lecturer on Ophthalmic Surgery to St. George's Hospital, Surgeon to the Royal Westminster Ophthalmic Hospital, and Elmore Brewerton, F.R.C.S., Ophthalmic Surgeon to the Metropolitan Hospital, Surgeon to the Royal Westminster Ophthalmic Hospital. Price 12s. net.

LIGUE CONTRE LE MAL DE MER, 60, Boulevard Port-Royal, Paris.

Le Mal de Mer: Comment on s'en préserve, Comment on le soigne, Comment on en guérit. Guide Hygiénique et Médical Complet du Voyageur à Bord des Navires. Publié par le Comité de la Ligue Contre le Mal de Mer, sous la Direction du Docteur Madeuf, Secrétaire général de la Ligue, Directeur-fondateur de son Journal, Auteur du Livre populaire La Santé pour Tous. Seconde édition. Septième Mille. Prix: 3 francs; franco, 3 fr. 40c.

LONGMANS, GREEN, AND Co., 39, Paternoster-row, London, E.C.

Notes on the Care of Babies and Young Children. For the Use of Teachers. By Blanche Tucker, Inspector of Elementary Schools and Organiser of the Teaching of Cookery and Laundry Work to the Liverpool Education Committee. With an Introduction by Dr. Hope, Medical Officer of Health for Liverpool. Price 1s.

MACMILLAN AND Co., LIMITED, London.

Some Points in the Surgery of the Brain and its Membranes. By Charles A. Ballance, M.V.O., M.S., F.R.C.S., Royal Prussian Order of the Crown, Corresponding Member of the Society of Surgery of Paris, Surgeon to St. Thomas's Hospital and to the National Hospital for the Paralysed and Epileptic, Queen-square, President of the Medical Society of London. Price 15s. net.

Epilepsy: a Study of the Idiopathic Disease. By William Aldren Turner, M.D. Edin., F.R.C.P. Lond., Physician to Out-patients, the National Hospital for the Paralysed and Epileptic, Queen-square, and King's College Hospital, London. Price 10s. net.

MAISON ET CIE, 120, Boulevard Saint-Germain, Paris.

Les Évolutions Pathologiques de la Digestion Stomacale. Par Georges Hayem, Professeur de Clinique Médicale à la Faculté de Médecine de Paris, Membre de l'Académie de Médecine. Price not stated.

Hôpital de la Pitié. Conférences Pratiques sur les Maladies du Cœur et des Poumons. Par le Dr. Louis Rénou, Professeur Agrégé à la Faculté de Médecine de Paris, Médecin de l'Hôpital de la Pitié, Membre de la Société de Biologie. Price Fr. 5.

Traité de Gynécologie Clinique et Opératoire. Par S. Pozzi, Professeur de Gynécologie à la Faculté de Médecine de Paris, Chirurgien de l'Hôpital Broca. Quatrième édition, revue et augmentée avec la Collaboration de F. Jayle. Tome II. Prix de l'Ouvrage complet (2 volumes) Fr. 40.

METZGER AND Co., 36, Essex-street, Strand, London, W.C.

The Evolution of Life. By H. Charlton Bastian, M.A., M.D., F.R.S., Emeritus Professor of the Principles and Practice of Medicine and of Clinical Medicine in University College, London. Price 7s. 6d. net.

The Drink Problem in its Medical-Social Aspects. By Fourteen Medical Authorities. Edited by T. N. Kellynack, M.D., M.R.C.P., Honorary Secretary of the Society for the Study of Inebriety; Editor of "The British Journal of Inebriety." Price 7s. 6d. net.

The Substance of Faith Allied with Science. A Catechism for Parents and Teachers. By Sir Oliver Lodge, F.R.S., Principal of the University of Birmingham. Price 2s. net.

PROGRÈS MÉDICAL (ACTX BUREAU DU), 14, Rue des Carmes, Paris

ALCAN FÉLIX, 105, Boulevard St. Germain, Paris.

Premiers Mémoires de Séguin sur l'Idiotie (1833-1843). Publiés par Bourneville, Médecin de Bicêtre et de la Fondation Vallois (Enfants nerveux et idiots). Price Fr. 4.

Traité Moral, Hygiène et Éducation des Idiots et des Autres Enfants Arriérés. Par Edouard Séguin. Price Fr. 10.

Traité Médico-Pédagogique des Différentes Formes de l'Idiotie. Par Bourneville. Price not stated.

Recherches Cliniques et Thérapeutiques sur l'Épilepsie, l'Hystérie et l'Idiotie. Compte-rendu du Service des Enfants Idiots, Épileptiques et Arriérés de Bicêtre pendant l'Année 1894. Par Bourneville, avec la Collaboration de Durand, Friedel et Perrin. Volume XXV. Price not stated.

REDMAN, LIMITED, 129, Shaftesbury-avenue, London, W.C.

Food and Hygiene: an Elementary Treatise upon Dietetics and Hygienic Treatment. By William Tibbles, LL.D., F.R.C.P., M.B.C.S., L.S.A., Medical Officer of Health, Fellow of the Royal Institute of Public Health, &c. Price 8s. net.

ROSSEN, F. VAN, Amsterdam.

Opuscula Selecta Neerlandicorum de Arte Medica. Fasciculus Primus quem Curatores Miscellaneorum quæ vocantur Nederlandische Tijdschrift voor Geneeskunde collegierunt et ediderunt ad celebrandum Seriem Quinquagesimam in Lucem nuper editam. Price not stated.

ROUSSET, JULES, Rue Casimir-Delavigne, 1, Paris.

Évolution et Transformation. Tome troisième. Ire Partie: Les Monériens. Suite et fin. 2e Partie: Les Secrets de la Vie. 3e Partie: La Vie et l'Évolution du Monde Minéral. Price Fr. 3.50.

SCIENTIFIC PRESS, LIMITED, 23 and 29, Southampton-street, Strand, London, W.C.

A Manual for Nurses on Abdominal Surgery. By Harold Burrows, M.D., F.R.C.S., Assistant Surgeon to the St. James's Hospital, Greenwich, and to the Bellingbroke Hospital, Wandsworth Common. Price 2s. 6d. net.

Skin Diseases, their Nursing and General Management. By G. Norman Maclean, M.D., F.R.S. Lond., M.R.C.P. Lond. and Edin., M.R.C.S. Eng., Physician for Skin Diseases, Tottenham Hospital; Lecturer in Dermatology, North-East London Post-Graduate College. Price 2s. 6d. net.

The Care and Nursing of the Insane. By Percy J. Bailly, M.B., C.M. Edin., Medical Superintendent of Hanwell Asylum. Part I., Anatomy and Physiology. Price 1s. net.

Dunnett's Hospital and Charities. 1907. By Sir Henry Dunnett, K.C.B. Price 7s. 6d. net.

the distributor had taken the precaution provided for by the Act, the distributor's business should not be damaged by having his name dragged before the public through the medium of the police court.—Mr. JOHN BURNS (President of the Local Government Board) replied to the question. He said: I will note the suggestion in the question for consideration in connexion with any legislation for the amendment of the Sale of Food and Drugs Act; but at present it appears to me that there would be difficulties in adopting the proposal.

Mr. ALDEN: May I ask the right honourable gentleman whether he regards the Act as a protection to the consumer or to the trader?

Mr. BURNS: The object of the Act is primarily to protect the consumer and we ought to try to get both at the distributor and the producer. Under the present law the distributor alone is liable. I hope some day both will be liable.

Vaccination in Scotland.

Mr. McOALLUM asked the Secretary for Scotland, if the law is to be altered in England regarding compulsory vaccination, on the plea that the impediments placed in the way of conscientious objections were unsatisfactory, when it might be expected that similar advantages would be extended to Scotland.—Mr. SINCLAIR: I have undertaken to consider this question but I am unable at present to give any definite reply to it.

THURSDAY, FEB. 21ST.

The Health of Belfast.

Mr. MCKILLOP asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that a commission was being appointed to inquire into the high death-rate in Belfast and the sanitary regulations in that city; that the names already published did not include any unofficial member of the medical profession; and whether, in view of the importance of the question, he would consider the advisability of appointing to the commission some such representative acquainted with the laws of sanitation in Ireland.—Mr. BIRRELL replied: I understand that my predecessor gave the most careful consideration to the constitution of the departmental committee which has been appointed to inquire into the sanitary condition of Belfast and there appears to be no sufficient reason for adding to the number. In addition to the expert knowledge possessed by the official medical members who have been appointed, the committee will doubtless have the advantage of hearing the views of a number of eminent members of the medical profession who are fully acquainted with the sanitary condition of Belfast and with the laws of sanitation generally.

Medical Inspection in Scotch Schools.

Mr. GULLAND asked the Secretary for Scotland whether his proposed Education Bill for Scotland would include the provision of meals for school children; and whether he would consider the granting of powers for medical inspection and for the establishment of play centres, more stringent regulations for enforcing compulsory attendance, and the extension of the definition of cruelty, so that parents might be prosecuted who allowed their children to be insufficiently clothed or verminous.—Mr. SINCLAIR said in reply: Provision of meals will be included. The various other matters mentioned by my honourable friend are under consideration, but it is not possible as yet to give any further information in regard to the contents of the Bill.

Soldiers and Tuberculosis.

Major SEELY asked the Secretary of State for War how many men were discharged from the army during the past year suffering from tubercle of the lung; how many of these men were sent to their homes, with a notification to the local medical officer of health; and how many were sent directly to hospital or sanatoriums, stating the particular hospitals or sanatoriums and the numbers sent to each.—Mr. HALDANE answered: The statistics available at the War Office do not contain the required information. It will be necessary to call for returns from all army hospitals at home. When the information has been collected I will have it forwarded to my honourable and gallant friend.

The Royal Commission on Tuberculosis.

Answering Mr. O'GRADY, Mr. RUNCIMAN (Secretary to the Treasury) said: The expenditure on the Royal Commission on Tuberculosis out of the vote for Temporary Commissions up to Jan. 31st, 1907, has been £46,193. I understand that liabilities have also been incurred to the amount of £2700 for stationery and printing.

Pellagra in Egypt.

Mr. JOHN ROBERTSON asked the Secretary of State for Foreign Affairs whether, in view of the prevalence in Egypt of the disease pellagra, resulting from the ingestion of bad maize, he would advise the Egyptian Government to take some such measures of prevention as had been prescribed by the Italian law against pellagra of July 21st, 1902.—Sir EDWARD GREY said: I have no information on the subject but will make inquiries.

MONDAY, FEB. 25TH.

Cerebro-spinal Fever.

Sir HOWARD VINCENT asked the President of the Local Government Board whether, having regard to the recent importation of that dangerous alien disease known as spotted fever, and the rapidity with which it spread, he would issue strict instructions for the inspection of all alien immigrant ships, and, following the precedent of 1892 at the time of the outbreak of cholera at Hamburg, direct that no suspected case should be allowed to land under any pretext.—Mr. JOHN BURNS answered: Cerebro-spinal fever is not necessarily a disease imported from abroad, and at the present time I am not aware that there is any exceptional prevalence of it on the Continent. The circumstances in relation to this disease are different from those affecting an outbreak of cholera such as that referred to in the question. As regards alien immigrants on immigrant ships which come within the Aliens Act, 1905, the hon. Member is aware that they are inspected under the Act, and that the Act requires that leave to land shall be withheld in the case of any such alien if, owing to disease, he appears likely to become a detriment to the public.

Meat Inspection in Scotland.

Mr. WATT asked the President of the Local Government Board whether in view of the dissatisfaction as to the unequal manner in which the officials of local authorities in Scotland carried out their inspection of meat he would appoint a veterinary surgeon, with practical experience of the work, to report on the standard and system

of inspection in operation in the different districts.—Mr. SINCLAIR answered: An inquiry into the methods of meat inspection by office of local authorities in Scotland is now going on.

Infantile Mortality.

Mr. ROGERS asked the President of the Local Government Board whether he intended to introduce any legislation this session dealing with the abnormally high death-rate of children under five years of age; and what steps were being taken to direct the attention of local authorities to this matter.—Mr. BURNS said, in reply: I am giving attention to this subject and I hope that it will be practicable during the present session to introduce legislation bearing upon it. I am impressing on local authorities and their officers by circulars and otherwise the importance of collecting data and studying the problem connected with it.

The Royal Commission on Tuberculosis.

Mr. ALDEN asked the President of the Local Government Board whether he opposed to take in carrying out the conclusions of the Royal Commission on Tuberculosis, seeing that not only the Commissioners but a large number of experts outside the Commission were agreed that more stringent measures were required than those at present enforced to prevent the sale of such milk as contained tubercle bacilli.—Mr. JOHN BURNS replied: I am giving attention to the report of the Royal Commission but am not at present in a position to take action upon it. The report has only recently been presented and as yet the appendices referred to in it have not been issued. The conclusions of the Commissioners relate to matters of much importance and must be carefully considered both by the Local Government Board and the Board of Agriculture.

The Army Medical Department.

Mr. HALDANE, in the course of his statement on the Army Estimates, said that the deficit of men in the Army Medical Department was very serious indeed. They required 8500 men to look after the hospitals, but they had only 4700, and 2000 reservists, so that the deficit was 1800. That would be a bad thing for successful mobilisation and they would try to draw from civilian sources. He did not forget that on mobilisation they required nurses to go to the hospitals. Various schemes were under consideration and he could not speak with confidence yet. The whole topic of nurses was one which he approached with diffidence as it was one of the most difficult with which he had to deal. Further on in his speech the Secretary for War said that in the case of the army medical element they had to have a special bridge between the first and the second lines of defence, and the special contingent that they wanted for the field force was some 331 medical officers, 30 quartermasters, and 4400 men, which would provide for wastage and give them enough to make up the deficiency which they required for mobilisation of the first line. They proposed to organise—and the negotiations for this were in progress—a large territorial Army Medical Corps analogous to the Regular Army Medical Corps. The British Medical Association had already taken a great interest in the matter and had suggested that the War Office should organise this corps not merely locally but as a great corps—just as the Engineers and the Artillery were great corps—organised under the Director-General of the Army Service Corps. His department had accepted that suggestion and were going to organise one great Army Medical Corps, and they hoped in that way to get a very large number of people connected with the medical profession to take an interest in the army medical branch of the service, both regular and second line. In that fashion they hoped to get both officers and men who would go out on mobilisation. He might say that his department entertained no doubt that they should be able to succeed to some extent in that and, they thought, to the full extent of their desires.

TUESDAY, FEB. 26TH.

X Ray Tubes.

In answer to Mr. WEIR, Mr. HALDANE said: The x ray tubes required for military hospitals are purchased from contractors in this country who obtain many of their supplies from continental manufacturers.

The Dismissal of Poor-law Medical Officers in Scotland.

Mr. OATHART WATSON asked the Secretary for Scotland whether he was aware of the dismissal from office of Dr. George Duncan, the Poor-law medical officer of the parishes of Kintail, Glenelish, and Lochalsh after 50 years of public service; would he say if he failed or neglected or refused to perform the duties of his office, or if he was found unfit or incompetent to discharge them; had the Local Government Board made any inquiry into the case; and, if so, what reasons had been alleged by the parish councils for his dismissal.—Mr. SINCLAIR replied: I have to reply to the first part of the question in the affirmative, but, as the honourable Member is aware, the Board has no power to interfere in the matter of dismissal of a parochial medical officer. Dr. Duncan, who is the medical officer of the three very large parishes named, is of advanced years, and I understand that as he has failed to implement an agreement made with him three years ago to appoint an assistant he has been asked to resign as from July 1st next. I am not aware that unfitness or incompetency of any kind has been alleged.

A Case of Phosphoric Necrosis.

Sir CHARLES DILKE asked the Secretary of State for the Home Department whether his attention had been called to the fact that a further death from necrosis in the match trade was reported for January of this year; and whether, in view of the international interest taken in the question of phosphorus poisoning, he would issue to the House full details of this case as was done by the then Secretary of State with regard to the cases occurring in 1905.—Mr. GLAUCOWSKI (in a written answer) replied: Yes, Sir. When I heard of this (in a regrettable occurrence I at once directed a visit to be paid to the factory by the Chief Inspector of Factories and Mr. Cunningham, one of my Assistant Under Secretaries of State. They have made a report to me which I shall lay upon the table of the House, but I may say that they discovered no breach of the rules. The case was a very exceptional one, the deceased being a man with one leg who had to work in a sitting posture and had also an inveterate habit of chewing tobacco. For both these reasons he was exposed to danger which his fellow workers escaped. He had, moreover, worked in yellow phosphorus for years before special rules were established, and had, it is known, long had the seeds of necrosis in his system. I shall propose an amendment of the special rules to prohibit the chewing of tobacco.

Notes, Short Comments, and Answers to Correspondents.

A RETIRED MEDICAL MAN AND GOOD OPENINGS.

In the issue of THE LANCET of Feb. 23rd the following advertisement was published:—

Wanted, by Medical Man with some private means but limited capital, a small PRACTICE or NUCLEUS, with good scope for increase. Preferably unopposed and in Country district, South of England for choice. Moderate sized house, with grounds, &c., necessary. Premium must be small.—Address, No. 235, THE LANCET Office, 423, Strand, W.C.

One of the replies to the advertisement has been forwarded to us by the advertiser and we think merits publication, as it comes from a medical man but shows a remarkable ignorance of the rules that should govern the mutual conduct of members of a profession:—

6, Stone St. Faversham, Kent, Feb. 24, 07.

In replying mention No. 235, LANCET.

DEAR SIR.—An excellent opportunity occurs about 23 miles from London (South) where there is a population of over 7000 with one unpopular medical man. There is no doubt a good practice to be made in a short time by an energetic cyclist. A wealthy resident has two good houses empty with grounds to let at £25 and £55. He is desirous of getting another doctor there for himself and his tenants, as well as, for others who are not satisfied with the present man. There is a third good house to let in a prominent situation at £43. Three reception-rooms, six bedrooms and garden, coach-house and stables can be had, Gravel soil, lovely country, High ground. Large works are about to be begun in this place employing thousands of hands, so that now is the time for anyone to start. This scheme will increase the population to a great extent, bringing large numbers of all classes and improve the place beyond recognition. I can insure the support of any good man by my wealthy friend, the Rector and other friends I have there.

I am asking a small premium to be agreed upon at an interview. I should say that 5 hundred or more would be done the first year; but the possibilities of the place as a field for medical work are very good.

I am, yrs. faithfully,

F. F. JAY, M.D.

I am a retired doctor, and have been asked to find a man to take this fine chance up.

This is not the first time that it has been brought to our notice that Dr. Jay replies to advertisements in THE LANCET with offers to introduce the advertiser to remunerative practices in return for a premium. We recommend our advertisers not to reply to Dr. Jay. The medical agents are much more likely to be able to introduce advertisers to the opening which they require than any medical man, retired or otherwise, can possibly be. A medical man may know of a good opening in his immediate neighbourhood, but we do not admire the frame of mind which tempts him to try to obtain a small premium for the information. All such openings must be at the expense of some medical colleagues already resident in the neighbourhood.

THE ARGEMONO MEXICANA.

To the Editors of THE LANCET.

SIR.—In reply to "Enquirer" in THE LANCET of Feb. 16th, p. 477, the plant to which he refers, *Argemone Mexicana*, was formerly considered to contain morphine, but this alkaloid has been proved to be absent by J. O. Schlatterbeck (Journal of the American Chemical Society, Vol. XXIV, p. 238). The plant contains the alkaloids berberine and scopoline, of which the latter is identical with the base erroneously called argemone by Peckolt. Schlatterbeck found a considerable quantity of potassium nitrate among the inorganic salts present in the plant. As the drug has attracted some little attention in the United States there should be no difficulty in obtaining preparations of it by entering the name of a wholesale druggist.

I am, Sir, yours faithfully,

HISMAUS.

TORQUE.

To the Editors of THE LANCET.

SIR.—In reading the last paragraph under the heading of "Looking Back" in THE LANCET of Feb. 23rd I was puzzled as to the meaning of the word "torque" and could not find it in any dictionary at my disposal. Then it dawned on me that the word was probably "torque," meaning a twisted metal collar worn around the neck by the ancient Gauls and British chiefs and apparently originating with the Persians. It was made of gold or bronze and the ends of the broken circle usually terminated in ornamental knobs or in turned back hooks for interlocking. I have learnt that in B.C. 351 Titus Manlius Imperator Torquatus wore one which was a personal trophy, hence the name in Falstaff's "Terms in Art." There are also several in the gold ornaments room at the British Museum. Some are in the Sir A. W. Franks's collection and others are in the Morel collection. One gold torque is variant spelling adopted by the British Museum. One gold torque is said to have been found at a depth of eight feet. Another large

gold one was found in 1856 at Ashill, near Watton, in Norfolk, and a reference is given to Norfolk Archaeology, Vol. V., p. 193. Others were found at Boyton in Suffolk one in Lincolnshire, four near Elgin in Scotland, one at Ballinacree, near Boyle, co. Roscommon, and a large one at Castlepoint, Dover, presented by Mr. Robert Chignell in 1881. Several bronze ones were obtained from Gaulish cemeteries in the department of the Marne, France. It appears that they often formed a great part of the wealth of the wearer. I see that the Welsh call it "torch" and "Gorthorch." If "torque" was the word meant, this note may perhaps interest some of your readers.

I am, Sir, yours faithfully,

London, Feb. 25th, 1907.

X. Y. Z.

HUDIBRASTIC LANGUAGE.

A CORRESPONDENT has asked us the meaning that it was intended to convey when using the expression "Hudibrastic vocabulary" in a leading article last week. The language of Hudibras, as described by his immortal creator, is almost precisely that of certain modern text-books, the contents of which are often worthy of better exposition. The more grotesquely involved the language of such books is, the more closely is it humbly followed by certain modern advertisements. The following is Butler's description of his hero's language:—

"His speech,

In loftiness of sound, was rich
A Babylonish dialect,
Which learned pedants much affect;
It was a party-colour'd dress
Of patch'd and piebald languages;
'Twas English cut on Greek and Latin,
Like fustian heretofore on satin;
It had an odd promiscuous tone,
As if he had talk'd three parts in one.
Which made some think, when he did gabble,
He had heard three labourers of Babel,
Or Cerberus himself pronounce
A leash of languages at once."

THE COMPOSITION OF BOOT BLACKING.

To the Editors of THE LANCET.

SIR.—Having seen a paragraph in your issue of Feb. 16th referring to the alleged evil effects of sundry boot-blackings, we, as one of the very oldest firms of blacking manufacturers, write to bring to your notice the following facts. At the exhibition of 1882 we were awarded the only gold medal for blacking; before the award was made our Meltonian blacking was subjected to the most severe analysis and it was proved that there was absolutely nothing of an injurious nature in it, but that, on the contrary, all the ingredients tended to soften and preserve the leather. Our endeavour has always been to keep our preparations up to this very high standard; that our endeavour has been successful is shown by their unique reputation, not only in this country but all over the civilised world. Our reason for writing is that we feel, as no doubt other high-class manufacturers will feel also, that a charge has been brought against the whole trade that is absolutely false in the case of those makers who have a reputation to lose.

We are, Sir, yours faithfully,

E. BROWN AND SONS,
Manufacturers of Meltonian blacking and other boot
preparations.

7, Garrick-street, W.C., Feb. 25th, 1907.

THE NATIONAL REGISTRATION OF PLUMBERS.

THE clerk to the Worshipful Company of Plumbers has forwarded to us a facsimile of the portable registration ticket for the year 1907 which is granted by the company to a registered plumber. The ticket contains spaces for the name and address of the registered plumber and for his signature, while the date of the year for which the certificate is valid is printed in large type across the face. The colour of the date will vary each year and for the current year it is of a purplish-pink colour. Complaints, if any such exist, of work done by registered plumbers should be addressed to the Worshipful Company of Plumbers in order that the company may deal with the matter in the public interest. Plumbing is, of course, so important a trade as regards sanitation that it is necessary for the health of the public that its members should have some means of distinguishing between the competent and the incompetent as it is in the case of those to whom they intrust the care of their bodies, and we are therefore glad to congratulate the Plumbers' Company upon the steps which it has taken with a view to secure this desirable result.

THE FINGER-STALL TEST.

THE finger-stall test is designed to avoid certain deformities of the mouth which Dr. T. P. Pedley maintains are caused by the sucking of ordinary rubber teats and "baby comforters." Dr. Pedley attributes to the unnatural pressure of most of the teats in use upon the baby's jaws certain deformities of the roof of the mouth and the interior of the nose which are subsequently followed, he says, by obstructions to breathing through the nose. When the shape and pliability of the test are that of a good-sized rubber finger-stall the infant requires to make little effort in order to attract the milk. The finger-stall test is supplied by Messrs. Lynch and Co., Limited, of Silver-street, Falmouth, London, E.C.

SHERBATT AND HUGHES, 60, Chandos-street, London, W.C.

The Journal of Obstetrics and Gynaecology of the British Empire. Editor: Charles J. Cullingworth, M.D. Assistant Editor: John S. Fairbairn, M.B. Volume X. July to December, 1906. Price 12s. 6d. net.

SMITH, ELDER, AND CO., 15, Waterloo-place, London, S.W.

Saint Bartholomew's Hospital Reports. Edited by A. E. Garrod, M.D., and W. McAdam Eccles, M.S., F.R.C.S. Vol. XLII. Price not stated.

WILSON, EFFINGHAM, 54, Threadneedle-street, London, E.C.

The Cornish Tin Mining Manual. By H. A. H. Russell. Price 1s.

YEAR BOOK PUBLISHERS, Chicago. (G. GILLIES & CO., 23, Gibson-street, Hillhead, Glasgow.)

The Practical Medicine Series. Under the General Editorial Charge of Gustavus P. Head, M.D. Volume X. Skin and Venereal Diseases, Nervous and Mental Diseases. Edited by W. L. Baum, M.D., Hugh T. Patrick, M.D., William Healy, A.B., M.D. Price 5s.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

DOBIE, W. HENRY, M.B., C.M. Edin., M.R.C.S., has been appointed Honorary Surgeon to the Chester Infirmary.
GLEGG, R. ASHLEIGH, M.D., Ch.B. Edin., D.P.H., has been appointed Assistant Medical Officer of Health of the County of Ayr.
GOULD, HAROLD UTTERTON, M.A., M.B., B.C. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer by the Shaftesbury (Dorset) Board of Guardians.
GREFF, T. A., M.D., F.R.C.S. Edin., has been appointed Surgeon in Charge of the Nose, Throat, and Ear Department at the Bristol Royal Hospital for Sick Children and Women.
GROVES, B. J. C., M.B., Ch.B. Edin., has been appointed House Surgeon at the Brighton, Hove, and Preston Dispensary.
HAMIL, THOMAS FRANCIS, L.R.C.P., L.R.C.S., L.M. Edin., has been appointed Medical Officer of Health for the Shaftesbury (Dorset) Rural District.
HARTIGAN, T. J. P., F.R.C.S. Eng., has been appointed Dermatologist to the Alexandra Hospital, Queen-square, W.C.
JOHNSTONE, G. A., M.B., Ch.B. Aberd., has been appointed House Surgeon at the Bangor Infirmary.
MACPHEAL, DUGALD H. M.B., Ch.B. Glasg., has been appointed Extra Physician to the Glasgow Central Dispensary.
MAY, W. NORMAN, M.B., B.S. Lond., has been appointed Resident Medical Officer at the East London Hospital for Children and Dispensary for Women.
SEWELL, D. LINDLEY, M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Assistant Surgeon to the Manchester Ear Hospital.
WILLIAMS, LIONEL HENRY, M.D. Durh., M.R.C.S., L.S.A., has been appointed Deputy Medical Officer for the Thornbury (Gloucestershire) District and Workhouse.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN UNIVERSITY.—McRobert Fellowship for Cancer Research. Salary £200 to £250.
ASTON-UNDER-LYKE DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—House Surgeon. Salary £120 per annum and fees. Also Junior House Surgeon for six months. Salary at rate of £50 per annum. Board, rooms, washing, &c., in each case.
BIGGLESWADE RURAL DISTRICT COUNCIL.—Medical Officer of Health. Salary £100 per annum.
BIGGLESWADE URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary £25 per annum.
BIRKENHEAD AND VIRAL CHILDREN'S HOSPITAL, Woodchurch-road, Birkenhead.—House Surgeon. Salary £100, with board, residence, and laundry.
BIRKENHEAD UNION INFIRMARY, WORKHOUSE, AND SANATORIUM.—Resident Assistant Medical Officer. Salary £120 per annum, with board, washing, and apartments.
BIRMINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Surgical Officer. Salary £104 per annum, with apartments, rations, &c.
BODMIN, CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £140 a year, rising to £160, with rooms, rations, laundry, and attendance.
BRIGHTON, SUSSEX COUNTY HOSPITAL.—Third House Surgeon, unmarried. Salary £50 per annum, with board and residence.
BRISTOL EYE HOSPITAL.—House Surgeon. Salary £80, with board and residence.
BRISTOL GENERAL HOSPITAL.—Pathologist. Salary £240 per annum.
CANCER HOSPITAL, Fulham-road, London, S.W.—House Surgeon. Salary £80 per annum.
CARLISLE, CUMBERLAND INFIRMARY.—Resident Medical Officer as House Physician and House Surgeon for six months each. Salary at rate of £80 and £100 per annum respectively, with board, lodging, and washing.
CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—Assistant Surgeon.
CHARING CROSS HOSPITAL.—Medical Registrar. Salary £40 per annum, with lunch and tea.
CHOTSDON GENERAL HOSPITAL.—Junior House Surgeon. Salary £60, with board, laundry, and residence.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant Resident Medical Officer for six months. Salary at rate of £50 a year, with board, lodging, and laundry.

ECOLETS AND PATRICROFT HOSPITAL.—House Surgeon, unmarried. Salary £70 per annum, with board and washing.

GLASGOW EYE INFIRMARY.—Resident Assistant House Surgeon. Salary £75, with apartments and board.

GROCCERS' COMPANY'S SCHOLARSHIPS.—Two Scholarships for Research in Sanitary Science. Value £300 a year, with allowance to meet cost of apparatus, &c.

HERTFORD GENERAL INFIRMARY.—Resident House Surgeon and Secretary. Salary £100 per annum, with board, washing, and apartments.

HOSPITAL FOR EPILEPSY AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale.—Resident Medical Officer for six months. Salary at rate of £50 a year, with board and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Anaesthetist.

LEKESTON, BOROUGH OF.—Medical Officer (female). Salary £100 per annum.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTON DISPENSARY.—Assistant House Surgeon. Salary £75 per annum, with board, washing, and apartments.

LIVERPOOL DAVID LEWIS NORTHERN HOSPITAL.—House Surgeon, also House Physician. Salary £60 each per annum, with residence and maintenance.

LIVERPOOL INFIRMARY FOR CHILDREN.—Assistant House Surgeon for six months. Salary £30, with board and lodging.

LIVERPOOL ROYAL SOUTHERN HOSPITAL.—Three House Physicians and Three House Surgeons. Salary at rate of £60 per annum, with board and residence.

MANCHESTER CHILDREN'S HOSPITAL.—Junior Resident Medical Officer, unmarried, for six months, eligible for election as Senior Medical Officer for another six months. Salaries at rate of £80 and £100 a year, with board and lodging.

MANCHESTER EAB HOSPITAL.—Clinical Assistant for six months.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Fourth House Surgeon for six months. Honorarium of £22, with board and residence.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon, all for six months.

NORTHAMPTON, SAINT ANDREW'S HOSPITAL FOR MENTAL DISEASES.—Third Assistant Medical Officer. Salary £160 per annum, rising to £200, with board, lodging, and washing.

READING, ROYAL BERKSHIRE HOSPITAL.—House Physician, also Assistant House Surgeon. Salaries £80 and £60 per annum respectively, with board, lodging, and washing.

ST. LEONARDS-ON-SEA, CHELSEA HOSPITAL FOR WOMEN, COVINGTON CENT HOME.—Honorary Medical Officer.

ST. MARLYBOKE GENERAL DISPENSARY, 77, Welbeck-street, Cavendish-square.—Honorary Obstetric Physician.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon for six months. Salary £31, with board, residence, and laundry.

WANDSWORTH UNION INFIRMARY, St. John's Hill, near Clapham Junction.—Male Junior Assistant Medical Officer, unmarried, for six months. Salary at rate of £100 a year, with board, lodging, and washing.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon, unmarried. Salary £50 per annum, with board, residence, and washing.

Births, Marriages, and Deaths.

BIRTHS.

AUDEN.—On Feb. 21st, at Bootham, York, the wife of George A. Auden, M.A., M.D. Cantab., of a son.
BADCOCK.—On Feb. 23rd, at Standerwick, Margate, the wife of J. H. Badcock, L.D.S., M.R.C.S., L.R.C.P., of a daughter.
MURRAY.—On Feb. 21st, at 2, Chevening-road, Kilburn, N.W., the wife of B. Galway Murray, M.R.C.S., L.R.C.P., D.P.H., of a daughter.
THOMPSON.—On Feb. 20th, at 1, Hyde-gardens, Clarendon-road, Leeds, the wife (née A. B. Hooper, M.B., B.S. (London)) of Walter Thompson, F.R.C.S., of a daughter.

MARRIAGE.

SARGENT-ASHMAN.—On Feb. 21st, at the Congregational Church, Snayd Park, Bristol, by the Rev. R. Glover, D.D., and the Rev. E. Medley, B.A., Percy W. G. Sargent, M.A., M.B., B.C., F.R.C.S., of Harley-street, W., eldest son of Mr. and Mrs. B. G. Sargent of Pembroke-road, Clifton, to May, younger daughter of Sir Herbert and Lady Ashman of Cook's Folly, Bristol.

DEATHS.

FOULDS.—On Feb. 25th, at Severn House, Droitwich, aged 11 months, Clifford Samuel, the beloved child of Dr. and Mrs. Foulds.
FRANCIS.—On Feb. 20th, at Clarence-road, Teddington, Thomas Francis, L.R.C.P., M.R.C.S., L.S.A., in his 85th year.
MURRAY.—On Feb. 1st, at Graaff Reinet, Cape Colony, Frank Fred Murray, B.A., M.B., B.C. Cantab., F.R.C.S. Eng., in his 34th year.
NORRIS.—On Feb. 22nd, at Fawcett-road, Southsea, Edwin John Norris, M.R.C.S., L.R.C.P., L.S.A., aged 45.
PEAKE.—On Feb. 16th, at 22, Goldhawk-road, W., Rowland Plabatt only son of Solomon Pake, M.R.C.S., aged 21 years.

N.B.—A fee of 6s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

ENTRANCE LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M.: Demonstration.—Dr. W. Wingrave: Clinical Pathology.

URSDAY (7th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Mr. Hutchinson: Clinique (Surgical). 5.15 P.M.: Lecture.—Dr. A. Whitfield: Lichen Planus. POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: Operations. X Rays. Mr. Dunn: Diseases of the Eye. 5 P.M.: Lecture.—Mr. Keetley: Appendicostomy.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—2.30 P.M.: Gynecological Operations (Dr. Gilles). Cliniques.—Medical (Dr. Whitting), Surgical Out-patient (Mr. Carson). 3 P.M.: Clinique.—Medical In-patient (Dr. Chappell).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. G. Rankin: Medicine. 3.15 P.M.: Sir W. Bennett: Surgery. 4 P.M.: Dr. H. Cooper: Radiography. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat. 3.15 P.M.: Special Lecture.—Sir Wm. Bennett: Stiffness of the Spine.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—6 P.M.: Chesterfield Lecture.—Dr. M. Dockrell: On the Usefulness or Otherwise of the Electrical Methods of Treatment in Skin Diseases.

CHANCERY CROSS HOSPITAL.—4 P.M.: Mr. Gibbs: Demonstration (Surgical). (Post-Graduate Course.)

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M.: Lecture.—Dr. Garrod: Cholera.

WEDNESDAY (8th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Mr. H. L. Eason: Clinique (Eye).

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—10 A.M.: Dr. M. Moulton: Gynecological. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. X Rays. Dr. Abraham: Diseases of the Skin. 5 P.M.: Lecture.—Dr. S. Taylor: Treatment of Enteric Fever.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—9.30 A.M.: Clinique.—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Surgical Operations (Mr. Edmunds). Cliniques.—Medical Out-patient (Dr. Auld), Ophthalmological (Mr. Brooks). 3 P.M.: Clinique.—Medical In-patient (Dr. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. B. Bradford: Medicine. 3.15 P.M.: Mr. McGavin: Surgery. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—1.30 P.M.: Clinical Lecture.—Dr. Batten: Subacute Combined Degeneration of Spinal Cord.

SATURDAY (9th).—POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: Operations. X Rays.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed exclusively "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, and WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners. Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1906, which was completed with the issue of Dec. 29th, were given in

VOLUMES AND CASES.

VOLUMES for the second half of the year 1906 are now ready. Bound in cloth, gilt lettered, price 18s., carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2s., by post 2s. 3d.

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METEOROLOGICAL READINGS.

(Taken daily at 8.50 a.m. by Stewart's Instruments.)

THE LANCET OFFICE, Feb. 25th, 1907.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Relative Humidity.	Solar Radiation in Fathoms.	Maximum Temp. in Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb 22	29.740	N.W.	...	75	40	35	34	35	Cloudy
" 23	29.844	N.	...	60	41	27	...	28	Fine
" 24	30.220	W.	...	79	44	28	...	30	Fine
" 25	30.242	W.	...	63	50	30	43	44	Overcast.
" 26	30.324	W.	...	69	45	42	42	43	Overcast.
" 27	30.476	N.	...	58	43	42	42	45	Cloudy
" 28	30.578	S.W.	...	44	44	36	37	37	Foggy

During the week marked copies of the following newspapers have been received:—Evening Telegraph (Toronto), Shipley Times, North Express, Weekly Times and Telegraph, Fort-wear, Nottingham Daily Express, Boylay Gazette, The Baker and Confectioner, Newcastle Chronicle, Bristol Times, Manchester Courier, Standard, Yorkshire Telegraph, Tribune, Daily Chronicle, Telegraph, Morning Post, Morning Leader, Liverpool Post, Sheffield Telegraph, Coroner's Herald, Local Government Journal, Carlisle Express, &c.

DEFECTIVE CHILDREN.

To the Editors of THE LANCET.

SIRS,—In reply to "Quaerens" in THE LANCET of Feb. 16th, p. 478, and to another correspondent in your last issue, may I mention in this regard Shuttleworth's "Mentally Deficient Children: their Treatment and Training" (Lewis, Gower-street, W.O.). The second edition contains chapters on Provision for Special Classes under the Act of 1889.

I am, Sirs, yours faithfully,

RESPONDENTS.

Feb. 20th, 1907.

Diplomate.—Information with reference to the Brussels M.D. will be found in the Students' Number of THE LANCET, Sept. 1st, 1906, p. 564. The degree is registrable in this country if obtained prior to 1886. The secretary of the Brussels Graduates' Association is Dr. F. H. Edwards, whose address is Camberwell House, Peckham-road, London, S.E. Dr. A. R. Henchley, of 1, London-road, Canterbury, publishes a pamphlet containing notes on the Brussels M.D. examination and examples of the questions set.

F. J.—There is no reason why the parties should not marry supposing that such portion of the family history as is common to both is good. In the other event they should not marry, as the risk of perpetuating any taint would be considerable.

H. C. G.—We do not think our contributor's amusing note can be regarded as a serious contribution to surgery.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynaecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopaedic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

TUESDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (8.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (6th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopaedic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Free (2 P.M.), Royal Orthopaedic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

THURSDAY (7th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynaecological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopaedic (9 A.M.), Royal Free (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynaecological, 2.30 P.M.).

FRIDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopaedic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (9th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (8.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (8.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (4th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—9 P.M.: Lottissian Lecture.—Dr. C. B. Beaver: The Diagnosis and Localisation of Cerebral Tumours.

TUESDAY (5th).—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M.: Papers.—Dr. F. H. Thiele: Two Cases of Cystinuria with Excretion of Diamines.—Dr. H. I. Spriggs: The Excretion of Creatinin in Pseudohypertrophic Muscular Dystrophy.—Dr. A. R. Russell: A Case of Sulphæmoglobinæmia.—Dr. O. Grünbaum: An Apparatus for Estimating the Electric Conductivity of Small Quantities of Liquids.—Dr. A. H. Garrod and Dr. T. W. Clarke: A New Case of Alkaptonuria.

WEDNESDAY (6th).—OBSTETRICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M.: Specimens will be shown by Dr. A. Routh, Dr. Blacker, and Dr. C. H. Roberts. Short Communication.—Mr. A. Doran: After-history of a Case of Fibroid of Broad Ligament associated with an Ovarian Cyst reported in Vol. XLIII. of the Society's Transactions. Inaugural Address.—The President (Dr. H. R. Spencer).

SOCIETY OF ARTS (John-street, Adelphi, W.C.).—8 P.M.: Prof. W. B. Dawkins: The Discovery of the South-Eastern Coalfield.

THURSDAY (7th).—NEUROLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.).—8.30 P.M.: Paper.—Dr. H. Howell and Dr. L. Jones: The Effects of Cervical Ribs. HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M.: Discussion on the Diagnosis and Treatment of Fractures in the Neighbourhood of a Joint (opened by Mr. W. Cheyne who will illustrate his remarks with skiagraphs). Prof. H. Marsh, Mr. B. Owen, Mr. P. Gould, Mr. A. Lane, Mr. R. Jones (Liverpool), and Mr. L. Thomas (Cardiff) have promised to take part in the Discussion.

NORTH-HAST LONDON Ophthalmic SOCIETY (Tottenham Hospital, N.).—4 P.M.: Clinical Cases.

FRIDAY (8th).—WIMBLEDON AND DISTRICT MEDICAL SOCIETY (Worple Hall, Worpole-road, Wimbledon).—9 P.M.: Paper.—Dr. W. S. Colman: Pitfalls in Diagnosis.

CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M.: Papers.—Dr. G. A. Sutherland: The Medical Treatment of Congenital Pyloric Stenosis.—Dr. A. F. Voelcker: Some Cases of Pyloric Stenosis in Infants.—Mr. F. P. Burghard: The Surgical Treatment of Congenital Pyloric Stenosis.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION (11, Chandos-street, Cavendish-square, W.).—4.30 P.M.: General Meeting. Exhibition of Cases and Specimens.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (4th).—MEDICAL GRADUATES' COLLEGE AND POLYTECHNIC (22, Chancery-street, W.O.).—4 P.M.: Dr. C. Fox: Clinique (Skin). 5.15 P.M.: Lecture.—Dr. W. D'Este Emery: Lumbar Function, its Value in Diagnosis and Treatment.

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—12 noon: Pathological Demonstration.—Dr. G. C. Low: 2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: Operations. X Rays. Mr. Dunn: Diseases of the Eye. 5 P.M.: Clinical Lecture.—Mr. Paget.

NORTH-HAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—8.30 A.M.: Clinique.—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Cliniques: Medical Out-patient (Dr. Whymper), Throat, Nose, and Ear (Mr. Carson); X Ray Demonstration (Dr. Pirie).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Sir D. Duckworth: Medicine. 3.15 P.M.: Mr. W. Turner: Surgery. 4 P.M.: Dr. St. John Thomson: Diseases of the Throat, Nose, and Ear. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat. 2.30 P.M.: Special Lecture.—Sir Dyce Duckworth: Treatment of Pneumonia.

TUESDAY (5th).—MEDICAL GRADUATES' COLLEGE AND POLYTECHNIC (22, Chancery-street, W.O.).—4 P.M.: Dr. G. A. Sutherland: Clinique (Medical). 5.15 P.M.: Lecture.—Dr. G. H. Graham: Radium and its Medical Uses.

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—10 A.M.: Dr. M. Moullin: Gynaecological, 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. X Rays. Dr. Abraham: Diseases of the Skin. 5 P.M.: Lecture.—Mr. Bidwell: Plaster-of-Paris Splints.

NORTH-HAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—10.30 A.M.: Clinique.—Medical Out-patient (Dr. Auld). 2.30 P.M.: Surgical Operations (Mr. Carson); Cliniques: Gynaecological Out-patient (Dr. Giles), Surgical Out-patient (Mr. Edmunds). 4.30 P.M.: Lecture.—Dr. G. F. Still: Nervous Children.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. R. T. Hewlett: Medicine. 3.15 P.M.: Mr. Carless: Surgery. 4 P.M.: Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen's-square, Bloomsbury, W.O.).—3.30 P.M.: Clinical Lecture.—Dr. Batten: Syringomyelia.

CHARING CROSS HOSPITAL.—4 P.M.: Demonstration.—Dr. Forsyth: (Medical). (Post-Graduate Course.)

WEDNESDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYTECHNIC (22, Chancery-street, W.O.).—4 P.M.: Mr. P. Paton: Clinique (Surgical). 5.15 P.M.: Lecture.—Dr. D. Grant: Laryngeal Phthisis.

POST-GRADUATE COLLEGE (West London Hospital, Hammer-smith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. 2.30 P.M.: Operations. X Rays. 5 P.M.: Mr. L. Williams: Fractures of the Jaw and their Treatment.

NORTH-HAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—2.30 P.M.: Cliniques.—Dermatological (Dr. Meachen), Ophthalmological (Mr. Brooks), Medical Out-patient (Dr. Whymper).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. F. Taylor: Medicine. 3.30 P.M.: Mr. Gargill: Ophthalmology. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 11 A.M.: Eye. HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M.: Lecture.—Dr. Hartley: Bronchiectasis.

ABSTRACT OF

The Goulstonian Lectures

ON

CERTAIN ACUTE INFECTIVE OR TOXIC
CONDITIONS OF THE NERVOUS
SYSTEM.

Delivered before the Royal College of Physicians of London

By E. FARQUHAR BUZZARD, M.D. OXON.,
F.R.C.P. LOND.,

ASSISTANT PHYSICIAN TO THE NATIONAL HOSPITAL FOR THE PARALYSED
AND EPILEPTIC, QUEEN-SQUARE, TO THE ROYAL FREE HOSPITAL,
AND TO THE BELGRAVE HOSPITAL FOR CHILDREN.

LECTURE I.

Delivered on March 5th.

MR. PRESIDENT AND GENTLEMEN,—If it were not a duty based upon tradition it would still be a spontaneous wish of my own that the opening words of these lectures should frankly express my appreciation of the honour which you have paid me in placing them in my hands. An honour in itself, it gains enhancement from a reference to the many distinguished names of those who have in the past filled, and worthily filled, the position in which I find myself to-day. A sense of diffidence must necessarily be one's lot in such circumstances, but encouragement and stimulation may be derived from the reflection that few, if any, of my predecessors have failed to justify their early distinction by their later work. An apology is owing for the somewhat vague title I have given to my subject and this can be best offered in the shape of a short explanation. There has never been in my mind any idea of embracing within these lectures the discussion of all the numerous and interesting questions concerning acute infective or toxic conditions of the nervous system. On the contrary, it has been my desire to confine my attention to a comparatively small group of diseases and to a few important points which arise in connexion with them.

The leading characteristic of the group which I have chosen is easily expressed in two words—acute paralysis; to be more precise, I wish to deal with the class of case in which a rapidly developed motor paralysis, involving the whole, or nearly the whole, of the voluntary musculature, is the important and conspicuous feature. To be included in this category a case must be acute, requiring only a few hours or a few days for its development, and it must present good grounds for the belief that it is of infective or toxic origin, certainty in this regard being often impossible in the incomplete state of our bacteriological knowledge. If we search for cases answering to this description we shall find them classified under the following titles: (1) acute anterior poliomyelitis; (2) Landry's paralysis; (3) acute toxic polyneuritis; and (4) acute ascending or diffuse or disseminated myelitis. Some of these titles have synonymous alternatives, and some, as we shall see later, are open to objection; but they are familiar terms, conveying some meaning to most of us, and will suffice for the purpose of rough classification. Doubtless you will agree that the differential diagnosis between these four conditions may in any particular patient form one of the most difficult of bedside problems, and that the questions of their exact pathological basis, of their pathogenesis, of their relation to one another and to other morbid conditions, of their specificity or non-specificity are all worthy of detailed debate, even if they are not all ripe for successful settlement. The only excuse I can offer for attempting this task is that I have had the opportunity of observing clinically and examining anatomically a considerable number of cases which fall within this category.

The opportunities for clinical observation and accession to notes I owe in many instances to the generosity of my colleagues at the National Hospital for the Paralyzed and Epileptic and the Royal Free Hospital, to whom I desire to acknowledge my gratitude. For ready help and advice in the preparation of specimens I am deeply indebted to Dr. Gordon M. Holmes and Dr. T. Grainger Stewart of the former hospital, Dr. Helen Chambers and Dr. Evelyn Woodward

No. 4353.

have also spared no trouble in providing me with material from the pathological laboratory of the Royal Free Hospital for a special investigation.

For the better understanding of what is to follow and for the purpose of avoiding the unnecessary repetition of elaborate descriptions I shall employ the time at my disposal to day in laying before you as briefly as I can the results of laboratory investigations on the reaction of various elements of the nervous system to toxic agents. In doing this I shall confine myself almost entirely to the motor structures on account of their special relation to the questions at issue, but shall include for the same reason voluntary muscle which is inseparably and importantly connected with those structures.

MOTOR CELLS.

The large Betz cells of the motor cortex, the anterior horn cells of the spinal cord, the cells of various motor cranial nerves, such as the hypoglossal and the facial, as well as those of the nucleus ambiguus, belong to the same "stichochrome" class, and have been specially studied by many observers with reference to their modes of reaction to toxins. The method of Nissl has been the one almost uniformly employed and the results obtained by this method have practically become the standards of cell change.

There are important points to be remembered in connexion with the alterations in cellular structure. In the first place cell changes which are produced by toxins cannot be certainly distinguished from those which are the result of other influences. The term "axonal reaction" is applied to those changes which take place in the cell body soon after its axis-cylinder process has been divided or torn or subjected to some destructive or degenerative influence, and indicates a cellular condition which closely resembles that produced by toxic agents. In estimating cell changes, therefore, in toxic conditions it has always to be carefully considered how far they are dependent on the direct action of the toxin on the cells themselves and how far they are representative of "axonal reaction," due to the destructive or degenerative influence of the toxin on their axis-cylinder processes. It must, however, be conceded that very marked and even fatal cell changes can be produced by toxins independent of axonal reaction. A conspicuous example of this is seen in acute diphtheritic toxæmia in cases which have died from cardiac failure during the early stage of the disease. Bolton has recorded in this condition acute degenerative changes in the cells of the nucleus ambiguus associated with no demonstrable alteration in the vagus nerve.

In the second place the changes produced in the microscopical appearance of nerve cells under the influence of high temperatures and of artificial anæmia have been extensively studied by Sarbo, Mott, Ballet and Dutil, Goldscheider and Flatau, Marinesco, and others. The cell appearances, under these two conditions, are often not widely dissimilar at certain stages, and sometimes not unlike those produced by toxic agents. The frequent association of toxæmia with pyrexia necessitates, therefore, critical consideration of the relative potency to be attached to those two factors in the causation of structural changes in the nerve cell.

Finally, it is stated by F. Pick, van Gehuchten, Gordon Holmes, and others that unusual cellular activity is also associated with modifications of the histological cell picture which resemble some of those I am about to describe in toxic conditions.

Viewed in the light of the Nissl method, which depends for its usefulness upon the affinity displayed by certain parts of the cell for the basic aniline dyes, the large multipolar motor cells of the central nervous system may be regarded, arbitrarily, as composed of two substances. The one substance is stained by the basic dye, is basophilic, and may be called chromatic; it is found in the nucleolus, the nuclear membrane, and in certain masses which lie within the protoplasm of the cell body and its dendrites and which have been variously termed Nissl bodies, chromatin granules, or tigroid. (Figs. 1 and 2.) The other substance is unstained by the Nissl method on account of its non-basophilic or acidophilic properties and may be called achromatic. According to the researches of Held, Ramon y Cajal, and others, who have employed special methods for its detection and study, this achromatic substance is found throughout the cell body and axis-cylinder process in the form of a fine reticulated granular network, in the meshes

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of which are seen the chromatin granules. A substance of somewhat similar reaction is also found in the more central parts of the nuclear body and in the very centre of the nucleolus. This achromatic material is probably the essential part of the cell protoplasm. To complete the picture of a normal cell of this class stained by the Nissl method it has only to be remembered that its shape is polygonal, with concave borders between the bases of the processes; that the nucleus is round, generally central in position, with a centrally placed nucleolus; and that the chromatin granules in the cell body are variable in size and shape but are usually arranged along pericentric lines roughly parallel with the cell borders. Lastly, it must not be forgotten that a mass of greenish-yellow pigment is normally present in many cells, certainly after 20 years of age.

ACUTE TOXIC CELL CHANGES.

Under this heading we have to deal with a variety of appearances and it is difficult to say for certain in what way they are related one to another.

Early types.—1. The cell has hardly altered in shape but the concave borders have become straight or slightly convex; the nucleus is central and perhaps a little swollen; the chromatin granules in the cell body are breaking up into finer particles either in patches or, more commonly, around the nucleus (perinuclear chromatolysis), or near the periphery (peripheral chromatolysis). (Fig. 3.) 2. The cell is swollen moderately, the nucleus is central, and rather enlarged. The whole cell body is stained somewhat deeply probably owing to the fact that the chromatin bodies have broken up into fine particles and that the achromatic substance has become more basophile. The contrast between the chromatic and achromatic parts is consequently much less marked and the staining of the achromatic substance renders the cell processes more distinct and more easily traced away from the cell. (Figs. 4 and 5.)

Moderate type.—This type may probably be secondary to either of the early types. (Fig. 6.) The cell is round and swollen; the nucleus is displaced from the centre, is often less spherical, more oval or reniform in shape, and contains an excentric nucleolus. There are no longer any chromatin granules in the cell body or only a few remnants may be seen on the periphery, in the bases of the dendrites, or, in other cases, close to the nucleus (complete or almost complete chromatolysis). The cell protoplasm takes on a pale homogeneous or faintly granular stain, which, if the process continues, becomes less and less evident. Up to this stage it is practically certain that recovery may take place under favourable conditions.

Advanced types.—1. The cell is globular in shape with few or no distinct processes, the nucleus, with wrinkled or distorted membrane, has appeared on the surface and is on the point of being extruded or is actually outside the cell; the cell body presents a pale homogeneous and sometimes rather vitreous appearance with no trace of chromatin granules. (Fig. 7.) 2. More rarely the cell has retained something of its original shape with an irregular outline, but the whole cytoplasm, together with the nucleus, is of a uniform lustreless colour, the nucleolus alone standing out on account of its somewhat deeper hue. The first of these two advanced types must be regarded as fatal as soon as the nucleus and cell body are parted. The second probably represents a fatal coagulative change which in many respects resembles that produced by exposing cells to a high temperature.

In association with the moderate and advanced types of alteration it is not by any means unusual to find vacuoles in the cell protoplasm and, more rarely, fissures have also been described. Cell conditions such as I have briefly put before you have been recorded in experimental intoxication with various poisons.

In human pathology analogous conditions have been found in alcoholic, diphtheritic, and other forms of poisoning. Recently Poynton and Gordon Holmes have described widespread changes of the same character in rheumatic chorea.

From these facts concerning acute toxic cell change we can deduce two important points. In the first place, the histological appearances are not absolutely distinct from those produced by other influences. In the second place, no poison can be said to evoke an anatomical cell change which is different from that evoked by other poisons. In other words, there is no specificity in the microscopical evidence of toxic influence.

The methods of Ramon y Cajal, of Donaggio, and others

for the purpose of bringing out the neuro-fibrils have been successful in the hands of their inventors and of Marinesco, Genté and Bellot, and others, in showing that these fibrils undergo marked changes in toxic and other conditions, but the consensus of opinion at the present time favours the view that they are only present when the Nissl changes can also be evoked and are in no way more specific.

ACUTE TOXIC CHANGES IN NERVE FIBRES.

The Marchi method (or the "Busch" modification) is that most commonly employed for the purpose of demonstrating early changes in the nerve fibre and its myelin sheath. In acute toxic states I believe that there are two different conditions to be met with: 1. The myelin sheath undergoes a change which is practically indistinguishable from the Wallerian degeneration of a nerve fibre separated from its nutritional centre. For example, I may cite the case of a man dying from acute pneumonia who at the time of his being taken ill was undoubtedly suffering from the very earliest stage of alcoholic neuritis. In the peripheral parts of his anterior crural and external popliteal nerves I found early Marchi degeneration. Most fibres were normal, others showed a faint brown tint, generally more marked near a node, and others had become more deeply stainable from node to node in their entire breadth. This condition was not secondary to cell change since the ganglion cells were nearly all normal, or if changed only very slightly so, but must be regarded as a degenerative reaction on the part of the myelin sheath to a true toxic change of the axis cylinder. In more advanced stages of the same process the altered myelin breaks up into large rounded masses which are taken up by various cells and ultimately absorbed. This represents the *Wallerian fatty degeneration* of toxic origin and may be seen in the central nervous system as well as the peripheral nerves, although it is more common in the latter. I believe that when this occurs there is always some interference with the function of the fibre, although I do not deny that function may be regained before the myelin sheath is completely restored to its normal condition. 2. Another result of acute toxic states is the appearance in the central nervous system or the peripheral nerves of more or less numerous fine rounded drops of fat or material which is at any rate stained by the Marchi method. These are common in the white matter of the lateral and anterior columns, of the posterior columns, especially in the column of Goll; and are more frequently seen in the posterior than in the anterior roots. If examined under a high power, either in transverse or longitudinal sections, they are seen to lie mostly within the myelin sheaths but are seldom large enough to fill more than a half of the transverse diameter of any particular fibre. They appear singly or in short rows of two, three, or four together and vary in their depth of staining. When these are present in the white columns it is usual to find still finer fatty particles scattered in the grey matter of the anterior horns, and occasionally in that of the cerebral cortex. This condition I have often observed in toxic states of all kinds, and a good example

DESCRIPTIONS OF ILLUSTRATIONS ON PAGE 707.

Fig. 1.—Two normal "stüchochrome" cells from the hypoglossal nucleus.

Fig. 2.—A normal Betz cell from the motor cortex.

Fig. 3.—Early type of toxic change (1). Perinuclear chromatolysis. The pale areas in three cells are produced by pigment. Anterior horn cells.

Fig. 4.—Early type of toxic change (2). Diffuse staining. Anterior horn cells.

Fig. 5.—Early type of toxic change (2). Diffuse staining. Betz cell.

Fig. 6.—Moderate type of toxic change. Anterior horn cells.

Fig. 7.—Advanced type of cells in anterior horn cells, probably due partly to toxic and partly to "axonal reaction" influence.

Fig. 8.—Longitudinal section from spinal cord stained by Busch method showing a single fibre undergoing toxic Wallerian degeneration and numerous smaller droplets of fat representing the diffuse fatty change. From the case of puerperal septicæmia mentioned in the text.

Fig. 9.—Fatty change in muscle stained by Busch method. Transverse and longitudinal sections.

Fig. 10.—Sections from cardiac muscle in a case of acute ptomaine poisoning dying in 36 hours. Extensive fatty change, which was also present in the diaphragm and to a less extent in the skeletal muscles. Stained by Busch method.

Fig. 11.—Transverse section of small vessel in the cortex cerebri, showing marked fatty change in its walls. Stained by Busch method.

xic states in which paralysis is not a part of the symptomatology? With the object specified in view a number of cases of general toxæmia were examined in the following manner: the motor cortex by the Nissl, van Gieson, and Busch methods; parts of the pons, medulla, and spinal cord by the same methods; and portions of the heart, diaphragm, and vastus internus muscles, together with their intramuscular nerves by the van Gieson, Busch, and charlach red methods. The cases included (1) a case of ptomaine poisoning fatal in 33 hours, with a temperature rising from 99° 6' to 107° F. just before death; (2) a case of septicæmia, culminating in general peritonitis, of three weeks' duration with an irregular temperature of the septic type; (3) a case of erysipelas of the face complicated by myocardial degeneration and granular kidney in which the erysipelas was present for a week with a temperature varying between 100° and 102° 2'; (4) a case of extensive surface burns with septicæmia and fatal hæmorrhage from a duodenal ulcer (temperature 102° to 103° during one week); (5) two cases of acute infective enteritis, one fatal in two or three days and the other improving temporarily with a fatal relapse at the end of 17 days; (6) two cases of acute periosteitis with general pyæmia, one fatal at the end of 20 days, with a temperature varying between 99° and 104°, and the other fatal in three days with a temperature of from 101° to 102°; (7) a case of acute pulmonary tuberculosis dying after a short illness in which the symptoms were only prominent during the last 19 days (temperature 99° to 102°); (8) a case of acute lymphatic leukaemia of probably three months' duration, but with a very acute termination (temperature during the last four days 102° to 104°); (9) a case of measles, the patient dying from broncho-pneumonia in a week (temperature 101° to 104°, rising to 107° just before death); (10) a case of diphtheria, death resulting from broncho-pneumonia after three days' illness (temperature 100° to 102°); and (11) a case of acute diabetes in a man, aged 23 years, the symptoms persisting for three weeks and the patient dying comatose (post mortem there were found large white kidneys and ulceration of the colon). In addition to these cases I have examined on the same lines two cases of pneumonia with unsuspected meningitis.

The intense fatty change in the heart and diaphragm and less marked change in the vastus internus in the acute ptomaine poisoning case I have already referred to, and I have only to add that the Betz cells of the motor cortex showed what I have described as the second early type of change—namely, slight general swelling of the cell with somewhat diffuse staining of the chromatic and achromatic substance. The cells of the medulla and cord showed no change but the myelin of the latter presented diffuse fatty change of the non-Wallerian type. In the case of erysipelas the nervous tissue showed no changes. The cortical vessels were fatty and not only the heart but the diaphragm and vastus internus were full of fine fatty particles, whether the result of the erysipelas or associated with the myocardial degeneration and granular kidneys is not quite clear. In both cases of staphylococcal pyæmia there were early changes in the Betz cells but no alteration of the bulbar or spinal cells, slight diffuse fatty degeneration of the myelin and of the cortical vessels, but no evidence of disease in the muscles except in one case where the heart and diaphragm showed fatty change in the neighbourhood of a purulent pericarditis. It is worthy of note that in neither of two cases of acute lobar pneumonia was meningitis suspected during life, although it was apparent to the naked eye all over the cord and brain in the one and very evident on microscopical examination in the other. These cases of meningitis were the only instances in which definite changes were found in the cells of the cord and medulla. In one case of pneumonia there were slight fatty changes in the vastus internus associated with a normal heart and diaphragm. On the other hand, extensive fatty degeneration of the diaphragm was present in the case of measles and broncho-pneumonia and in the case of acute pulmonary tuberculosis, although the heart and vastus internus were free from fat in both instances. In one acute case of infective enteritis the cells of the cortex were very little changed, although the cell bodies appeared small in proportion to the size of the nuclei. In the other case of longer duration the nuclei were swollen and the cytoplasm showed some chromatolysis. In neither were there fatty changes in the central nervous system or muscles.

It is not right to attach much importance to such a

limited number of cases, but it may be noted that in eight out of 13 cases very early changes were observed in the Betz cells of the cortex, although no changes were found in the cells of the medulla or cord. This seems to point to a greater susceptibility on the part of the more highly developed cells to toxic influences and is in accordance with the clinical picture of easily exhausted voluntary effort frequently seen in toxæmic states. The absence of changes in the nuclei of the medulla makes one wonder whether we are not inclined to attribute disturbances of respiration and circulation too often to bulbar intoxication and whether it is not some higher respiratory and cardiac centre which is sometimes to blame. While on the one hand diffuse fatty myelin change was common in the series, that form of degeneration which resembles the Wallerian variety was only seen, and that scantily, in the case of septicæmia of three weeks' duration. The importance of this result lies in the warning it provides that we should not be too ready to regard this diffuse type of myelin change as explanatory of marked functional disturbance in the form of paralysis or loss of sensation.

With regard to muscular fatty changes this investigation serves to show that the diaphragm is even more liable to undergo this form of degeneration than the heart and that both are much more commonly affected than the vastus internus which was taken as a type of ordinary skeletal muscle.

Finally, I must draw your attention to the fact that in no single instance did there appear to be any evidence of perivascular cellular infiltration or neuroglial proliferation. Indeed, the only vascular phenomenon beyond engorgement of vessels, which was certainly marked in many cases, was the occurrence of increased amounts of fat in the vessel walls or sheaths, especially in those of the cortex cerebri.

THE PATHS BY WHICH BACTERIA OR THEIR TOXINS MAY REACH THE CENTRAL NERVOUS SYSTEM AND THEIR MEANS OF DISSEMINATION WITHIN IT.

When we come to inquire into the pathogenesis of the acute toxic paralyses it will be necessary to take into consideration the paths by which the central nervous system can be brought within the sphere of action of bacteria and their toxins and further to recognise, as far as we can, along what lines the noxious influences can spread within the system. Excluding direct invasion from neighbouring diseased tissues there are obviously two definite channels about which it is advisable to say a few words. These are: (1) the blood, and (2) the lymph.

1. *The blood supply of the central nervous system.*—This is arranged, as one would expect, so that the richest vascularisation is associated with the presence of the most active elements or ganglion cells, whereas the more passive conducting paths are content with a somewhat poorer portion. In the spinal cord the largest artery is the anterior spinal which supplies the greater part of the cellular grey matter and which is of larger calibre in the cervical and lumbar enlargement, where the cells are numerous, than in the dorsal region where they are relatively few in number. The smaller pial vessels supply the white columns but do not provide such a rich capillary network as is found in the grey matter. These arteries derive their supply from the anterior and posterior spinal arteries with reinforcement from each of the spinal root vessels. The great length of the segments in the middle third of the dorsal region and the lack of large reinforcing root arteries probably render that particular portion of the cord less vascular than any other, and it is here that true vascular thrombosis is most often met with. It appears from the injection researches of Kôdyi that there is no definite anastomosis between the area supplied by the anterior spinal artery and that supplied by the pial vessels and that there is a zone in the neighbouring borders of the white and grey matter which is partly vascularised by the one and partly by the others. It would seem therefore that the grey matter of the cord with its rich capillary network, and especially that of the cervical and lumbosacral enlargements, is more lavishly exposed to circulating toxins than the white matter. The occurrence of emboli in the cord in human pathology is a rare event owing to the somewhat tortuous route and small calibre of the arteries, but Leyden in two cases of ulcerative endocarditis found purulent foci scattered indiscriminately through the white and grey matter of the cord. Cressier found metastatic abscesses more frequently in the grey than

is afforded by the case of a woman who died after three weeks of puerperal septicæmia culminating in general peritonitis. The necropsy was made six hours after death and the brain and cord were hardened by the usual formalin method. The above described fatty change was found throughout the white matter of the brain and spinal cord and Fig. 8 shows a longitudinal section of the spinal cord taken at a spot where there happens to be a fibre undergoing true Wallerian degeneration by way of contrast. Only a very few of the latter type were seen and they may be regarded as more or less accidental. I have little doubt that this particular form of fatty change in nervous tissue may be increased by lengthening the interval between death and the fixation of tissues. Whether this is so or not I am quite convinced that the appearance I have alluded to indicates an ante-mortem change, or is at any rate promoted by chemical processes occurring during life.

The view which I have adopted concerning this production of droplets which stain with osmic acid is that it is a fatty degeneration of the myelin, in some ways analogous to the fatty change found in other organs in toxic conditions and is by no means necessarily an evidence of loss of function on the part of the nerve fibres the sheaths of which are affected. Some stress should be laid on this point, I think, because a sufficiently distinct line has not always been drawn between these two different forms of fatty change. Their differentiation is rendered much easier and clearer by the examination of longitudinal than of transverse sections of the spinal cord or nerves.

With regard to the axis cylinders themselves it is well recognised that under toxic influences they may appear swollen and more deeply and diffusely stained by various reagents, noticeably by hæmatoxylin, in ordinary logwood or *vaa Gieson* preparations. An irregular vacuolation of the axis cylinder similar to the vacuolation of the ganglion cell protoplasm has also been described.

ACUTE TOXIC CHANGES IN MUSCLE.

There has been much investigation into and much written about the various forms of degeneration which take place in muscles in acute infective and toxic conditions, but we are concerned here only with the early histological alterations. These may be regarded as of two varieties, either of which may be present alone or combined with the other in striated muscles.

The first is a condition which can be recognised when sections of muscle are stained by the ordinary logwood or van Gieson methods. It has been termed diffuse hyperplasia and is characterised by the fact that the muscle fibre swells, so that its transverse diameter is increased and its longitudinal outline often rendered sinuous. In transverse section it appears more rounded and less polygonal in shape and when seen in longitudinal sections it has generally lost much of its distinct transverse and longitudinal striation. It tends to take a somewhat different, generally more yellow, colour in eosin preparations and to present an appearance which is best described as slightly vitreous. These alterations in the sarcoplasm are often associated, even in very early stages, with a swelling and proliferation of the sarcolemma nuclei and with the presence of an increased granularity of the plasma.

The second type of change is one which is microscopically evident only when methods for detecting fat are used in the preparation of the tissue sections. Fatty change is probably the most suitable name to apply to it because it has been shown both by Rindfleisch and by Dudgeon that it is not due to an increase of fatty content of the muscles but to a chemical change by which fat, previously present in a saponic form, becomes demonstrable by the osmic acid, Schärlach red, or Sudan III, methods. The fatty change is first apparent around the nuclei of the fibre but is soon rendered conspicuous by the appearance of fine droplets arranged in rows between the fibrils, producing at first an intensification of the normal striation. (Fig. 9.) As the droplets increase in size the transverse striation of the fibre tends to become less easily perceived, but in other respects the fibre may retain its normal features. It is probable that this fatty change is, like the hyperplasia, quite remediable under favourable conditions. As I have said before, the fatty and hyperplastic changes may be associated in one fibre, and, following the rule of all toxic changes, it is usual to find many normal fibres lying among those which are affected by one or other or both morbid processes.

The change which I have now described is not very uncommon in a great variety of toxic states, but it is due to Dudgeon that we are cognisant with its extremely early presence in the diaphragm and heart in cases of experimental acute diphtheritic toxæmia. Mott has told us in his Croonian lectures that fatty change of the heart and striated muscles is a striking feature in animals poisoned by the bacillus botulinus, and I found the same condition in a fatal case of ptomaine poisoning which was under my care at the Royal Free Hospital last summer. (Fig. 10.)

It is still more important to note that this fatty change of muscle can be, and is, frequently present without alterations in the nerve fibres as shown by Bolton and Dudgeon. I have been able to confirm the same principle in the case of a man who died from the effects of a fracture dislocation of the dorsal spine with resulting compression paraplegia. In the course of examining him between the time of his accident and his death I was surprised to find some slight paresis of the extensors of his wrist and of his supinator longus muscle, which, of course, could not be explained by the spinal lesion. On ascertaining that he was a potman and that he was in the habit of taking the first liquid refreshment from the bar-taps I attributed the muscular weakness to early lead poisoning. After death I found intense fatty change in the supinator longus, whereas there was none in the flexor brevis pollicis. The musculo-spiral nerve was free from any change with the exception of a few scattered drops of altered myelin. In the same case it is interesting to note that the heart was normal while the diaphragm showed fatty change in at least 80 per cent. of its fibres. We may assume, with a tolerable degree of certainty, that in toxic conditions muscles may undergo fatty change of a primary kind, although the same change is observed as a secondary condition in cases of peripheral nerve degeneration.

I propose to leave for later consideration the very important question of vascular change in toxic and infective conditions of the nervous system, a question which is fraught with all the difficulties surrounding the meaning of the simple word "inflammation"; at this moment I will only refer to one small point.

Under normal conditions the adventitial or perivascular sheaths of vessels ramifying in the substance of the brain or cord may contain droplets of fat or granules of pigment. In all sorts of toxic conditions this fat may be largely increased in amount so that the vessel walls stain a deep black in Marchi preparations and the fine capillaries can be seen in places to be outlined by minute black fatty particles (Fig. 11). I must hasten to add that I am not referring to cases in which there is a general breakdown of the myelin sheaths and in which the fat so produced is carried by various wandering cells into the perivascular lymphatics and thence absorbed into the blood stream. The appearance which I refer to is present in cases in which there is no general myelin degeneration and is probably explained in one of two ways: (1) the fat may be the result of chemical changes in the elements of the vessel walls produced by toxins in the blood; or (2) it is abstracted from the nervous substance immediately surrounding the vessels.

CHANGES FOUND IN CASES OF TOXÆMIA NOT ASSOCIATED WITH MARKED NERVOUS PHENOMENA.

Some time ago it appeared to me necessary for the proper consideration of the pathology of the acute toxic and infective conditions of the nervous system that I should satisfy myself as to the changes present in cases of fatal toxæmia which are not commonly classified as nervous. It is of course impossible to draw a distinct line between nervous and non-nervous toxic states in that the symptoms of most acute toxic cases are largely referred to disorders of function on the part of the nervous system, but it is of some importance to know how far these clinical disorders of function are represented anatomically by variations in structure demonstrable under the microscope. Is the increased exhaustibility of the patient in voluntary movement the result of changes in the upper or lower motor neurons or of changes in the muscles? Are the disturbed actions of the more vital organs of circulation and respiration referable to changes of central origin or to change in the organs themselves? These and other questions, too numerous to specify, naturally occur to one. For my purpose, however, an entirely different question is the most momentous. How far are the paralytic symptoms in cases of acute toxic paralysis to be explained by the morbid changes found after death, or how far are these morbid changes common to other

The Hunterian Lectures

ON

THE RENAL FUNCTION IN ITS RELATION TO SURGERY.

Delivered before the Royal College of Surgeons of England,

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LECTURE I.

Delivered on March 1st, 1907.

[The lecturer stated that he would confine his remarks to the subject of diagnosis and after referring to the pioneer work of Simon, Annandale, Morris, Hahn, and Czerny, he briefly sketched the cases in which information as to the renal activity was necessary. The subject was considered under two divisions: (1) the estimation of the total renal function; and (2) the estimation of the function of one kidney. He proceeded:]

1. THE ESTIMATION OF THE TOTAL RENAL FUNCTION.

Until a comparatively recent date the surgeon has been content to rely upon the symptoms and local signs of renal disease and the examination of the urine in order to judge of the activity or the reverse of the kidneys. I shall not dwell upon these. The kidneys may be exposed by operation and examined with a view to estimate the renal function. Palpation of the kidneys by the abdominal route has fallen into disuse from its unreliability. The exposure and examination of the kidneys by lumbar incision where the stability of the renal function is in doubt involve a risk which the surgeon may wish to avoid. And, moreover, it is not always easy to judge of the functional power of a kidney so exposed. In a case of suppression of urine following an operation upon a stricture I cut upon the kidney and stripped the capsule in the hope of relieving the renal tension that is supposed to exist in these cases. The kidney was flabby, and except for venous congestion did not differ in appearance, size, or consistence from a fully functional kidney. It is possible that some method may be developed by which fully functional kidney tissue can be recognised.

In a case of exploration of the kidney where I had used the methylene blue test for the purposes of diagnosis, and where the blue colour of the urine was still strongly marked, I hoped to find on incising the kidney that the exposure to air would produce the blue colour observed in animals that are passing methylene blue, and that I should thus be able to recognise the extent of the fibrous changes in the renal substance by the variations of staining. I was disappointed, however, for no change in colour was observed. Nor did the use of peroxide of hydrogen as an antiseptic during the operation bring out the colour.

I shall at once pass to the consideration of certain methods of estimating the renal function which have been introduced at a comparatively recent date.

Although it cannot be said that the physiology of the renal function is fully known, certain phenomena are recognised as being either a part of the function or inseparably connected with it. 1. The kidneys separate from the blood a fluid of different molecular composition—namely, the urine. The osmotic pressure of the urine is greater than that of the blood and the work performed by the kidney may be measured by estimating the osmotic pressures of these two fluids. This is conveniently done by investigating the freezing point of these fluids (cryoscopy). 2. The kidneys exercise a selective power by which certain substances are removed from the blood. Thus certain of the constituents of the urine do not appear in other secretions of the body, although they circulate in the blood. In similar manner certain foreign substances introduced into the blood are eliminated by the kidneys. Thus iodide of potassium, uric acid, and certain dyes, such as methylene blue, fuchsin, and resorcinol, may be recognised in the urine by the changes in colour which they produce. The kidneys are also said to

have the power of removing certain toxic bodies from the circulation, the accumulation of which would produce the syndrome of uræmia. 3. It is further recognised that the kidneys have a synthetic action in regard to at least one substance (hippuric acid) which exists in small quantities in the urine and they are thus brought into line with glandular organs. It is known that the administration of phloridzin is followed by the temporary appearance of glucose in the urine and that the glucose is produced by the vital action of the kidney. 4. Finally, a controlling function over nitrogenous metabolism by means of an internal secretion has been suggested by certain experiments. The methods of estimating the renal activity which follow are dependent upon the examination of some of these functions.

1. The Kidney as a Filter: (a) Cryoscopy.

Dresser¹ has shown that the osmotic pressure of the urine is considerably in excess of that of the blood. If the kidneys are diseased their power of bringing about a change in the osmotic tension of the fluid passing through is reduced and the freezing point of the urine is raised. The credit of introducing this method into clinical medicine belongs to Koranyi of Budapest.² Koranyi has advanced a theory of renal secretion upon which several tests are based. This observer suggests that a solution of sodium chloride filters from the blood into the renal tubules at the glomeruli. As this solution passes down the tubules it is concentrated by the absorption of water, and an interchange of molecules between the solution and the blood takes place through the renal cells. Each molecule of sodium chloride which is passed from the urine into the blood is replaced by a molecule of a different nature, such as urea, uric acid, &c., derived from the blood.

The following methods are based upon the estimation of the molecular content of the urine and the blood by measurement of the freezing point:—

Cryoscopy of the urine.—The freezing point of the urine (point Δ U) represents the molecular concentration of the fluid without reference to the nature of the dissolved substances. In the healthy state it is liable to considerable variations. Koranyi places it between -1.30° and -2.30° C. Copious libations may raise it to -1.0° and profuse sweating may lower it to -2.30° or under. In nervous polyuria it may rise to -0.17° C. In a large number of urines there is a precipitation of urates at the freezing point and this materially affects the calculation. The quantity of molecules thus thrown out of solution is a variable factor, so that no correction can be made which will apply to all urines. The mixing of alkaline and acid urines also induces changes in the freezing point. Apart from these fallacies, however, the variations in the freezing point of the urine are so considerable in the healthy individual that no trustworthy observations can be made by this method.

According to Koranyi's theory the number of molecules of sodium chloride in the urine will depend upon the interchange of urea, &c., which has taken place in the renal tubules. By dividing the figures of the freezing point by the sodium chloride content per 100 cubic centimetres of urine, Koranyi hopes to estimate the work of the renal epithelium. The figures work out at 1.7, or in a series of cases at 2 or over. The more rapidly the sodium chloride solution is hurried past the renal epithelium the less will be the interchange of molecules, so that the product of this formula is smaller. The volume of urine thus comes to be an important factor. Claude and Balthazard³ correct Koranyi's formula for both the volume and the total body weight and term the product the "total molecular diuresis." By calculation they ascertain from this the "diuresis of elaborated molecules," and after correcting this again for volume and weight they obtain the "sum of the molecular interchange" by the renal epithelium by dividing the former by the latter product. The accompanying chart (Fig. 1) shows in a graphic form a period of renal inefficiency in a case of chronic nephritis. The elaborate calculation thus entailed depends upon several factors each of which is liable to fallacy. It is known that there is a retention of chlorides in renal diseases and Claude and Mauté⁴ make use of this fact to observe the result of a measured administration of chlorides compared with cryoscopy.

¹ Archiv für Experimentale Pathologie und Pharmacologie, 1892, Band xix., S. 37.

² Zeitschrift für Klinische Medizin, 1897, vol. xxix., Nov. 1-2; Berliner Klinische Wochenschrift, 1897.

³ Journal de Physiologie et de Pathologie Générale, 1903, 97.

⁴ Société Médicale des Hôpitaux, 2 Mai, 1903.

in the white substance. Experimentally embolic softening in both grey and white matter has been produced by injecting fine particles into the lumbar arteries by Lamy and Rothmann. Singer injecting the vertebral artery produced infarcts in the posterior columns and horn of the corresponding side of the cervical cord. I shall have to make further reference to experimental embolism of the cord, especially in relation to Hoohe's work, when discussing the nature of acute poliomyelitis. With regard to the brain the same generous blood-supply is provided by means of a rich capillary network for the grey matter both of the cortex and of the basal ganglia, the white matter, on the other hand, being comparatively poorly off. In the brain stem the sharp line between white and grey matter is not nearly so distinct as it is in the case of the cerebral hemispheres or spinal cord, a fact which can be ascertained from a glance at any Weigert-Pal section of the medulla or pons, but nevertheless the parts with most cells are generally best provided with vessels. Embolism of the cerebral arteries is sufficiently common to require no comment here. Two facts stand out clearly from this short review of the general principles of blood circulation in the central nervous system: (1) toxins in solution in the general circulation will be brought into closer relationship with the grey than the white matter; and (2) solid particles capable of forming emboli are almost invariably carried into the larger cerebral arteries and very rarely into the cord. When embolic infarcts do occur in the cord they are found both in white and grey matter, perhaps with a little preference for the latter owing to the larger calibre of the anterior spinal artery.

2. Lymphatics of the central nervous system.—There is a certain amount which is known and a great deal which is speculative about the lymphatic supply of the brain and cord and anyone who wishes to inform himself about the subject had better for his peace of mind avoid reading more than one authoritative statement on the matter.

[After describing what is known about the lymphatic system of the spinal cord Dr. Buzzard proceeded:]

The connexion of the spinal lymphatics with other lymphatics, and more especially with those of the peripheral nerves, has next to be examined. Our knowledge on this point is derived largely from observations in human and experimental pathology. D'Abundo injected china ink into the posterior columns of dogs and found that the granules tended to spread up the cord and towards the central grey matter. They did not traverse the posterior horns into the ventro-lateral columns nor did they find an exit into the posterior roots. After injection into the central grey matter the ink granules spread more generally into the anterior, lateral, and posterior columns, but again chiefly in an upward direction. There was in either case a general tendency on the part of the deposit to find its way into the perivascular sheaths. Guillaumin more or less confirmed the results obtained by D'Abundo from experiments conducted on similar lines. He came to the conclusion that there were perivascular lymph sheaths and lymph spaces in the tissue, that the circulation was ascending, that the spaces in the posterior columns were independent of those in the antero-lateral, and, finally, that the central canal takes on the functions of a lymph channel. Sicard, on the contrary, did not find that granules injected into the posterior columns were confined to that region but tended to spread in all the columns and to reach the perivascular sheaths of the subpial and subependymal vessels. The same author found no spread of the ink when injected into the nerve roots; when injected into the cerebro-spinal fluid it was quickly disseminated throughout that liquid and gained ultimately the lymphatics of the body.

More important are the investigations which have been made on the mode of infecting the lymphatics of the spinal cord through the lymph channels of the peripheral spinal nerves. Marinesco examined the nerves and spinal cord in a case of gangrene of the leg and found evidence of an ascending inflammation along the nerve lymphatics to the cord, which was the seat of perivascular infiltration and degenerated-ganglion cells. David Orr has also investigated a case in which there appeared to be toxic infection of the cord along the neural lymphatics in the cervical region. Homen and Laitinen in a paper published in 1899 described the results of an investigation they had conducted on rabbits in connexion with this question. They injected streptococci or their toxins into the sciatic nerve or spinal cord of these animals and were in the former case able to

or their toxins up the sciatic nerve, along the nerve into the cord and its meninges. The path of travel was chiefly the lymphatic canal lying beneath the neurium of the nerve and spinal roots, and it was that the posterior root was more favoured in this than the anterior. Within 20 hours of the injection cocci could be seen between the spinal meninges in the neighbourhood of the entering roots. They spread in the meninges all over the cord even to the cerebrum. They entered the cord along the posterior median septum but also along sheaths of other radial vessels and along the posterior roots. They were even found in the central matter. The histological changes corresponded to the situation of the cocci. In the nerves the fibres degenerated there were leucocytic infiltration and proliferation of fixed cells of the endoneurium and neural sheaths. Spinal ganglia there were cell changes, although they were chiefly confined to their capsules. Small cell infiltration was referred to in the subdural sheaths of the roots and in the meninges. Within the cord the authors described degeneration of ganglion cells, hæmorrhages, and so liberation of neuroglial cells, and, in some of the cases small round cell infiltration of the capillaries and tissue grey substance. Similar infiltration was observed, especially in the immediate neighbourhood of the posterior septum, in other instances. When toxins were injected the nerves the pathological changes were identical with those produced by the bacterial inoculation. If the cord itself was the site of inoculation similar changes were found. The spread of infection appeared to follow the lines of the meninges and central canal chiefly in an upward direction. The authors regard the changes as being due to the toxins rather than to the bacteria themselves. Homen in a paper published in 1902 records a series of similar experiments carried out with the staphylococcus pyogenes, the diplococcus pneumoniae, bacteria coli, typhoid, &c. The animals which did not die spontaneously were killed at intervals varying from under 24 to three months after injection. The changes in these experiments were very similar to those I have just referred to, but it was noticed that the results with which the different bacteria spread in the cord and was variable. Thus the bacillus coli had a greater tendency to travel than the staphylococcus or cocci, especially in the spinal cord. Another point of interest lies in the fact that the space of time during which the various organisms could be detected in the tissues after injection varied not only with the microbe but also with the tissue examined. In the case of the streptococcal infections, for instance, in the course of a week or 10 days the cocci had disappeared from the spinal cord, whereas they were still evident in the nerves for about another ten days.

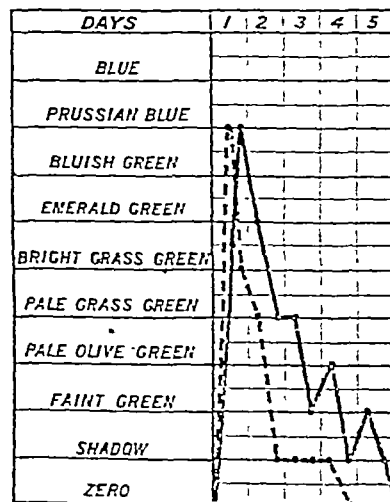
The important deductions to be made from these investigations are the following. 1. That organic and inorganic substances when present in the lymph spaces of nerves tend to be carried centralwards towards the spinal cord meninges, and especially through the posterior spinal roots. 2. Entry into the spinal cord is made chiefly along the various septa within the lymph channels of the nerve roots and along the anterior but more particularly the posterior roots. 3. That the same substances within the spinal cord and its membrane appear to travel upwards mainly between the meninges and along the central canal. 4. The changes within the cord resulting from its bacterial infection through these lymph channels are somewhat patchy and irregular, affecting the grey and white matter alike, with a special incidence on the posterior columns. 5. The morbid histological processes consist of toxic changes in ganglion cells, blood extravasations, small round cell infiltration of the tissues and perivascular sheaths, some liberation of neuroglial cells, and parenchymatous degeneration of the nerve strands.

UNIVERSITY OF GLASGOW.—The Senate of the University has resolved to confer the honorary degree of Doctor of Laws on the Prince and Princess of Wales and many other distinguished persons, among whom are Professor J. N. Collier, F.R.S., professor of organic chemistry, University College, London; Professor John C. Kendrick, Professor Alexander Moody-Stuart, and Donald MacAlister, the new Principal of the University. The degrees will be conferred on Tuesday, April 23rd.

record where a considerable delay was occasioned by renal lesions of an insignificant character. When the blue is delayed the chromogen is usually delayed also. Thus in two cases of malignant disease of the prostate without symptoms of renal disease methylene blue elimination was delayed three and four and a half hours and chromogen elimination 53 minutes and four and a half hours respectively. But, on the other hand, a normal commencement of chromogen may be observed when the blue is delayed. In a case of "fibrous prostate" methylene blue appeared in two and a half hours and chromogen in 15 minutes, and in a case of renal pain where the kidney had been explored three years previously the blue was delayed three and three-quarter hours and the chromogen appeared in 15 minutes. Where the blue does not appear in the urine at all the chromogen may appear late. In a case of pyonephrosis the chromogen appeared alone in one and a quarter hours and in a patient suffering from advanced bilateral pyelonephritis the chromogen appeared alone in one hour. An early onset (under 30 minutes) of elimination of blue has been observed by Bard¹⁵ in epithelial nephritis. This early appearance of blue has also been noted in some cases of hypertrophy of one kidney (Albarran).

2. *Duration of elimination.*—In a healthy subject the whole excretion of blue is said to be completed in from 35 to 60 hours. My own observations seem to show that this period

FIG. 3.

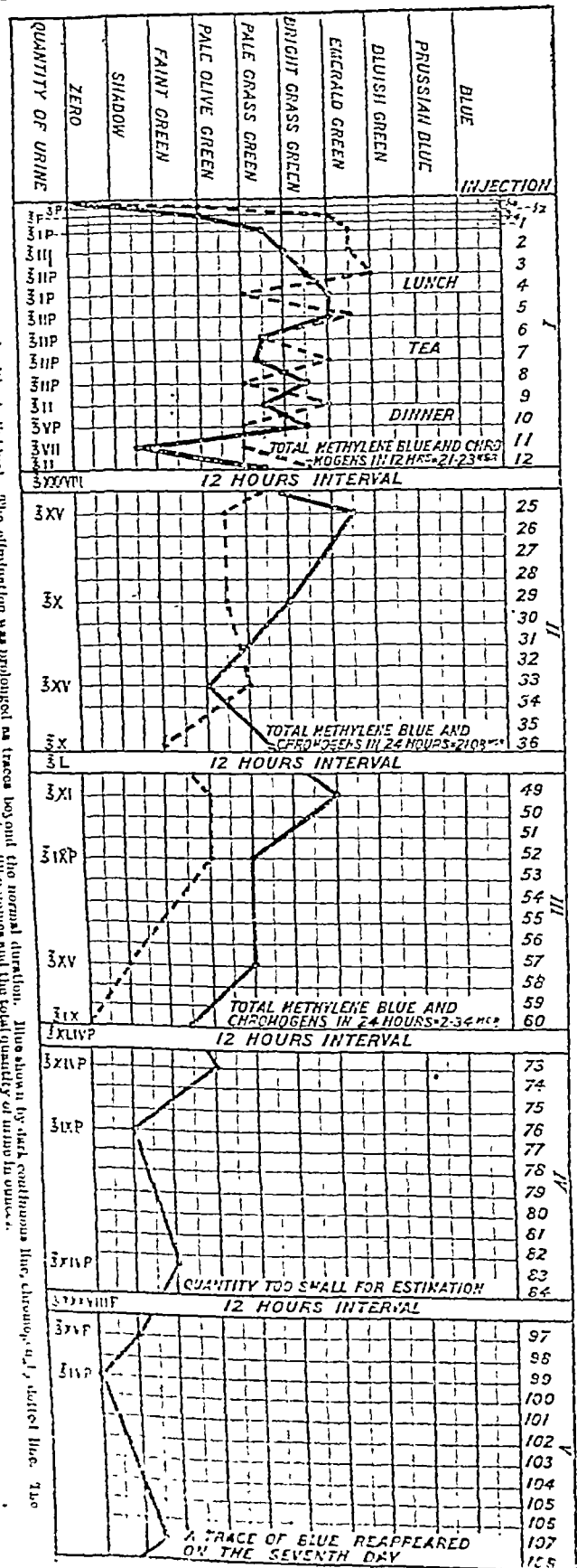


Elimination in healthy subject prolonged to fifth day. Blue shown by continuous line, chromogen by dotted line.

is too short. After the first wave of elimination had passed traces were observed in the urine during the fourth, fifth, and even on the sixth days in some healthy individuals. (Figs. 3 and 4.) In pathological conditions of the kidney the excretion may take place within those limits, but the duration is usually prolonged, more rarely it is shortened.

Shortened elimination.—An excessive quantity of methylene blue may be rapidly passed. This occurs, according to Bard, in parenchymatous nephritis. The shortened elimination may coincide with a considerable reduction in the quantity of blue eliminated. In these cases there is extensive disease of the kidneys. According to Achard and Castaigne¹⁶ this short elimination occurs at the period when the blue is present in the blood in greatest quantity, and

FIG. 2.

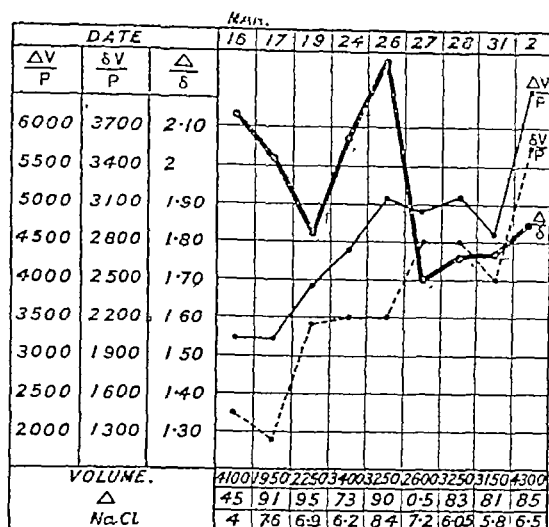


Elimination of methylene blue in a healthy individual. The elimination was prolonged as traces were still in the urine at the end of the 12-hour interval. The total quantity of urine in urine.

¹⁵ Gazette Hôpitaux, 27th Mar, 1907, p. 454.
¹⁶ Des Néphrites Rénales, 1900.

Cryoscopy of the blood.—The freezing point of the blood is remarkably constant at -0.58°C ., and the point Δ of the serum is practically the same as that of the blood. According to Koranyi, where one kidney is inefficient no change is found in the freezing point, but where the function of both kidneys is impaired the freezing point of the blood is lowered. A freezing point of -0.57° to -0.58° indicates a reduction in the total renal function. This margin of reduction is, however, too small and a point Δ of -0.59° or

FIG. 1.



Period of temporary renal inefficiency in chronic nephritis (Claude and Balhazard).

-0.60° should be shown before bilateral disease is diagnosed. Kummel⁵ looks upon a freezing point of -0.60° as a contra-indication to nephrectomy, and he believes further that when the molecular concentration is normal there is no interference with the total renal function. In 16 cases of bilateral renal disease this observer found the freezing point of the blood was from -0.60° to -0.65° , and in one case it was -0.71° . In 11 cases in which nephrectomy was performed a freezing point before the operation of -0.58° was taken as a proof of a healthy second kidney. After the operation the remaining organ in all the cases continued to secrete a sufficient quantity of healthy urine, and the freezing point of the blood remained at -0.56° . In one case the freezing point before operation was -0.59° and after the operation -0.57° . It is undoubtedly, however, that a lowered point Δ of the blood to -0.60° may be found apart from lesions of the kidneys. In my own cases the method has proved trustworthy but the number of cases in which I have used it is small. In cases where the point was depressed I was able by other means, such as the methylene blue test or phloridzin glycosuria, to confirm the inadequacy of the renal function or the symptoms were such as to leave no doubt upon the subject. In a case of enlarged prostate I disregarded a freezing point of the blood of -0.66°C . as the symptoms of renal inefficiency were insignificant. The patient succumbed to suppression of urine after the operation. In another case where obstructive anuria was in progress the point Δ of the blood was -0.71°C .

Comparative cryoscopy of the urine and blood.—In the comparative cryoscopy of the urine and blood (Bernard⁶) the ideal method for the estimation of the work done by the kidneys would appear to be provided. The freezing point of normal urine is from -1.5° to -2° and that of blood serum -0.56° . The quotient of these will be 2.5 to 3.5 and when this figure diminishes we may conclude that there is a diminution in the permeability of the kidney. These figures are, however, affected in the same way as those of the urine alone. The wide range of variation of the freezing point of the urine in health will disturb the figures considerably. Bernard has endeavoured to correct this fallacy by introducing the volume of the urine in cubic centimetres into the calculation. The figures thus obtained will vary in normal

individuals from 3000 to 5000. If we test this method on two types of cases—namely, a case of polyuria from interstitial changes in the kidneys the result of an enlarged prostate and a case of obstructive oliguria almost amounting to anuria—it will be found that the products of these formulae successfully show the impaired function when oliguria is present, but fail to demonstrate the condition where polyuria is present.

(b) Method of Wright and Kilner.

Wright and Kilner⁷ have taken advantage of the fact that complete destruction of the red blood corpuscles (haemolysis) occurs at a certain point of dilution of the blood serum and under similar conditions in a suspension of blood corpuscles in urine, and use this as an indication of the dilution of these fluids. The result is expressed in the number of dilutions required to bring about the haemolysis.

(c) Electrical Resistance of the Urine.

Aqueous solutions offer a variable resistance to the passage of an electrical current according to their composition, and Bordier of Lyons⁸ has applied this method to the examination of the urine. The urine owes its conductivity almost entirely to its mineral constituents and not at all to its organic contents. According to Dr. Dawson Turner⁹ the results of this method in renal disease correspond very closely to those of cryoscopy.

2. The Elimination of Certain Substances in the Urine.

It has long been recognised that the elimination of certain substances in the urine is hindered by disease of the kidneys. This subject has received the attention of Hahn, Rayer, Roberts, Duckworth, and others. Achard and Castaigne¹⁰ in 1897 introduced methylene blue as a drug on which observations might readily be made. Fuchsin was used with a similar object by Bouchard and Lepine¹¹ studied the elimination of rosaniline. Observations have also been made upon the elimination of iodide of potassium and the subject has been reviewed by Lafaye,¹² while Eée,¹³ Chopin,¹⁴ and others have studied the elimination of salicylate of sodium.

(a) The Methylene Blue Test.

If methylene blue be administered in the form of pill or injected into the muscles the urine will, after a time, assume a blue or green colour. Intramuscular injection is preferable on account of the greater accuracy. Methylene blue is absorbed into the blood from the point of injection as a colourless derivative and this reduction takes place only by the action of living tissues. Microscopical examination of the blood shows no colouration of the plasma or of the white corpuscles and the spectroscope shows no change. Nor can this leuco-derivative be detected in the blood by the means by which it is demonstrated in the urine. The colourless derivative or chromogen is transformed into methylene blue by the liver and the kidneys and is excreted in the bile and the urine. The blue in the bile is apparently re-absorbed in the intestine. Methylene blue is eliminated in the urine in two forms, partly as methylene blue and partly as a colourless derivative or chromogen. The latter is transformed into methylene blue by boiling with acetic acid. About 50 per cent. of the total quantity of methylene blue injected is eliminated by the kidneys in the first 24 hours, but only part of the total methylene blue is passed by the urine. The elimination of methylene blue in a healthy individual is shown in Fig. 2.

In studying the elimination of methylene blue there are several points which claim attention: (1) the commencement of elimination; (2) the duration; (3) the quantity of colouring material eliminated as blue and as chromogen; and (4) variations in the course of elimination.

1. *The commencement of the elimination.*—Chromogen appears in the urine 15 minutes after the injection and the blue usually commences in half an hour. This relation of chromogen and methylene blue was the rule in my cases in health and disease. In pathological conditions of the kidneys the elimination of blue is delayed and may occur after one or three or even several hours. Occasionally the blue does not appear at all. The period of delay is to some extent a measure of the severity of the renal lesion, but cases are on

⁷ THE LANCET, April 2nd, 1904, p. 921.

⁸ Quoted, Debove, Achard et Castaigne, *Maladies des Reins*, 1906.

⁹ *Practical Medical Electricity*, third edition, 1902.

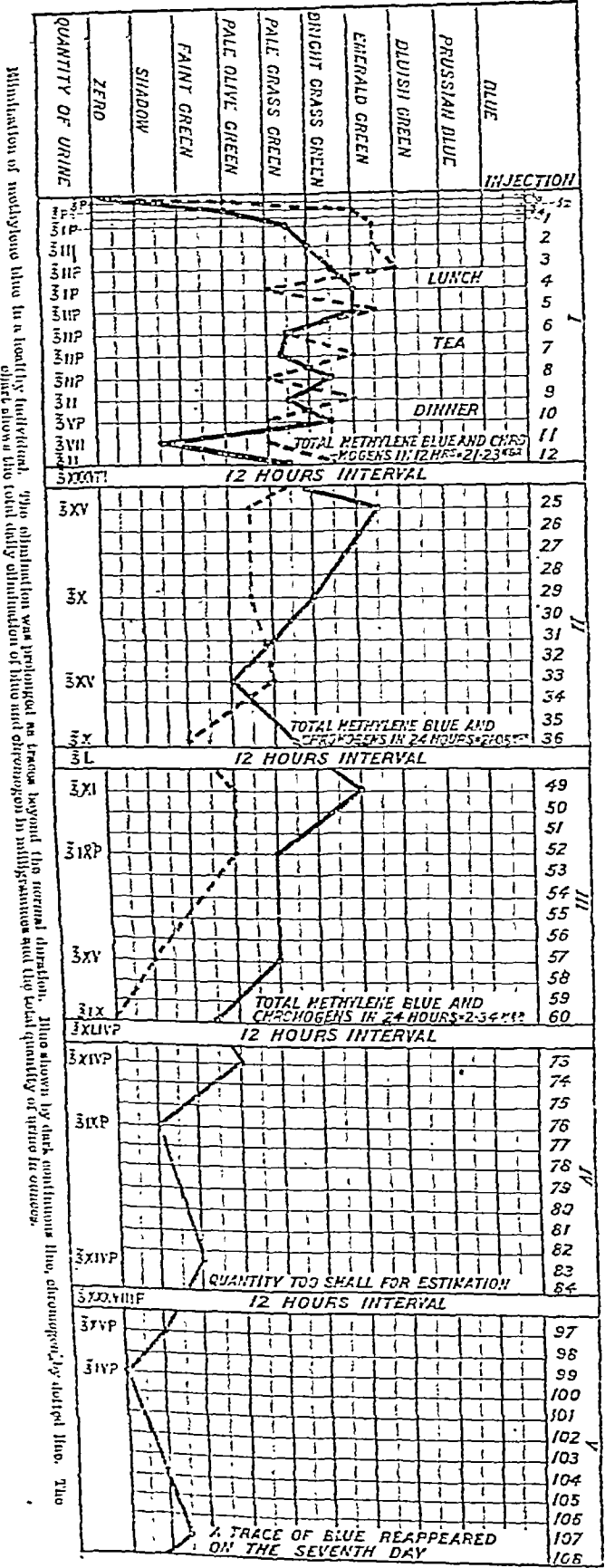
¹⁰ *Bulletins et Mémoires de la Société Médicale des Hôpitaux*, 30 Avril, 1897, p. 637.

¹¹ *Lyon Médical*, p. 251, 1893.

¹² *L'Élimination Urinaire de l'Iode*, Paris, 1893.

¹³ *Bulletin de l'Académie de Médecine*, 1877, p. 717.

¹⁴ *Thèse de Paris*, 1893.



record where a considerable delay was occasioned by renal lesions of an insignificant character. When the blue is delayed the chromogen is usually delayed also. Thus in two cases of malignant disease of the prostate without symptoms of renal disease methylene blue elimination was delayed three and four and a half hours and chromogen elimination 53 minutes and four and a half hours respectively. But, on the other hand, a normal commencement of chromogen may be observed when the blue is delayed. In a case of "fibrous prostate" methylene blue appeared in two and a half hours and chromogen in 15 minutes, and in a case of renal pain where the kidney had been explored three years previously the blue was delayed three and three-quarter hours and the chromogen appeared in 15 minutes. Where the blue does not appear in the urine at all the chromogen may appear late. In a case of pyonephrosis the chromogen appeared alone in one and a quarter hours and in a patient suffering from advanced bilateral pyelonephritis the chromogen appeared alone in one hour. An early onset (under 30 minutes) of elimination of blue has been observed by Bard¹⁵ in epithelial nephritis. This early appearance of blue has also been noted in some cases of hypertrophy of one kidney (Albarran).

2. Duration of elimination.—In a healthy subject the whole excretion of blue is said to be completed in from 35 to 60 hours. My own observations seem to show that this period

FIG. 3.

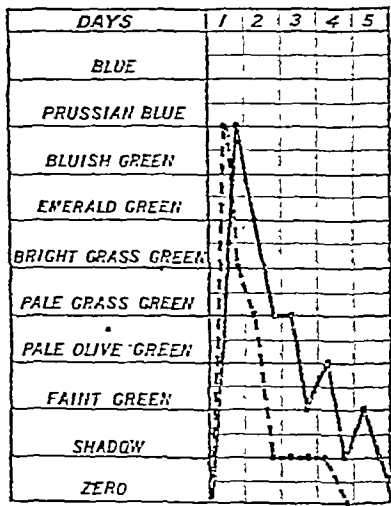


FIG. 2.

Elimination in healthy subject prolonged to fifth day. Blue shown by continuous line, chromogen by dotted line.

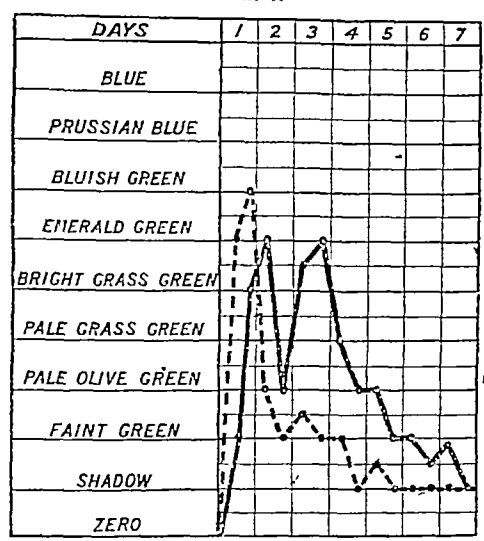
is too short. After the first wave of elimination had passed traces were observed in the urine during the fourth, fifth, and even on the sixth days in some healthy individuals. (Figs. 3 and 4.) In pathological conditions of the kidney the excretion may take place within those limits, but the duration is usually prolonged, more rarely it is shortened.

Shortened elimination.—An excessive quantity of methylene blue may be rapidly passed. This occurs, according to Bard, in parenchymatous nephritis. The shortened elimination may coincide with a considerable reduction in the quantity of blue eliminated. In these cases there is extensive disease of the kidneys. According to Achard and Castaigne¹⁶ this short elimination occurs at the period when the blue is present in the blood in greatest quantity, and

¹⁵ Gazette Hebdomadaire, 27th Mai, 1907, p. 434.
¹⁶ Des Fonctions Rénales, 1900.

when the quantity of blue in the blood fails the kidney does not allow it to pass through. This does not, however, explain cases where the blue fails entirely to appear in the urine or only shows as a faint trace, yet the chromogens are excreted in fair quantity during a varying period. It appears to me that the difficulty lies in the transformation of the chromogen of the blood into methylene blue and that the diseased kidneys lack this power.

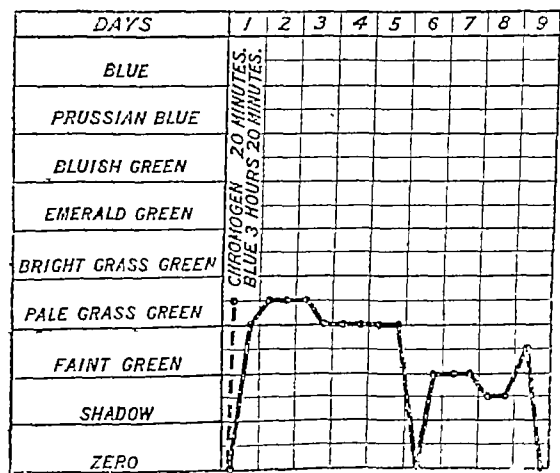
FIG. 4.



Elimination in healthy subject prolonged to seventh day. Blue shown by continuous line, chromogen by dotted line.

Prolonged elimination.—With a reduced quantity of renal tissue in disease of the kidneys the elimination of blue is prolonged. This is observed to a marked degree in chronic interstitial nephritis where traces of blue may persist for from six to ten days and more, rarely so long as 15 days. Prolonged elimination is also observed in surgical disorders of the kidneys. I have observed the elimination of blue during a period of eight days and 17 hours in a man, aged 67 years, who suffered from enlarged prostate and interstitial nephritis (Fig. 5). Faint traces are sometimes passed for

FIG. 5.



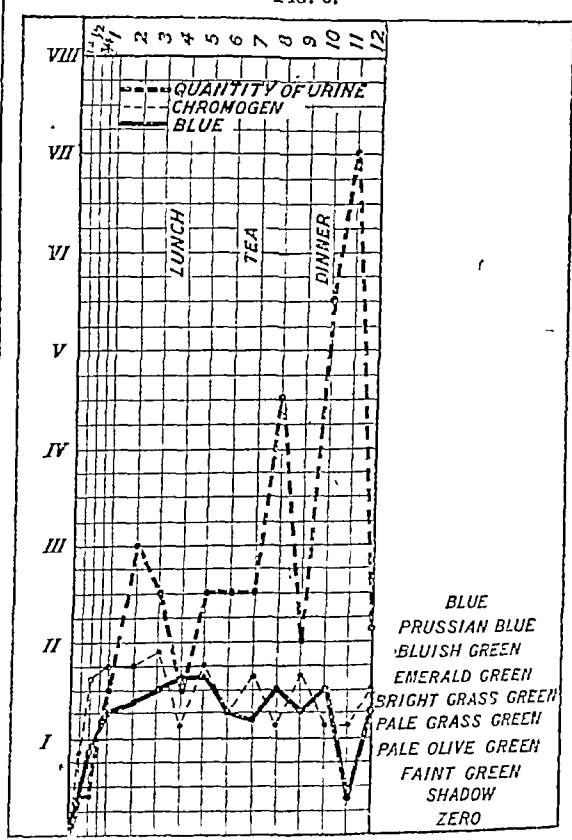
Enlarged prostate, interstitial nephritis. Delayed, prolonged, and diminished elimination of blue with single intermission on sixth day.

several days in individuals whose kidneys are healthy. In a healthy subject I was able to detect traces of blue on the sixth and seventh days after injection. There had, however, been intervals of clear urine. In a slight degree of renal impermeability the duration of elimination may reach the normal figure, but faint traces of blue may be detected in the urine for several days after the main wave of elimination has passed. The total quantity eliminated may not, however,

differ greatly from the normal. Most frequently prolonged elimination coexists with a diminution in the quantity eliminated.

3. The quantity of blue eliminated.—For the purpose of quantitative estimation the chromogen must be transformed into blue in each specimen examined. The most accurate method is the comparison of the blue urine with a solution of blue of known strength, more blue being added until the depth of colouring is the same in both fluids. The yellow colour of the urine introduces a fallacy that is corrected by using the urine of the patient before the blue appeared and adding to this the standard solution of methylene blue. For purposes of comparison charts may be constructed which show the varying depth of colouring of the urine as the course of the elimination. The quantity of blue eliminated is diminished in diseases of the kidney. In advanced disease no blue may appear in the urine and under these conditions chromogen may appear for a short time and may be entirely absent. In one patient under my care no blue

FIG. 6.



Normal elimination of methylene blue and chromogen compared with quantity of urine during first 12 hours after injection.

appeared in the urine although no appreciable renal lesion was present. The patient suffered from bilharzia cystitis and took the methylene blue by mouth for its therapeutic effect. He took half a grain of methylene blue daily for a month and two grains daily for two months, but no trace of blue or chromogen appeared in the urine. In four other cases no blue was passed and each of these patients suffered from advanced renal disease. In two of these chromogen was passed and in two it was absent.

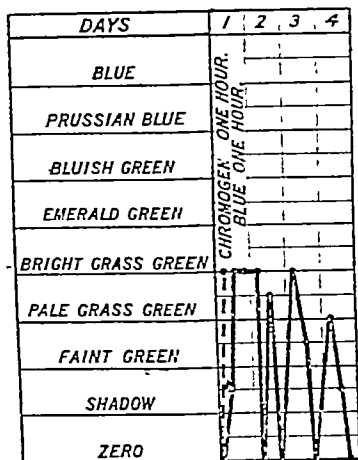
4. Course of elimination.—The elimination of blue rapidly rises and reaches its maximum about three or four hours after injection and remains at its highest level for four or five hours. It then falls gradually and after 30 or 40 hours has usually been reduced to a pale green tint. After this traces may be passed for some hours or even for several days. During the excretion a draught of water will cause a rapid diminution in the colour, but after an hour or so the urine resumes its previous hue. In Fig. 6 the relation of the

quantity of urine and blue is shown and the cause of elimination by hourly observations during the first 12 hours in a healthy individual.

The elimination may be intermittent. It may fall almost to vanishing point and rise again or it may disappear entirely and reappear later. Disturbances in the rhythm of elimination occur in functional disorders of the liver. They are also said to occur in compensatory hypertrophy of the kidney. In 46 cases of different diseases Asfal¹⁸ observed intermittent excretion in 60 per cent., and in half of these it was diurnal. In 61 cases under my observation intermittent elimination was present in 14 (23.3 per cent.). In six healthy individuals the elimination was intermittent in all. (Figs. 7 and 8.)

The value of the methylene blue test in surgical diseases.—I used the test on six healthy adult men who volunteered

FIG. 7.



Intermittent elimination in a case of syphilis. No signs of disease of kidney. Blue shown by continuous line, chromogen by dotted line.

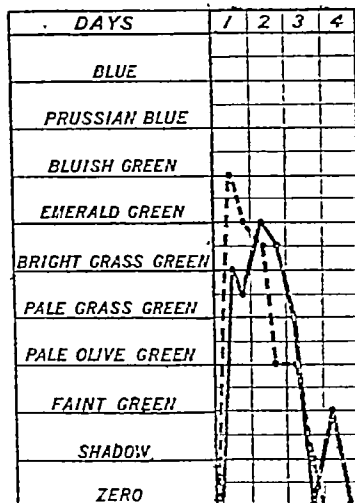
themselves for this service. In 55 cases injections of methylene blue were made for purposes of diagnosis. The dose in all these cases was the same—namely, 15 minims of a 5 per cent. solution of pure methylene blue.

These cases may be briefly summarised as follows. In some conditions which were unconnected with the urinary tract an unexplained delay in the commencement of elimination was observed. In inflammatory diseases of the bladder, where there was no reason to suspect renal changes, there was also a slight delay in the appearance of the blue. Cases of obstruction in the lower urinary tract invariably showed a delayed elimination. The average time of appearance of blue in 18 cases of obstruction was 3 hours 27 minutes. The delay was more marked where the obstruction was due to enlarged prostate than where it resulted from stricture. Thus, in eight cases of long-standing stricture the average time of commencement was two hours and 16 minutes, while in ten cases of prostatic obstruction the average delay was four hours and 25 minutes, and this did not include one case where no blue appeared. The duration of the obstruction did not sufficiently explain this difference, for the length of time during which symptoms of obstruction had been present was much greater in the strictures than in the prostatic cases. Nor was the degree of obstruction greater in the cases of prostatic disease. A similar difference was observed in the duration of the elimination of blue in cases of stricture and of enlarged prostate. The average duration in the former was 82 hours, not a very great increase over the normal figure, while in the cases of prostatic obstruction the average elimination continued for 118½ hours without taking the case of complete suppression of blue into consideration. In slightly damaged kidneys there was but little delay or prolongation, but where advanced renal disease was present there was delay, diminished and prolonged elimination. In severe bilateral renal disease the blue did not appear in the urine at all. There were altogether five cases in 61 where blue did not appear in the urine. One of these was

the case of bilharzia cystitis in which the kidneys were probably healthy and which I am inclined to look upon as a very unusual observation. The remaining four cases were—one case of urinary obstruction from enlarged prostate, one case of bilateral renal calculus, one case of pyelonephrosis with stricture of the urethra, and one case of pyelonephritis with abscess of the prostate and foul cystitis.

I operated upon three of these cases and refused operation in one. The patient with bilateral renal calculus who was refused operation died 18 months later from suppression of urine. Of the three cases that were submitted to operation two died. On one of these the operation was done to relieve a large collection of pus in the prostate when the patient was beyond hope of recovery. The other two cases were operated with the hope of cure. The patient with enlarged prostate showed no symptoms of renal inefficiency before operation. He was a spare, muddy-complexioned man who had suffered from complete retention of urine for some months. The urine had a specific gravity of 1010. There was an increased quantity of urine and the urea varied from 0.6 to 1.1 per cent. The temperature occasionally rose to 100°F. The operation presented no difficulty and the enucleation lasted three and a half minutes. After operation the urine gradually failed and the patient died on the fifth day. The patient with pyelonephrosis did not show any signs of failing renal function, but he was a heavy lymphatic man and a poor subject for operation. After nephrotomy he showed signs of commencing renal failure, but these passed off and similarly, after nephrectomy a fortnight later, there were vomiting, restlessness, distension, and diminished urine, but he recovered. The methylene blue test was again used after the nephrectomy. Blue appeared in the urine after one and a

FIG. 8.



Intermittent elimination in healthy individual. Blue shown by continuous line, chromogen by dotted line.

half hours and chromogen after one hour. The blue disappeared in 25 hours; the chromogen, which was present in greater quantity, pursued an intermittent course and disappeared in 53 hours (Fig. 9).

The value of methylene blue as an indication of the state of the renal function must be judged by a comparison with the information obtained from the symptoms and the examination of the urine. Three out of eight cases of stricture showed insignificant symptoms of renal inadequacy; in all the excretion of urea was large. In all of the cases there was delay and, in several, prolongation of blue elimination. The cases were selected as having suffered from intractable stricture for long periods and belonged to the class of case in which renal changes are common. In these cases the methylene blue appeared to be a more accurate test than the symptoms or the quantitative estimation of urea. In 11 cases of prostatic obstruction there were insignificant symptoms of renal inadequacy in three and fairly marked symptoms in one case. There were invariable delay and prolonged elimination of blue.

The cases already quoted of complete suppression of blue when no symptoms of renal inadequacy were present may be

taken as a type of the more accurate indication of the renal function by methylene blue. Further, the comparison of the result of the blue test in these prostatic cases with that of the stricture showing a less efficient renal function in cases of enlarged prostate than in stricture which was not shown by the symptoms is borne out by clinical experience of such cases. In two of the cases of kidney disease there were general symptoms of renal inadequacy; in one this was only continuous thirst, in the other the symptoms were well marked. In these cases no blue was passed. In the other two cases where no symptoms of renal failure were present and no blue was passed one died after the operation and had advanced interstitial changes in the kidneys and the other developed grave symptoms of renal failure after the operation, but these passed off. In one case there was a very marked improvement in the elimination of blue after the removal of a large pyonephrosis and this was attributed to the removal of a reno-renal reflex inhibition. The test is, I believe, one which is more trustworthy than the quantitative examination of the urea or the general symptoms of renal inadequacy. And this is especially the case in the more severe grades of kidney disease. In the slighter grades of renal disease the blue test appears to give results that are somewhat variable.

It has been urged in criticism of this method that the formation of chromogen introduces an element of uncertainty into the test. The chromogen should be converted into blue

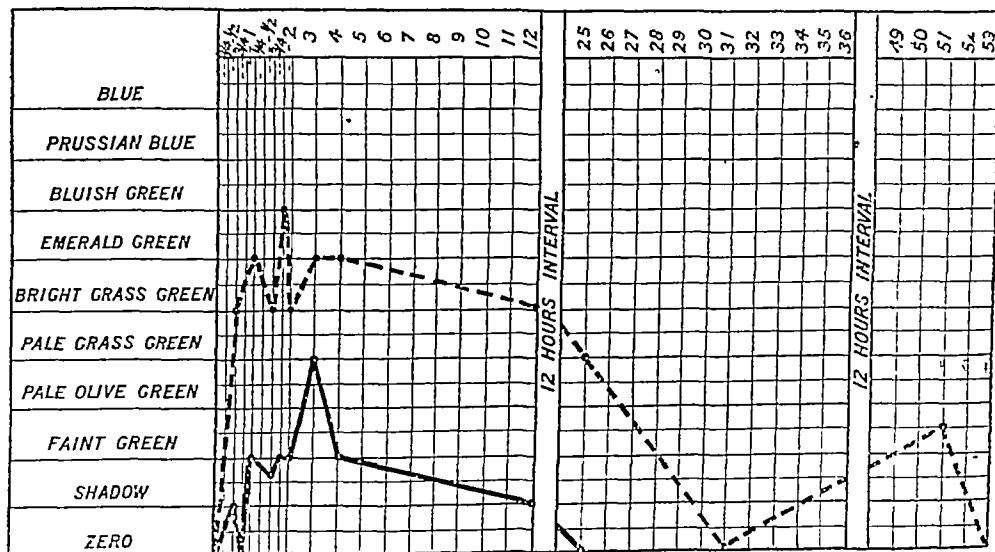
and death after a varying interval. The lethal dose of normal urine for rabbits is stated at from 40 to 50 grammes per kilogramme of body-weight. Retention in the body, or increased excretion in the urine, of poisonous substances will cause variation in this dose. Most observers who have used the method agree that it is likely to afford useful information if the toxicity of both the urine and blood be examined, but that it is open to many fallacies and cannot be judged with mathematical exactness.

3. The Glandular Function of the Kidney.

Phloridzin test.

Mering²¹ discovered in 1885 that the injection of phloridzin caused a temporary glycosuria of a few hours' duration. The amount of sugar excreted does not depend upon the dose of phloridzin, provided sufficient of the drug be given to produce the maximal effect. The source of the sugar is apparently the tissue protoid. The phloridzin glycosuria is renal in origin as the experiments of Zaux,²² Biedl, and Kollisch²³ have shown. Klemperer²⁴ was the first to apply this method to clinical medicine. He showed that phloridzin glycosuria did not appear in cases of chronic nephritis. Achard and Delamere²⁵ introduced the drug as a test of the renal function and brought its use within the range of practical medicine. These observers showed that the sugar production was dependent upon the functional

FIG. 9.



Pyonephrosis. Chart of elimination of blue (continuous line) and chromogen (dotted line) after nephrectomy. Neither blue nor chromogen appeared in the urine in a previous test before nephrectomy.

when the quantity of the dye is estimated. The elimination of the blue by the liver appears to me to be a more serious disadvantage and one which cannot be overcome. Lépine¹⁹ has drawn attention to a fallacy which underlies observations on this and similar methods. The kidney does not eliminate all bodies without distinction in the same manner, and data obtained from the elimination of one body may not be reliable when applied to another. It is undoubted, however, that there is a certain parallelism in the elimination of different bodies and that the general permeability of the kidney for most bodies which it excretes is approximately similar to that of methylene blue.

(b) The Toxicity of the Urine.

Professor Bouchard introduced the method of estimation of the toxicity of the urine as a means of determining the efficiency of the kidney to eliminate the poisons produced by metabolism. This method attributes to the kidney as its most important function the removal from the blood of certain substances which, if retained, would cause uræmia.²⁰ The normal urine is highly poisonous but the exact nature of the poison is unknown. The injection of a certain quantity of urine into a rabbit causes symptoms of poisoning

activity of the kidneys, and any variation must indicate a departure from the normal functions of the kidneys.

Technique of the phloridzin test.—A subcutaneous injection of 15 minims of phloridzin solution (1 in 200) is made. This corresponds to five milligrammes of phloridzin. In a healthy individual sugar appears in the urine in from 15 to 30 minutes and the glycosuria continues for from two to four hours. The most important factor in the test is the total quantity of sugar eliminated. This varies from one to two grammes. The lowest limit of normal glycosuria lies between 50 centigrammes and one gramme and the highest from 2 grammes to 2.50 grammes. In the accompanying chart (Fig. 10) the normal course of the elimination of sugar after an injection of five milligrammes of phloridzin is shown. The curves of quantity of urine and urea also appear on the chart. Delay in the appearance of the sugar or prolongation of the elimination to five or six hours as slight traces are not signs of abnormal function.

²¹ Centralblatt für die Medicinischen Wissenschaften, 1885, S. 531.

²² Verhandlungen der Physiol. Gesellschaft zu Berlin, 1894, S. 51.

²³ Quoted, Pavy, Brodie, and Siau: Journal of Physiology, 1903, p. 467.

²⁴ Verhandlungen der Verein für Innere Medizin, Mai, 1896.

²⁵ Bulletin et Mémoires de la Société Médicale des Hôpitaux, p. 331, 1899.

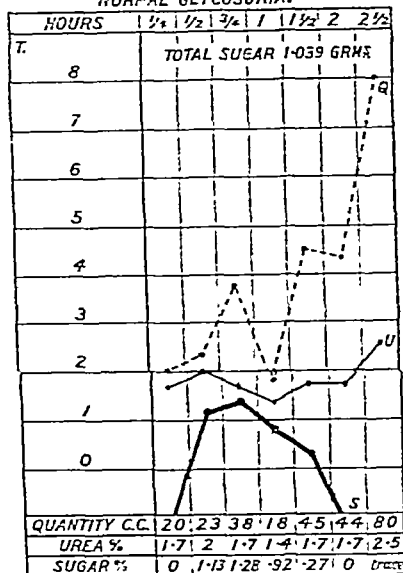
¹⁹ Lyon Médicale, 20 Février, 1833.

²⁰ Hallion et Carrion: Presse médicale, 30 Juin, 1900, p. 321.

Variation in the phloridzin diabetes of normal kidneys.—Achard and Delamere have shown that a diminution of the quantity of sugar eliminated (hypoglycosuria) or an excessive diabetes (hyperglycosuria) may take place without

FIG. 10.

NORMAL GLYCOSURIA.

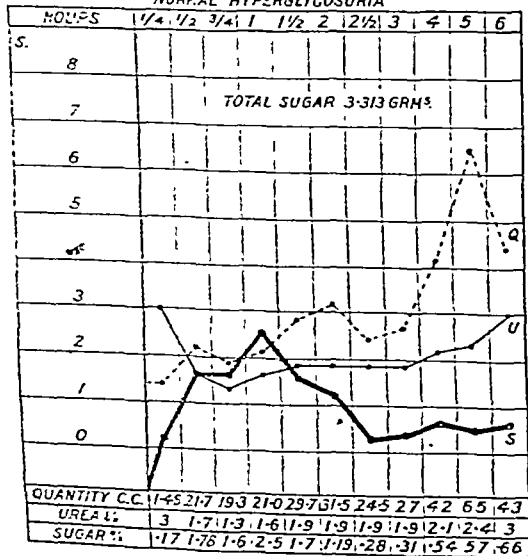


Sugar shown as dark continuous line (S), urea as faint continuous line (U), and quantity as dotted line (Q). Observations made every quarter of an hour for one hour and every half hour after that.

anatomical changes being present in the kidneys. Normal hyperglycosuria is more frequently observed in healthy individuals than a diminished secretion of sugar. It has been met with under the most varying conditions, such as

FIG. 11

NORMAL HYPERGLYCOSURIA



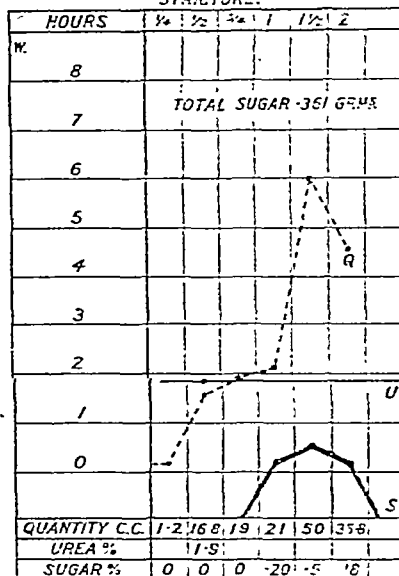
Excessive quantity of sugar after injection of five milligrammes of phloridzin. Healthy subject. Sugar indicated by thick continuous line, urea by thin continuous line, and quantity of urine by dotted line.

typhoid fever, acute articular rheumatism, and bronchitis. In two healthy adults, under exactly similar conditions, the hypodermic injection of five milligrammes of phloridzin produced a glycosuria in the first which commenced in 15 minutes and lasted six hours, with a total elimination of

3.313 grammes of sugar (Fig. 11), and in the second a glycosuria which commenced in 30 minutes and lasted two and a half hours, and 1.039 grammes were eliminated (Fig. 10). The first was a hyperglycosuria, while the second was a normal glycosuria.

FIG. 12.

STRICTURE.

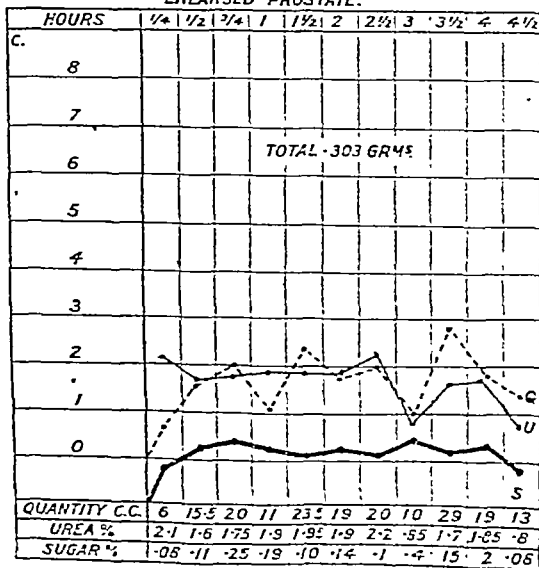


Diminished and delayed elimination of sugar in case of stricture.

Phloridzin test in renal disease.—The important variations found in renal disease are either a diminution of the quantity of sugar below one gramme or a complete absence of the sugar; a normal glycosuria has rarely been observed. Two examples occur amongst Delamere's cases,²⁶ and three cases are described by Jouffray.²⁷ Albarran has met with

FIG. 13.

ENLARGED PROSTATE.



Diminished and prolonged elimination of sugar in case of enlarged prostate.

several instances of marked hypoglycosuria with insignificant lesions of the kidney. This observer has also recorded instances of hypoglycosuria in unilateral renal lesions where the second kidney was functionally perfect by other tests.

²⁶ Thèse de Paris, 1899.

²⁷ Thèse de Lyon, 1903.

Among my cases was one of renal colic in which the total glycosuria amounted only to 0.53 gramme, and another of moveable kidney in which the glycosuria was 0.61 gramme. In two cases there was hyperglycosuria. In one I had recently removed a tuberculous kidney and there still remained severe tuberculous cystitis, but the solitary kidney was healthy. In this patient 5.21 grammes of sugar were rapidly eliminated, commencing half an hour after the injection. In the second there was chronic pyelonephritis more marked on one side. There were periodical exacerbations and the general symptoms pointed to a falling renal function. The patient passed 3.40 grammes of sugar in two hours. The quantity of sugar was diminished in cases of moveable kidney, renal colic, vesical calculus with slight pyelitis, enlarged prostate with interstitial changes in the kidneys, tuberculous kidney, and intermittent pyuria of obscure origin.

The value of the phloridzin test.—A diminished phloridzin glycosuria indicates in most cases disease of the kidney, and a complete absence of sugar should be regarded as a sign of advanced renal disease. The cases to which I have referred point in this direction and the conclusions were supported by other evidence. Sugar was entirely absent in four cases: a patient with a damaged solitary kidney after nephrectomy for pyonephrosis, another with obstructive oliguria which became anuria, and two cases of enlarged prostate with uroastasis. In these there were no symptoms pointing to renal inadequacy in the solitary kidney case and in one case of enlarged prostate. In the case of oliguria there was the diminished urine but no general signs at the time of the test, and in the enlarged prostate the signs of renal inadequacy were well marked—there were dry glazed tongue, thirst, headache, marked loss of flesh, loss of appetite, and nausea at times. The former case was under my colleague, Mr. J. G. Pardoe, and he kindly permitted me to examine the patient and to watch his progress. In the case of solitary kidney the patient had shown signs of renal inefficiency immediately following the operation of nephrectomy but these had subsided. The urea amounted to 1 per cent. and 1.2 per cent. on two separate examinations of 24 hours' specimens.

I have already referred to the case of enlarged prostate in considering the methylene blue test. The patient showed no symptoms of renal inefficiency with the exception of a moderate polyuria. The total urea excretion was well up to normal. No phloridzin glycosuria was observed. The patient died from suppression of urine after prostatectomy and his kidneys showed advanced interstitial changes and were hollowed from pressure. In the second case of enlarged prostate there were symptoms of renal inadequacy. After a period of bladder drainage the symptoms were less marked and the injection was repeated. On this occasion a reduced quantity (0.303 gramme) of sugar was eliminated. After prostatectomy the patient was drowsy for three days but his urine was plentiful and he made an excellent recovery. There was diminished glycosuria without symptoms of renal disease in several cases where it seemed improbable that the renal function could be impaired. Thus in a case of moveable kidney the excretion was 0.614 gramme. In obstruction from stricture (Fig. 12) or enlarged prostate (Fig. 13) there was diminution of the glycosuria.

Compared with the urea output and the general symptoms of renal inadequacy the phloridzin test was more delicate in these cases. The fallacy to which it is specially open is the pronounced effect which minor renal changes may produce upon the glycosuria. It is possible that this fallacy may be overcome by the use of larger doses of phloridzin, as Albarran has suggested.

I have indicated the fallacies and difficulties connected with each of these methods. As a measure of the total renal function the phloridzin and methylene-blue tests are most trustworthy. The phloridzin method is open to the objection that it is too easily influenced by slight variations in the renal function. At the present time the methylene-blue test is the method by which most trustworthy information can be obtained and appears to me to form a valuable addition to the clinical methods of estimation of the renal function.

Surgeon-Colonel P. B. Giles, V.D., F.R.C.S. Edin., Commandant Volunteer Ambulance School of Instruction, has been picked as high sheriff for the county of Bucks.

The Nettsonian Lectures

ON

THE DIAGNOSIS AND LOCALISATION OF CEREBRAL TUMOURS.

Delivered before the Medical Society of London,

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F.R.C.P.,

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LECTURE III.¹

Delivered on March 4th.

TUMOURS OF THE SUPRAMARGINAL AND ANGULAR GYRI.

MR. PRESIDENT AND FELLOWS,—From the temporal lobe we may pass now to tumours of the supramarginal and angular gyri, convolutions of the inferior parietal lobe, which lie respectively round the posterior ends of the Sylvian fissure and the parallel sulcus so that the superior temporal convolution is connected at its posterior end with the contiguous parts of the supramarginal and angular gyri. What are the functions of the supramarginal and angular gyri? They are probably inexcitable to electrical stimuli in man, and according to Dr. David Ferrier² the angular gyrus is connected with vision and lesion of it causes temporary blindness of the opposite eye. In the case of tumours it would not be possible to exclude the structures which lie beneath the cortex and particularly the optic radiations, the fibres which run from the optic thalamus to the visual centres in the occipital cortex, and hemianopia may be caused by these fibres being involved.

In the first case the tumour was in the left supramarginal gyrus, the part of the parietal lobe which is posterior to the intraparietal sulcus and which lies round the posterior end of the fissure of Sylvius. In this case, under the care of Sir William Gowers, with a tumour on the left side which was subsequently removed by Sir Victor Horsley, there was for 13 months headache over the left occiput and the vertex, with tenderness above the left ear. There was no vomiting but marked optic neuritis was present. For 11 months there were several fits a day, with faintness, giddiness, and loss of consciousness but without convulsions. After the attack there was numbness of the right hand and the patient was dazed and could not speak properly. For five months he could not read or write. On admission there was weakness of the right arm and leg, with occasional twitching of the right fingers. He had momentary attacks of unconsciousness followed by difficulty of speaking and numbness of the right hand. Also he had word blindness, so that while he understood spoken commands and could name letters, words, and objects, he could not read except very simple sentences and could not make up words with letters. He made mistakes in writing. He had also right hemianesthesia with defective localisation, but his sense of position was good.

In the second case, under the care of Dr. Hughlings Jackson, a man, aged 27 years, had a large tumour—a glioma-sarcoma—in the left parietal region, where the growth came to the surface over an area of the size of a five-shilling piece. The growth was limited in front by the ascending parietal convolution and along the intraparietal sulcus the cortex of the brain was shrunken; behind, the angular gyrus was partially involved and by recent growth; below, the growth was bounded by the supramarginal gyrus which was not invaded and above by the superior parietal lobule, which was somewhat involved. It extended deeply inwards for about two-thirds of the distance to the median surface of the hemisphere. The onset was probably nine years ago, when the patient's speech suddenly became queer for two hours; his words were all right but his sentences were wrong, and then he had a fit, losing his senses and biting his tongue. He recovered speech on the next day. A year later he had a second attack which began with a peculiar feeling; he tried to

¹ Lectures I. and II. were published in THE LANCET of Feb. 9th (p. 343) and 23rd (p. 491), 1907, respectively.
² Croonian Lectures, 1890, p. 55.

speaking and could only say "Thank you," but could understand partially what was said to him. The whole attack lasted two hours and was not followed by paralysis. Another year later he had a third attack and lost his speech entirely, but could partially understand spoken words. There were no convulsions. Since then he had had several attacks, one a month, lasting a few minutes, losing speech but without convulsions. He did not lose power altogether of writing in the attacks. For three months he had had difficulty in reading aloud and some difficulty in writing.

On admission the patient's speech was slow but he understood spoken commands; he could pick out objects named to him and could name common objects shown to him but not the less common ones, though he recognised the name when it was mentioned. He understood what he read but he read slowly. He read badly aloud. In writing he could copy, but in writing from dictation he was very slow and incorrect, but he could write spontaneously fairly well, leaving out words here and there, and many words were crossed out. Smell, taste, and hearing were good. No optic neuritis was present. There was no loss of power or sensation, nor was there astereognosis. The reflexes were normal. The fields of vision were contracted. In hospital he had a fit beginning with loss of speech and with numbness and tingling and weakness in the right hand and foot; then he had "shimmering before his eyes and in waves." After the attack the field of the right eye was concentrically contracted. In most attacks he felt dizzy, lost his speech, or said wrong words, his eyes and head turned to the right, both legs and arms became stiff, and there was numbness of the right hand. He staggered to the right if he tried to walk. In the fits he had sometimes a sense of glaring light with the general weakness. Vomiting and retching occurred in the last three months. Later he had commencing optic neuritis, right disc = + 3.5, left = + 4.5, and the right side of the face was weaker than the left. The knee-jerks were both brisk. Plantar reflex: right indefinite, left flexor. He gradually became worse and died.

The main points in this case were the absence of severe vomiting and of headache till the last three months and of optic neuritis till the end, the attacks with loss of speech, the difficulty of reading with power to understand spoken words, the contraction of the right visual field, and the difficulty in writing, which was probably dependent on his difficulty of reading and was not an absolute agraphia. The part of the brain, lesions of which cause word blindness, is the angular gyrus, which in this case was not affected till later. It seems probable that the transient attacks were due to pressure and irritation of this gyrus rather than destruction of it, which would produce permanent word blindness. The concentric limitation of the field of the right eye would be due to the angular gyrus being involved and it bears out Dr. Ferrier's view that the whole field of the opposite eye is localised there. The absence of astereognosis does not support Dr. C. K. Mills's theory of its localisation in the superior parietal lobule.

In the two cases just described the tumours were situated in the parietal lobe of the left side; in the three following cases the tumour occupied the parietal lobe of the right side.

In a case under the care of Dr. H. H. Tooth there was a large tumour about one and three-quarter inches in diameter posterior to the intraparietal sulcus of the right side; there was no defect of speech and the fits were more like those from a tumour of the ascending parietal—viz., pain in the left arm going up to the face, with twitching of the left arm and leg. There were occasional incontinence of urine with weakness of the left arm and leg and probable loss of sensation over the whole left side and hemianopia, but as the patient was in a dull, stupid state from which he had to be roused to answer questions it was very difficult to test him.

The next case was that of a man, aged 37 years, under my care, who with no history of specific disease had two years before admission a general epileptic fit without any warning; then for five months he had unpleasant throbbing feelings and noises in his head, and he was treated by a medical man who said that his liver was out of order. A year later he began to have fits about once a week with pins and needles in the side of his left foot running up to the knee and then starting afresh in the left biceps, lasting for two minutes; there was a feeling of twitching in the left biceps like galvanic shocks but it did not move. Sometimes the feelings began in the arm. Two months before admission he had a general fit with unconsciousness but without any warning.

About nine months before admission he had an attack in which he became dazed and found that he had lost sight of his left half-fields, lasting for an hour and then passing off; he had four of these attacks in six months and they were not preceded by any visual aura, and two months before admission this left hemianopia became permanent. The sensations continued in the left foot but in one attack they began in the left side of the abdomen.

On admission the patient had no headache, no tenderness of the cranium, no optic neuritis, and no vomiting. There was no paralysis. The deep reflexes were brisk and equal and the superficial reflexes were normal. Sensation was normal. The sense of smell was defective on the right side. There was well-marked left hemianopia, so that he could not see anything to the left of the central point of vision in each eye. He left hospital on July 29th, 1904. On Dec. 7th of the same year he was readmitted. On every fifth or sixth day he had a curious sensation in the left side, beginning in the left leg, as if the leg were going to jump, though there was nothing to be seen, and this sensation passed upwards like a galvanic shock, with numb feeling in the left foot or arm; he felt as if he should fall. In the previous September he suddenly found that he had no feeling in the left hand and forearm; the anaesthesia lasted for ten minutes. There were no twitching, no pain, and no loss of power. Occasionally since then his fingers felt asleep and felt swollen. He had one general convulsive attack without any warning and with loss of consciousness. For ten days the left fingers, hand, and wrist felt weaker; also there was dragging of the left foot in walking. On readmission he had headache in the forehead, which was not severe. There was no vomiting. His memory was falling and he was languid and sleepy. His attention and intelligence were good. The hemianopia was getting worse. His speech was good. The left arm was weak, but could perform all movements. In regard to sensation, there was occasional numbness of the left fingers and hand, but no objective impairment. On Dec. 12th the upper edge of the right disc was blurred. On Feb. 10th, 1905, the whole of the right disc was blurred, + 3 dioptres; left, + 2 dioptres. There was headache later which was more severe. He had attacks of numbness in the left hand and in one attack there was weakness of the left leg. There was internal strabismus; the upward movement of both eyes was deficient; lateral movement of right eye to right not past median line; good on left. Sir Victor Horsley removed a double cyst from the right inferior parietal lobe posterior to the middle part of the ascending parietal convolution; the cyst was slowly shelled out, separating the cyst wall from the surrounding tissue. The tumour extended downwards and backwards and to a slight extent forwards.

The next case was that of a woman under my care who had a tumour measuring 2½ by 1½ by 1½ inches, involving the central white matter in the posterior half of the right hemisphere, and extending backwards to a point one inch from the occipital pole; it lay beneath the cortex of the supramarginal and angular gyri and extended across the white matter to the median surface where it formed a projection in the cortex of the quadrate lobule. Internally it involved the posterior part of the corpus callosum, the optic radiations, and the posterior quarter of an inch of the internal capsule. For five months before admission she had involuntary micturition; five weeks previously she had a general fit and after it she had paralysis of the left side. There was no definite optic neuritis till seven weeks before her death, and she had no headache or vomiting till after her admission to the hospital. Her mental condition was bad; she was in a torpid, drowsy condition, and refused food, and towards the end had frequent vomiting. The left pupil did not react to light and the right was sluggish. She had left hemiplegia with increase of the deep and diminution of the superficial reflexes, and extensor plantar reflex on the left side, loss of the sensation of pain and touch over the left half of the face, limbs, and trunk, and loss of the left half of the fields of vision for each eye (left hemianopia). Her speech was not affected.

The cases of tumour of the supramarginal and angular convolutions which I have just detailed to you are five in number, two being in the left hemisphere and three in the right. Taking first the general symptoms of tumour we notice at once either that these symptoms were absent or that they were developed very late in the course of the disease. Headache was present throughout in the first case and severe in the third case but in the other cases it was not severe and was absent till the end of the case. Vomiting did

not occur at all in three of the cases and only at the end in two cases. Optic neuritis was marked in the first case, it was absent in the third case, and in the other cases it was not observed till very late in the course of the disease. In all cases there were fits, either general convulsions without any warning, faints like petit mal, or Jacksonian attacks without loss of consciousness. These last fits were always preceded by a sensory aura, such as pain in the left arm followed by twitching. In one case besides general fits the patient had tingling in the left foot which spread up to the arm and he had the feeling as if the arm was twitching, but there was no actual movement. This sense of movement was probably due to irritation of the ascending parietal convolution. In one case hemiplegia occurred early in the case but in all the others there was only slight weakness of one side and this weakness occurred late either with normal reflexes or with the increase of the deep and diminution of the superficial on that side. Sensation in two cases was not permanently lost, although in both cases the patient had attacks beginning with a sensory aura, but in the other three cases there was hemianesthesia and in two cases hemianalgesia. Hemianopia of the fields on the side opposite to the tumour was present in every case except two, and in one of these the field of the opposite eye was concentrically contracted. The sense of smell was deficient on the same side as the tumour in two cases. The most important symptom was the affection of speech. In the three last cases when the tumour was on the right hemisphere speech was not affected; in the first two cases affecting the left hemisphere there was a definite amount of word blindness. In the first case the patient had dazed fits and could not speak properly, and subsequently could not read or write though he could name letters, words, and objects, and could understand spoken commands (i.e., auditory). In the second case the illness began with fits in which the patient's speech became queer, using wrong sentences, and before some fits losing his speech altogether. He could speak slowly, he understood spoken commands which he could hear, but had difficulty in reading and understanding written commands which he had to see. This patient had also fits accompanied by "shimmering waves and a glaring light."

In the foregoing account the fits, which begin with a sensory aura, are probably due to pressure on the ascending parietal convolution with consequent irritation of that part. Paralysis of motion and sensation does not occur unless the motor or sensory fibres of the corona radiata or internal capsule are pressed upon or involved by the tumour. The permanent hemianopia would probably be due to the optic radiations being invaded, while the concentric limitation observed in one eye would, according to Dr. Ferrier's experiments, be due to a lesion of the angular gyrus. The particular affection of speech called "word blindness," where the patient is unable to understand written commands which are brought to his mind through his organs of sight, is considered to be situated in the left angular gyrus, though in the first of these cases the tumour was removed from the supramarginal and probably compressed the angular gyrus. Therefore we may say that with tumours in the parietal lobe posterior to the ascending parietal convolution the general symptoms tend to be absent or to appear late in the disease; the fits are general or begin with a sensory aura; paralysis of the side opposite to the tumour with the accompanying alteration of the reflexes is absent, slight, or occurs late, unless the tumour extends deeply, as in the last case, and involves the internal capsule; hemianesthesia and hemianopia on the opposite side occur frequently and if they are permanent it would show that the sensory fibres and the optic radiations were destroyed. If the tumour be in the left parietal region word blindness, either transient or permanent, is present.

TUMOURS OF THE PITUITARY BODY.

The tumours which I propose to bring next to your notice are the tumours of the pituitary body. This body is situated in the centre of the base of the brain in the middle line and it rests in the hollow of the sella turcica just behind the chiasma the optic nerves. From its proximity to the chiasma the optic fibres, which come from the inner or nasal half of each retina, are liable to be pressed upon by a tumour growing in the pituitary body and thus to produce blindness of the inner half of each retina. Now, the rays of light which impinge on the nasal or inner half of each retina come from the outer or temporal fields of each eye; hence in tumours of

the pituitary body patients suffer from the loss of vision for the outer half of the field of vision of each eye, or bi-temporal hemianopia. Further, there is a peculiar disease, which was first described by Dr. Pierre Marie of Paris, and which is characterised among other symptoms by enlargement of the extremities, the hands, feet, nose, and chin, and is called acromegaly. In a certain number of these cases enlargement of the pituitary body has been found, and in these cases bi-temporal hemianopia has been present. The exact relation between the pituitary body and acromegaly is not quite certain, as every case of tumour of the pituitary body does not show signs of acromegaly.

The first case of tumour of the pituitary body, which was under my care seven years ago, was that of a woman, aged about 29 years, who five years previously had a severe mental shock. For four years she had severe headache and vomiting, and three years ago she had diplopia, which lasted only for a month. At this time she felt very listless and her skin felt to be too thick. About six months later she had pain in her right eye. She ceased to menstruate, for which she consulted Dr. A. E. Giles who asked me to see the patient. She got thin, but her hands and feet were noticed to be large, and a year before I saw her she had curious attacks of feeling strange, with a horrible feeling of dryness in the mouth followed by a glow all over her lasting for one minute but without loss of consciousness; also she had attacks of feeling faint and attacks of vomiting several times a week. There was slight headache over the right eye. When I saw her she had double optic neuritis, but there was no limitation of the fields of vision. She had paralysis of some of the ocular movements; with the right eye she could not look upwards and she had some diplopia on looking in all directions. The right pupil was larger than the left and it did not react to light though it did dilate when shaded. Besides these symptoms the face was noticed to be unsymmetrical; also it was observed that the extremities—viz., the feet, the hands, and the nose—had grown larger than they should be. She later developed bi-temporal hemianopia. A month or two later Sir Victor Horsley removed some bone in the right temporal fossa to give vent to the increased intracranial pressure and it was noticed at the operation that the bone was of a remarkable blue colour and had a thin fibrous appearance like papier-mâché and cutting it with bone forceps produced no sound. Her headache and vomiting were much relieved by the operation. She died about four years later and a tumour was found in the pituitary body compressing the base of the brain.

The next case was that of a man under my care, aged 36 years, who had for two years complained of pain in the frontal or occipital regions, failing eyesight which was blurred and worse for the last three months, vomiting which occurred daily a week before his admission, and general weakness. He had also occasional attacks of giddiness. Mentally his memory had become very bad and he had been lethargic and drowsy with definite delusions. On admission the sense of smell was not affected; the optic discs were both pale with evidence of old neuritis. He had bi-temporal hemianopia—i.e., loss of the outer half of the field of vision for each eye. The right pupil was larger than the left and did not react to light; the left pupil reacted when light was directed on to it from the inner or nasal side but it did not react when light was directed on to it from the outer or temporal side, thus showing that the inner half of the left retina was insensitive to light. This symptom is called the hemiopic pupil reaction and was first called attention to by Willbrand, and it shows that there is a lesion which is affecting the fibres in the optic nerve or tract somewhere between the retina and the centre for the con- traction of the pupils in the corpora quadrigemina, and in this case it would show that besides completely abolishing the pupil fibres in the right optic nerve the lesion was pressing especially on the fibres in the chiasma which come from the inner half of the left retina. The external ocular movements were normal. The lower part of the right side of the face showed defective movement, but otherwise there were no paralysis and no alteration of the reflexes. The hands were noted to be large but it was doubtful whether he had true acromegaly. A diagnosis of tumour of the pituitary body was made and Sir Victor Horsley operated from the right temporal fossa in two stages and reached the pituitary body which was occupied by a cystic tumour which was scraped out and drained. With regard to this operation I would say that Sir Victor Horsley has now operated on ten cases of tumour of the pituitary body.

The third case was that of a man, aged 29 years, under the care of Sir William Gowers, who for seven years had his sight affected and which was getting worse for three and a half years when he stated that he began not to see properly with one part of each eye. He was dull, drowsy, and sleepy; his memory was bad and at times he was restless and had delusions. He complained of diminution of sexual power and for six months he stooped and walked slowly. His smell was deficient, so that he could perceive, but not recognise, odours, but his taste was good. He had bilateral hemianopia with diminished vision, R.V. = $\frac{1}{5}$. On the right side the vertical dividing line passed through the fixation point, a condition which is unusual in cases of hemianopia from a lesion of the occipital cortex, and on the left side there was considerable contraction of the nasal fields, with loss of vision at the fixation point. The optic discs were pale with primary atrophy. The pupils showed the hemiplegic reaction—i.e., they reacted when light was thrown into them from the inner or nasal fields but scarcely at all when it came from the outer or temporal fields. The ocular movements were good, without nystagmus. There was fine tremor in both hands when they were held in front of him. There was no enlargement of the hands. At the operation a tumour of the size of a walnut was removed from the pituitary body by Sir V. Horsley.

The tumours which we have been considering are those that come within the powers of the surgeon to remove if their localisation can be sufficiently accurately determined and I now propose to bring to your notice some tumours of the basal ganglia which are presumably impossible to remove.

TUMOURS OF THE OPTIC THALAMUS.

I will take first tumours of the optic thalamus. This is a part of the brain of which the function is less known than that of other parts such as the cortex, but different symptoms have been described by various writers and these symptoms of lesions of the posterior part of the optic thalamus have been in the last year well put together by Déjerine and Roussy.¹ The chief symptoms are that voluntary movements are not much affected unless the internal capsule be involved, but involuntary movements and ataxia of the opposite limbs occur; the tendon or deep reflexes are slightly increased or are normal; the superficial reflexes are normal or absent, but the extensor plantar reflex (Babinski's sign) was not obtained in spite of the pyramidal degeneration which was present in some of the three cases on which the work is founded. Sensation was affected both objectively and subjectively; in the former all forms of sensation are involved but not absolutely and the loss is more marked at the periphery. Muscular sense and stereognosis, or the recognition of objects by the touch, are, however, completely lost. Subjectively there are severe pains in the limbs and hyperæsthesia, which is sometimes so severe as to prevent the use of the limb. Hemianopia occurs if the postero-inferior part of the thalamus be involved. The other special senses are not affected.

I have notes of three cases which were respectively under the care of Dr. H. Charlton Bastian, Sir William Gowers, and Dr. Ferrier. The first case was in the right optic thalamus but it also extended down into the right crus cerebri, and there were headache and vomiting and double optic neuritis, together with gradual weakness of the left arm, leg, and face, with some increase of the deep reflexes on that side. At first sensation was not affected but later there was left hemianæsthesia but apparently no hemianopia. The patient had several curious fits lasting half an hour and consisting of tonic rigidity of the left arm and leg. Mentally his memory was good but he was always falling asleep. Later he became comatose and had fits affecting both sides.

In the case under Dr. Ferrier the tumour occupied the whole of the left thalamus, especially its posterior part, and projected into the posterior part of the lateral ventricle, and also extended across the middle line to the right thalamus and back to the corpora quadrigemina. The patient was fatuous and suspicious and had numerous general fits, followed by hallucinations. There was no motor or sensory affection, but later there was right hemianopia.

In the case under Sir William Gowers the tumour was very large and involved the left thalamus and left internal capsule, spreading across to the right thalamus and down into the pons. The patient, a girl, aged 15 years, had fainting unconscious fits, with weakness and then anæsthesia

of the right hand and later of the right leg. On admission there was slight right hemiplegia with right hemianæsthesia and right hemianopia with some ataxia of the right hand, a symptom of lesions about the optic thalamus which was described some years ago by Sir William Gowers, and increase of the deep reflexes and diminution of the superficial with extensor plantar reflex. In addition there was left ptosis but the ocular movements were normal.

The internal capsule lies so close to the optic thalamus that it is very difficult in the case of a tumour not to have the internal capsule involved or pressed upon, and consequently in two out of the three cases described above there were hemiplegia and hemianæsthesia, and in one case hemianopia. In one of the cases there were no hemiplegia and no hemianæsthesia and only hemianopia coming on later, and in this case it would be very difficult to make a diagnosis of optic thalamus as the symptoms might be caused by a tumour of the parietal or the occipital lobe.

A history therefore of a slow progressive hemiplegia with hemianæsthesia and hemianopia all on the same side, with fits of a general nature but without any localising symptoms such as numbness in one hand followed by epileptiform attacks, as we found to exist in tumours of the parietal lobe, would make a diagnosis of a tumour about the optic thalamus and the posterior limb of the internal capsule probable. In both the cases where the internal capsule was involved the plantar reflexes were extensor in character and not flexor as described by Déjerine and Roussy, and in none of the cases were there severe pains in the limbs. In one case ataxia of the paralysed side was observed.

While speaking of tumours of the optic thalamus I would refer to some cases occurring at the National Hospital which were attended by marked tremor and incoördination of the limbs and which have been found by Dr. Gordon Holmes² to be due to tumours of the part lying beneath or ventrally to the optic thalamus known as the red nucleus which receives the superior peduncle of the cerebellum.

TUMOURS OF THE CORPORA QUADRIGEMINA.

The first case is that of a man, aged 42 years, under Dr. Ferrier's care. Six months previously he had headaches, chiefly occipito-vertex, which continued for two months; he had had none since. There was giddiness, during which he felt forced to the left. There was a tendency to fall backwards or to step back, and he staggered, always deviating to the left. For one to two years the sight was getting slowly worse. The hearing was poor, with tinnitus. For three months he had had diplopia. There were no vomiting, mental changes, or fits, but his memory was poor. He was apathetic. As regards the vision the left eye was better than the right; well-marked recent optic neuritis was present. There was great impairment of the upward movement of the eyes. There was slight divergence of the visual axes, but the lateral movements were good. Downward movement of the right eye was defective. Convergence of the right eye was poor. The pupils were small and inactive to light and accommodation. In walking he deviated to the left, keeping his right shoulder in front and his head to the right. The deep reflexes were normal; the abdominal reflex was diminished on the left side. The plantar reflex was flexor. There was marked tremor in the left hand, like that of paralysis agitans. A tumour, a glioma, was found extending the whole length of the mid-brain from the posterior commissure to the valve of Vieussens, and the tumour involved both the anterior and the posterior corpora quadrigemina of the right side, and a process of growth was seen between the red nuclei—the termination of the superior cerebellar peduncles.

The next was a case under the care of Dr. T. Buzzard, in which the patient, a girl, aged six years, had two tuberculous growths on the right side, one in the anterior and to a less degree in the posterior corpora quadrigemina, and the other, a ventral tumour, occupying the right nucleus ruber. The onset was gradual and for five weeks the right eye was closed. For two weeks she had tremor of the left arm spreading to the right arm, and for ten days vomiting with drowsiness. She had headache for four days; her gait was much affected and she tended to fall to the left. On admission the optic discs were engorged but the margins were clear. The pupils were unequal; the right was pear-shaped and larger than the left; there were no reaction to light and doubtful reaction to accommodation. There was marked paralysis of

¹ Le Syndrome Thalamique, Revue Neurologique, June 30th, 1906.

² Brain, 1904, p. 257.

the muscles of both eyes, especially of both third nerves, so that there were ptosis on both sides and no movements of the eyes except outwards and downwards with wheel motion (?superior oblique), and slight power of convergence on the left side. The facial muscles were weak on both sides; the tongue was protruded to the left. There was general stiffness of all the limb muscles; the head lay towards the left shoulder; the left limbs were weak, with coarse irregular tremor of both arms at all joints but more in the left than the right. The tremor occurred when the arms were at rest but not during sleep, and it was increased on volitional movement. When the patient stood up there was tremor in the left leg and she fell to the left in walking.

A case under the care of Dr. Ferrier, a man, aged 53 years, had left-sided headache and two months before admission he suddenly fell down, was dazed and giddy, and the attack was followed by diplopia with staggering to the right. Another attack occurred two weeks later. On admission he had headache and vomiting but no optic neuritis. His speech was indistinct; he was drowsy but intelligent; he had diplopia. He had marked ocular symptoms, double ptosis, and marked paralysis of the lateral movements of the left eye with paralysis of the right internal rectus; the upward movement of the left eye was very feeble. The pupils were small, equal, and reacted extremely slowly to light. There were slight right facial weakness and progressive paresis of the right arm and leg. The left external pterygoid, temporal, and masseter were weak. There were anaesthesia and relative analgesia of the right face, arm, and leg. The right knee-jerk was absent and the left was feeble. The plantar reflex was flexor on both sides. A tumour (sarcoma) was found in the anterior corpora quadrigemina measuring one and a quarter by one and a half inches, not involving the posterior corpora quadrigemina, the crura, or the optic thalamus. The aqueduct of Sylvius was pressed upon.

According to Dr. Ferrier's observation and experiments on the corpora quadrigemina it would appear that these bodies are connected with the movements of the eyes and pupils, with vision, and with equilibration. In the three cases which I have brought before you in all of them there was marked paralysis of the movements of the eyes and especially of upward movement, and also absence of reaction of the pupils to light and in two cases to accommodation. As the corpora quadrigemina lie just above the nuclei of the third nerves, it is exceedingly difficult to say how much of this ocular paralysis is due to direct involvement of the corpora quadrigemina by the tumour and how much to the indirect pressure on the nuclei of the third nerves. Another symptom which is important in view of the association of these bodies with equilibration is that in three cases the patients are described as staggering towards the side which was opposite to the lesion. Therefore in a case which presents the general symptoms of tumour, marked paralysis of the ocular movements with fixation of the pupils and staggering to one side is in favour of a tumour of the corpora quadrigemina. These cases are often difficult to diagnose and we must remember that paralysis of the ocular muscles and fixed pupils are met with in cases of locomotor ataxia, but in these cases while there would probably be other symptoms of locomotor ataxy, they would not present the general symptoms of a tumour.

TUMOURS OF THE CEREBELLUM.

I would remind you that the cerebellum consists of two lateral hemispheres joined by a median portion called the vermiciform process. We have therefore to consider tumours growing outside the cerebellum and compressing it and tumours growing within the cerebellum or, in other words: (1) extra-cerebellar tumours, and (2) intra-cerebellar tumours, divided into (a) tumours of the lateral hemisphere or lobe and (b) tumours of the vermiciform process. We have, as in tumours of other parts of the brain, the three general symptoms, headache, vomiting, and double optic neuritis; and we have, further, the following localising symptoms: vertigo, pressure on cranial nerves (auditory, facial, trigeminal, sixth nerve), motor symptoms (on the same side as the lesion), such as weak conjugate movements of the eyes, nystagmus, paresis of the limbs and of the trunk muscles, loss of tone in the muscles, ataxy of movements, tremor, staggering gait, alteration of the deep reflexes, with normal superficial reflexes, and peculiar fits. Time will not permit me to mention the experimental work of Ferrier, Luciani, Risien Russell, and of others, or of the clinical work of

Hughlings Jackson, Gowers, Alexander Bruce, Mills, Allen Starr, and others.

I have already enumerated above a general list of the symptoms of cerebellar tumours, and it will now be necessary to point out the different way in which these symptoms show themselves in extra-cerebellar and intra-cerebellar tumours. For this purpose I shall avail myself of the results obtained by Dr. Grainger Stewart and Dr. Gordon Holmes¹ who have written a paper based on a series of 40 cases of tumour of the cerebellum observed at the National Hospital, Queen-square. Of these cases, in 22 the diagnosis was confirmed by operation or by necropsy.

Taking, first, the extra-cerebellar tumours, we find that the majority of them grow from the flocculus or the auditory nerve in the anterior part of the posterior fossa. They are wedged in the angle between the cerebellum and the pons close up to the petrous part of the temporal bone and compress these structures without actually involving them. Occasionally we meet with cases in which the tumour lies more posteriorly in the cerebellar fossa of the posterior fossa and would compress the lateral lobe of the cerebellum and would give probably the same symptoms as an intra-medullary tumour of the lateral lobe. With this proviso I will refer to these tumours in the anterior part of the posterior fossa as extra-cerebellar growths and those within the lateral lobe of one side as intra-cerebellar tumours.

In both extra-cerebellar and intra-cerebellar growths the headache is severe, vomiting is nearly always present, and optic neuritis is, perhaps, more early in its appearance in intra- than in extra-medullary tumours. Of the localising symptoms, vertigo or giddiness is a frequent symptom in both forms of tumour. True vertigo is either a feeling that the patient has that objects are revolving round him or a feeling that he himself is revolving round his axis. Now, according to the two authors quoted above, in both forms of tumour the patient in the vertigo thinks that objects are going in the direction away from the side of his lesion; in other words, with a left-sided tumour the objects would seem to go from the patient's left to his right. With regard to the patient himself with intra-cerebellar tumours he seems to turn in the same way as the objects—i.e., from left to right—whereas in extra-cerebellar cases he seems to turn the opposite way—i.e., from right to left. Taking first extra-cerebellar tumours we find that compression of the cranial nerves, and especially of the auditory and facial nerves, is a very common symptom, as these tumours grow close to the internal auditory meatus where these nerves enter the cranial cavity, and as a result we get loss of hearing to sounds heard through the air, as well as those conducted by bone, also tinnitus, buzzing or switching noises; facial paralysis involving all parts of the face; occasionally the fifth nerve, the trigeminal, is pressed upon, and especially the sensory part, causing numbness, tingling, or loss of sensation of the face on the same side as the tumour; also in many cases paralysis of the sixth nerve with weakness of the external rectus; rarely the ninth, tenth, and twelfth nerves. This compression of the cranial nerves does not occur in intra-cerebellar tumours. Motor symptoms occur on the same side as the lesion. This shows itself in the conjugate movements of the eyes, so that there is difficulty in turning both eyes towards the side of the lesion, and this is attended by nystagmus, slow jerking movements when the patient looks towards the side of the lesion. This occurs in both forms of tumour, perhaps more in extra-cerebellar. In the limbs on the same side as the lesion in intra-cerebellar lesions there is diminished power, and in a few cases it was observed that the muscles of the spinal column, especially the erector spinae, of the same side were weak. This paresis is more common in intra-cerebellar cases. Associated with the hemiparesis there is loss of tone, so that the muscles of the limbs on the same side as the lesion are flaccid and flail-like, and the two authors I have quoted point out that though in locomotor ataxy this flaccid condition is associated with absent knee jerk in cerebellar tumour it is often combined with an increase of this reflex. They also mention a condition which is important—viz., that if a normal person executes a movement against a resistance which is suddenly removed he is able to prevent the movement being carried on by bringing into action the antagonist muscles, but in cerebellar tumours this power appears to be lost. Also ataxy

is present in the paretic limbs which is not increased when the patient closes his eyes, showing that its origin is central and is not due to peripheral sensory changes as in locomotor ataxy.

Associated with incoördination is the condition pointed out by Babinski in the paretic limbs of the same side—viz., that the patient cannot rapidly pronate and supinate the forearm owing to a defective coördination of the muscles. I have myself seen this symptom in several cases of cerebellar tumour, but according to Stewart and Holmes it cannot be looked upon as pathognomonic of cerebellar disease. Both ataxy and this last symptom occur equally in the two forms of tumour.

According to the same two authors in extra-cerebellar tumours there are irregular tremors in both arms when they are horizontally extended, while in intra-cerebellar tumours they are absent. The peculiar reeling, staggering gait has been known for some time and it has been described especially by Dr. Hughlings Jackson. It is best likened to that of a person trying to walk on a rolling ship at sea, but with a tendency to go to one side more than the other. The difficulty has always been to determine to which way the patient tends to fall. According to the two authors mentioned above the patient tends to stagger and to deviate towards the side of the lesion and he would thus walk in a circle, but he knows his weakness and tries to counteract it by bringing forwards the shoulder on the same side as the lesion. Another way of testing which side is affected is to make the patient stand on one leg and then on the other and it will be found that he is more unsteady on the leg of the same side as the lesion. This walk occurs in both forms of tumour. In tumours affecting the vermis in the middle of the cerebellum the reeling is more uniform and the patients tend to fall backwards or forwards.

The condition of the reflexes is one of much importance and especially the knee-jerk. According to the same authors in extra-cerebellar tumours the knee-jerk is not altered, while in intra-cerebellar tumours of one side the knee-jerk on that side is, if anything, diminished, but this is very uncertain, and from the cases which I have seen I should not be disposed to think that any definite conclusion can be drawn. The superficial reflexes are not altered in intra-cerebellar tumours and I have myself never seen the extensor plantar reflex in pure cerebellar cases.

It must, however, be remembered that, in extreme pressure from an extra-cerebellar tumour on the pyramidal tract in the pons, paresis may occur in the limbs on the opposite side to the lesion, due to decussation of the pyramidal tract below, but when this is the case there will be some rigidity with increase of the knee-jerk, diminution of the superficial reflexes, and the extensor plantar reflex in the opposite limb.

Dr. Hughlings Jackson has described peculiar fits occurring in tumours of the vermis, with retraction of the head and arching of the back. I have in two cases at the Great Northern Central Hospital⁶ seen this arching of the back with tonic contraction of the erector spinae, but one of these cases was a hydatid in the posterior cornu of the right ventricle and both muscles were contracted, and the other was a case of chronic hydrocephalus in an adult and only the right erector spinae was contracted; the contracture might have been caused by pressure on the vermis of the cerebellum.

The diagnosis of cerebellar tumours from cerebral is made by a comparison of the symptoms given above with those which were found to exist in tumours of the cerebrum. The absence of mental symptoms, of sphincter troubles (except at the end of the disease), and of epileptiform attacks, the presence of a reeling gait associated with deviation, say, to the left, with weakness of movements of the eyes to the left and paresis of the left limbs without alteration of the reflexes, would be in favour of an intra-cerebellar tumour of the left lateral lobe; while deafness and facial paralysis of the left side with conjugate weakness of the eyes and paresis of the limbs of the left side, and with weakness and rigidity of the right limbs, together with increased knee-jerk and extensor plantar reflex, would be due to an extra-cerebellar tumour of the left side.

Tumour of the pons at its lower part might be taken for cerebellar cases but in a typical case due to a lesion in the left half of the pons there would be complete paralysis of the left face, and perhaps left deafness, the eyes would be conjugately deviated to the right, and there would be spastic

paralysis of the right arm and leg with increase of the right deep reflexes and extensor plantar reflex, and the paralysis would come on early and would not be preceded by a reeling gait.

There is one point with regard to the optic neuritis on which I should wish to say a word. Without counting the 40 cases of cerebellar disease described by Stewart and Holmes, who state that in the majority of the cases, the swelling of the papilla was greater on the side of the growth, I find that out of 50 cases, which I have described to you, in 19 the neuritis was more intense in the eye on the same side as the lesion, in 11 cases more in the opposite eye, in 13 it was equal on the two sides or there was no note to say that there was any difference, and in seven cases there was no neuritis.

In conclusion, I would say that I have endeavoured to bring before you the symptoms which were associated with tumours situated in different parts of the brain, and if these symptoms are present it is possible in many cases to make a correct diagnosis; in some cases where there are no symptoms or where the symptoms are misleading it is not possible and I would refer you to an interesting paper by my colleague, Dr. James S. Collier,⁷ who points out the false localising signs of intracranial tumours which may mislead the unwary—aye, and the wary too. It only remains for me to thank you for the kind attention which you have given.

ABSTRACT OF

The Morison Lectures

ON

INSANITY, WITH SPECIAL REFERENCE TO PROGNOSIS.

Delivered before the Royal College of Physicians of Edinburgh on Jan. 28th and 30th and Feb. 1st, 1907,

By A. R. URQUHART, M.D. ABERD.,
F.R.C.P. EDIN.

PHYSICIAN-SUPERINTENDENT, JAMES MURRAY'S ROYAL ASYLUM,
PERTH.

LECTURE III.¹

Delivered on Feb. 1st.

HAVING reviewed the clinical experience of 25 years from a statistical point of view, I shall now proceed to consider certain correlations between somatic and mental phenomena. There is no doubt just at present some disparagement of psychology in these studies and a sceptical attitude towards the assumed occurrence of a mental disorder without an operative physical cause, yet I cannot range myself with the opponents of psychology. For instance, by his researches into the phenomena of fatigue, Kraepelin has explained what was formerly obscure and improved the methods of education throughout Germany. Mental fatigue and bodily fatigue exercise the same effects upon the brain and it is a mistake to suppose that by altering the kind of fatigue reparative processes will be encouraged thereby. Italian observers have demonstrated the toxic nature of fatigue in the lower animals and we can precisely understand the process.

The age and health of the parents at the time of conception of offspring are of importance in the evolution of the race. I have recorded several instances of paternal drunkenness in this connexion, but the mere accident of one act of drunkenness is relatively unimportant compared with the habitual condition of the persons noted. Nor have I been able to discover any relation between the use of midwifery forceps and the individuals who have come under my care.

What is of real importance in the study of neuropathic children is the immediate ancestry, the environment, and the education which condition them. Dr. Dewey of Chicago has investigated the early life conditions in 200 sane and 200 insane persons. This comparative method elicits a series of facts which tend to confirm the observations which I have submitted. Briefly, whatever tended to eugenics

¹ Brain, 1905, p. 450.

² Lectures I. and II. were published in THE LANCET of March 2nd (p. 572) and 9th, 1907 (p. 645), respectively. The lectures were illustrated by statistical tables, charts, and clinical observations.

⁶ Brain, 1906, p. 227.

found expression in the sane in a higher degree than in the insane. For instance, excessive use of alcohol, of tobacco, of tea, and of coffee appears more frequently in the insane families; tuberculosis, insanity, and malarial environment follow the same rule. Neglect and poverty, lack of home discipline, and defective schooling were all more apparent among the insane. In short, a neuropathic heredity was continued in a neuropathic environment and issued in a neuropathic generation.

The evolution of character, ability, temperament, and success has not been studied with that care which the subject demands. It is not sufficient to write around the great names. We know that the race tends to average abilities, with some slight advantage to the families of exceptionally able, *well-balanced*, intellectual parents. It is the kind of mistake to which I have already referred that exclusively considers the exceptional, the bizarre, and the extremes. For the determination of the probabilities of inheritance of any character, physical or mental, within normal limits or the possibilities of disease a study of the general population is absolutely necessary. The successes and the failures must be considered in detail. Professor Karl Pearson has found that the intensity of correlation between "want of mental balance" in parents and insanity in children is from 0.25 to 0.30, probably the same as exists in regard to other characters—e.g., stature, colour of eyes, and so on—thus showing, as might be expected, that somatic conditions are paramount in the first instance; however environment may possibly influence the organism in its growth and development. I plead that Professor Karl Pearson will have the support of the College in his endeavour to collect sufficient data for the further elucidation of this question, in the firm belief that the results will lead to a better understanding of the national requirements towards the attainment of health and efficiency.

As sleeplessness is the most invariable prodromal symptom of insanity, so it is of the greatest importance in the course of the malady, whether from the view of treatment or prognosis. The high pressure of the blood interfering with repose and nutrition is the chief disturbing factor. The whole endeavour of treatment must be bent towards the restoration of sleep not so much by the crude effects of narcotics as by the wider application of medical skill. It is not my purpose to touch upon treatment or nursing, nor is it necessary to insist on the importance of this point. The management of the insane at night is quite as important as their management by day and their conduct at night is just as indicative of their future as their conduct by day. The return of sleep is a sign of recovery or failure to recover—a good sign if improvement is concurrent in other directions, a bad sign relatively if there is no, or but partial, concurrence. For insomnia is not a symptom of chronic insanity. Excepting a few cases of chronic mania, a few of circular insanity in the excited phase, and especially of that class in which hallucinations are prominent or the *cenæsthesia* is greatly perverted, the old cases sleep soundly and are aroused with difficulty. This restoration of sleep bears a close resemblance to the increase of body weight. If the nutritive processes become active and there is a concurrence of other favourable signs the outlook is hopeful, but degeneration may go hand in hand with an unhealthy pallor and an undesirable, flabby corpulency accompanying permanent feebleness of mind.

When the somatic failure is general it is evident to the most casual observer. The chronic degraded patients of one asylum closely resemble those of their class in any other asylum. We cannot neglect the facial appearance of the patient in discussing the question of prognosis. It is characteristic of degradation, if degradation has declared itself. Apart from the emotional expression of the prevailing mental tone there is an immobile, listless, preoccupied appearance which augurs badly for the future. The nervous system is out of gear and the enfeebled muscles indicate that failure. The complexion is pallid and the skin shares in the general inefficiency. The eyes are relaxed and their mobility is restricted. Pigmentation of the skin is of evil omen, and if it is systematically picked by the patient one can hardly look for recovery. The morbid condition of the skin in insanity has not been sufficiently investigated as yet. The development of nervous system and skin from the point of view of embryology may in some measure elucidate these complications. In any case the extremes of harsh dryness in certain forms of melancholia and copious perspirations in certain forms of mania are commonly recognised. Also

the greasy offensive appearance in degraded cases. Perhaps the most important cutaneous symptom from the point of view of prognosis is the pigmentation which so frequently occurs and which must be considered as indicative of a progressive and intractable disorder when it is unmistakable and long continued. The appendages of the skin are also affected. The state of the hair is a valuable index to the general condition.

The general nutrition, perhaps, is the most certain index of the progress of a case, as has been well brought out by the study of body-weight in recoveries and removals. In asylum life the periodical and exact weighing of patients is a routine practice generally adopted and generally trusted to indicate the variations in somatic conditions which are so important in the adoption of remedial measures suitable for each particular case; also as indicative of the earliest warnings of complications, such as tuberculosis. A restoration of lost body-weight, like a restoration of diminished secretions, is almost invariably one of the first signs of returning health.

The muscular system presents very many problems of interest apart from the pareses and paralyses of pathological insanity. The fumbling fingers of a general paralytic fail in muscular energy, in coördination, and in the guiding direction of the higher cortical centres. In lesser degrees the finer adjustments of intention and action are discernible in ordinary insanity, and as the degradation deepens so the inability becomes declared. The somatic failure is then positive. But as a general rule it may be stated that the deeper the mental degradation the more obvious are the reflex defects, whether motor or mental. All cases displaying rhythmic, monotonous movements are to be regarded as most seriously damaged. In some cases these movements, apart from idiocy, have a gross pathological basis. The morbid condition of bones in the insane has long been recognised and I believe that the anæmic failure of the chronic insane is part and parcel of the osseous defect. I shall not venture to discuss questions of craniology, in reference to which palatal deformities are of importance in determining a neuropathic heredity in many cases where information is given reluctantly. A few words may be permitted in reference to oral sepsis and a common symptom of general paralysis—a persistent grinding of the teeth.

The gait of insane patients is characteristic: the bent, stiff neck, the downcast eyes, the untidy dress, the careless slouching walk, are all in various degrees indicative of somatic and mental degradation. Extraordinary attitudes impress one unfavourably. Often these are assumed by adolescents who may recover, but my experience is that they are symptomatic of relapse sooner or later. Alterations in handwriting and tricks of voice or speech indicate the inter-action of mind and body in many important directions. Vain and purposeless repetitions of phrases in the letters of a person not appreciably insane are often evidence of chronic alcoholism and specially, I believe, of cocaineism. In the case of a person tending towards chronic insanity such repetitions are a mark of incurability. The corresponding phrase of speech is not less ominous; still there is a lower grade—*echolalia*, in which there is a repetition of words heard by the patient and immediately reproduced, and lower still in the scale is *verbigeration*, in which new words are invented.

To resume, then, these various conditions of the organism betray each in its own relations, the generalised nature of the insanity, the generalised defect and disorder in which the mental symptoms originate, and upon which they depend. Within the compass of these brief lectures it is impossible to discuss all the somatic conditions. I rather endeavour to indicate the trend of experience, and prefer to reserve the consideration of highly specialised subjects of importance, such as the work of Flechsig relative to the association fibres of the brain demands.

I now, therefore, attempt to correlate somatic disorders with the mental phenomena of insanity. It is generally recognised that prognosis will vary with the incidence of these disorders and diseases. If bodily health can be re-established there is hope of mental improvement and recovery. For instance, if there is no possibility of restoring a damaged cardio-vascular system the outlook is gloomy. Prognosis therefore must await the determination of these events. Of course, those with somatic stigmata generally tend to marked mental degeneration. It is necessary to read for hæmopoietic disorders, *anæmia*. The sary to read for the blood, discoverable by modern methods, can, of course, find no place in old records. In the

cardio-vascular group it is important to note the depression and fears which are exaggerations of the usual features of these maladies. Gastro-intestinal cases are similarly affected. The great excess of the female sex under the heading of generative disorders is in accordance with general experience. I have not been able to corroborate certain American observations which record extraordinarily voluminous morbid details in the sphere of gynaecology. There can be no doubt that the urine and vaginal discharges of the insane are highly toxic, but the vast array of surgical necessities alluded to is not within my experience, either by the bedside or in the post-mortem room.

The common concomitant of generative disorder is the irregularity or suppression of the catamenia. It is usually said that menstrual periods are accompanied by exacerbation of insanity. That is by no means the rule according to my observations. No doubt the return of catamenia is a favourable indication and we have had several such cases after the exhibition of ergoapial where other drugs had failed. I might also record a case of recovery in which the catamenia continued suppressed and were restored by the introduction of a stem pessary at home. Quite exceptionally, I have had good results from the use of ovarian extract after ovariectomy, but can present no case under asylum treatment in which that preparation altered the mental condition. It is our routine practice to record daily on calendars the excitement or depression noticeable in individual patients. These calendars also show the days of menstruation. I have condensed these observations for years together, and on examination of the results find that it is quite exceptional to correlate the catamenia with the exacerbations of insanity; occasionally this is discovered in mania but never in melancholia, so far as my observations go. What is of much more importance are the toxic conditions of these tracts—whether puerperal or not.

My aim has been to direct attention to somatic disorders and to correlate those with insanity under two broad divisions—ordinary and pathological. Yet it is necessary to say something in general terms. For instance, the primary fact of consciousness has a relation to prognosis; if it is lost for any considerable space of time it is a measure of mental degradation indicating incorrigible defect. Mere confusion is not at all a hopeless condition, but delirium is of the gravest import. I have not found that perversions of identity are so incurable as was formerly supposed; but as a general rule it may be stated that perversions relative to self are much less intractable than those relative to others. Did time permit, these opinions could be supported by clinical illustrations, but I must pass to the sphere of sensation. The general catathenia is of importance in this connexion. It is a common measure of convalescence to observe carefully the mental attitude relative to fatigue. A loss of the sense of fatigue, an abolition of sensation in regard to fatigue, denotes an uninterrupted course of mental disorder; on the contrary, when the patient begins to complain of fatigue and pain and discomfort the complaint is welcomed as the first sign of improvement.

The sensations colour the delusions, and in that respect the study of Table XVI. is interesting. The genesis of delusions from the painful sensations of gastro-intestinal disease is readily understood—it is easy to pass from the feelings of gastritis to the feelings of poisoning. In fact, I would venture on the generalisation that perverted sensations determine the tone of the delusions and the general mental condition. It is unthinkable that the depressing nature of abdominal disease, altogether apart from insanity, should issue in grandiose ideas or pleasurable excitement. It would seem that hallucinations can be an affair of auto-suggestion in some cases. The measure of degradation may be ascertained by observation of the power of attention and memory, yet these may be acute and the condition of the patient may be hopeless as regards recovery. It is commonly supposed that an unimpaired memory is an indication of sanity, yet the idiot savant may have a memory of extraordinary tenacity. The perversion of intellect may be complete and both attention and memory perfectly unimpaired.

In point of time, we have already seen that recent cases are most favourable in expectation of recovery and that cyclic variations are common; also that a sudden onset and a sudden recovery almost inevitably mean neuropathic inheritance and recurrence sooner or later. A settled periodicity is bad, yet if there are no remissions tending to recovery the outlook is not less gloomy. The best sign in this respect is intervals of remission, daily becoming of

longer duration; and it is specially gratifying when self-knowledge returns, interest in surroundings is displayed, and neatness of dress is studied—in fact when there is an indication of an appreciation of the amenities of existence, when the prayer of the Kilbarchan weaver is answered—in moderation.

And so we inevitably come back to the initial stage of this discussion, the importance of somatic conditions in relation to the mental states. Prognosis in insanity must proceed upon a wide and careful review of the whole circumstances affecting the individual, who is in a degenerative condition physically and therefore mentally. All that goes to make up that degenerative condition must be separately investigated and summed up. The elements of prognosis are analytical and synthetical, and it is determined by the nature of the degree of the involvement of the organism in the widest sense. If all the functions are involved, if the degenerative process is universal and intractable, the future of the individual is desperate indeed; if the defect is partial and amenable to treatment naturally the case is more hopeful as these limitations of involvement decrease. In that sense how hopeless is the case of pernicious anaemia in which the mental manifestations are the direct result of an impoverished brain. For a time it may be possible to draw upon the reserve of red blood corpuscles but the stock is not inexhaustible. It is in consonance with these observations that the toxic theory of insanity demands our most serious attention and excites our liveliest hopes. Prognosis can never be an affair of aphorisms; these *obiter dicta* require to be fitted into the general scheme of things; they are altogether too facile and too partial for our purposes.

Finally, on the general question of prognosis of insanity, we have been counselled to give a guarded opinion, because it is the unexpected that happens. An eminent physician once said that he was paid for an opinion, not for a prophecy. But an opinion is truncated and ineffective if it be only relative to the moment of delivery. The questions demanded of us are urgent and necessary: Is the family business to be wound up, are the pressing difficulties permanent or temporary, is the home life to be altered for a time or for ever, are careful plans for a career to be abandoned or postponed? I am impatient with a science that executes a strategic retreat before such a battery of questions. In the last resort, the kindly words of Horace recur to us:

"Tu ne quaesieris, scire nefas, quem mihi, quem tibi
Finem dederint, Lencore, nec Babylonis
Temptaris muros."

Yet it is a poor account of scientific medicine if it is to be recorded of us that our premonitions are of no more value than a Chaldean horoscope.

It is an excellent practice in which, throughout the years I have followed Sir James Crichton-Browne, to sum up the probabilities in the case-book on the reception of every patient. At least, it is a stimulating corrective for self-satisfied science; at best, an incentive to the careful study of every circumstance affecting each patient. For it is only by that study, indefatigable and personal, that advance is possible to us or to our profession. More steadfastly than ever our profession labours for the prevention of disease. That resolves in questions of eugenics, education in the widest sense, and a determined, informed study of all morbid phenomena.

THE MEDICAL TREATMENT OF CONGENITAL PYLORIC STENOSIS.¹

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THE symptoms and diagnosis of congenital pyloric stenosis are now well known and have been very fully described by Thomson, Cantley, Still, and others. The exact pathology of the affection is still unsettled and it may be that the results of treatment will throw fresh light on the subject. This paper deals only with the medical treatment by means of dieting and gastric lavage, a method of treatment to which Still has specially directed attention.² I propose to give brief notes of the last three cases which have come under my

¹ A paper read before the Clinical Society of London on March 8th, 1905.

² THE LANCET, March 11th, 1905, p. 632.

care and then to make some observations on the treatment generally.

CASE 1.—A male infant, six weeks old, a first child, was sent to me on May 22nd, 1906. The history was that the child had appeared to be healthy at birth but that vomiting occurred during the first week and had continued ever since. The vomiting was intermittent, sometimes only once a day, sometimes oftener, and usually occurred about 20 minutes after a feed. The vomited material was sometimes in large quantity and was violently pumped out. The child was losing weight steadily; the bowels were very constipated and acted only after the use of a glycerine suppository. The motions were small but healthy in appearance. The child was subject to flatulence, attacks of abdominal pain, and screaming attacks. He was always hungry and always ready for a feed. The diet had been the mother's milk and occasionally Allenburys food and peptonised milk had been tried and had been rejected. The breast milk when examined was found to be satisfactory, although the chief constituents were rather small in amount (proteids, 1.75 per cent.; fat, 2.4 per cent.; and sugar, 5.06 per cent.). The patient was a wasted, whining, unhappy looking infant weighing 7 pounds 6 ounces. On examination of the abdomen, after manipulation, the stomach was seen to be contracting strongly and peristaltic waves passed from the left to the right side of the abdomen. The pylorus was not felt. On the same night general convulsions supervened and lasted intermittently for 36 hours but passed off under the use of bromide and chloral rectal injections. The treatment ordered for the pyloric trouble was lavage once a day and a continuance of the breast feeding every two hours by day and every four hours at night, ten minutes at a time. On washing out the stomach a considerable amount of soft flocculent curd was removed, but this seemed to be of such a fine character that gastric digestion was evidently good. It was also considered that such a residue should pass easily through the pylorus unless abnormal spasm was present. The child remained under observation for three weeks during which the progress of the case was as follows. The lavage was carried out every day for the most part, sometimes every second day. The amount of residual food left in the stomach was found steadily to diminish. The vomiting became much less frequent and less violent, and towards the end of the time was trifling. The bowels came to act naturally without injections, and at times diarrhoea with green stools occurred. The employment of malt and oil, half a drachm thrice daily, seemed to produce gastro-intestinal disturbance. The child became much more comfortable and brighter with the cessation of the abdominal pain and vomiting. The weight at the end of three weeks was exactly the same as at the beginning. The infant then passed from my care and was treated on the same lines by a medical friend for a few weeks. Four and a half months later the following report was very kindly sent me by the practitioner under whose care the child had been placed. Steady improvement had taken place, interrupted only by a series of convulsions, which had been traced to the fact that the mother was menstruating at the time. The gain in weight was very slow but the infant now weighed ten pounds—i.e., almost three pounds heavier than when first seen. The weaning process was being carried out as the mother's milk was falling. The visible peristalsis of the stomach had passed off entirely two months previously.

CASE 2.—A male infant, three months old, was sent to me on Oct. 12th, 1906. He was healthy at birth, weighing 7½ pounds, and had been fed on cows' milk and water, which seemed to agree with him. At the age of five weeks vomiting had commenced and had persisted. It occurred once or more daily and was frequently very violent, the food being pumped out in large quantity. The bowels had been rather loose at first but later constipation had been marked, and for a month previous to my seeing the child the bowels had acted only after a glycerine suppository and the motions had been extremely small. The child slept badly, had frequent attacks of abdominal pain, and was always ravenously hungry. There had been a steady loss of weight going on for about two months. Many diets had been tried, including cows' milk and water, Mellin's food, peptonised milk, lacto, whey, and Allenburys food, but none of these had had more than a temporary effect on the vomiting. The child had been fed quite regularly every two and a half hours by day and somewhat less frequently by night. On examination the infant was found to be extremely emaciated and restless; he was whining, and he looked a picture of misery. His weight

was then 6 pounds 13 ounces. The temperature was normal. There was no sign of disease anywhere apart from the stomach. The abdomen was somewhat distended and gastric peristalsis was elicited by rubbing the abdominal wall. The contraction waves were very strong and passed right across from under the ribs on the left side to be lost on the right side of the abdomen. They were not apparently painful. The pylorus was not felt by me, but my friend Dr. Edmund Cautley, who kindly saw the case with me, was able to palpate it. As the infant was at the time on Allenburys food that diet was continued, and washing out of the stomach was performed daily. The vomiting rapidly diminished but complete digestion as ascertained by the results of washing out was not obtained until the feeding was employed every hour by day and every two hours by night. The bowels soon began to act naturally and a steadily increasing amount of faecal matter was present in the stools. The gain in weight was at first very slow and some weeks showed a loss of weight. The diet was varied with whey, peptonised milk, and cream, and a small quantity of malt extract, raw meat juice, and grape juice was given. The improvement was steady if slow and there was a definite change for the better in the infant's comfort and general appearance. The progress was interfered with at times by attacks of diarrhoea and later by an attack of influenza with bronchitis. The patient passed out of my care at the end of three months and was then a smiling active infant, keenly interested in all that went on, and weighed 9 pounds 6 ounces, a gain of two and a half pounds. The gastric lavage was still being carried out every second day as the influenza had left the infant very liable to gastric disturbance. Had it not been for this complication the washing out would probably not have been required so frequently.

CASE 3.—A male infant, three months old, was admitted to hospital on April 20th, 1906, suffering from marasmus. The child had been healthy at birth, but vomiting had come on a fortnight later and had continued. The diet had consisted entirely of the breast milk but wasting had been persistent. The bowels were constipated, acting only every second day, and there had never been diarrhoea. There was nothing of importance in the family history and the patient had presented no signs of constitutional disease. On admission the infant was found to be a typical example of "marasmus," very wasted, whining, always hungry, and sucking his fist. The rectal temperature night and morning was 98° F. The weight was six pounds. On physical examination the abdomen was found to be rather distended and tense and an inguinal hernia was present, but there were no signs of organic disease. A diet of equal parts of cows' milk, barley water, and lime water, half an ounce of each, was ordered, and the feeding to be every two hours by day (16 hours) and every four hours by night (eight hours). At the end of 24 hours the quantity at a feed was raised to three ounces. After three days half a drachm of cream was given thrice daily. Under this treatment the child seemed to improve, gained six ounces in weight in ten days, and seemed more comfortable. The amount of cream was then increased to half a drachm at each feed and this was quickly followed by vomiting. On returning to the former amount of cream the vomiting ceased. On May 9th it was noted that although the bowels only acted once a day and enemata were sometimes required, the motions were satisfactory. The infant, however, was losing weight, although without any obvious discomfort or vomiting. Three-ounce feeds of milk and lime water, equal parts, every two hours by day and every four hours by night, with half a drachm of cream and 15 drops of cod-liver oil thrice daily were ordered. Vomiting quickly followed and continued. On the 14th examination of the abdomen showed marked peristalsis of the stomach in waves passing from left to right and a diagnosis of congenital hypertrophy of the pylorus was made. Washing out the stomach daily was ordered. The food was now changed to peptonised milk and water and later cream, whey, plasmon, and plain milk-and-water were given at times. The amounts varied from three to four ounces at intervals of three or four hours. The washing out was continued daily and there soon came to be but a small residue present in the stomach two hours after a feed. When, however, it was reduced to every second day a considerable amount of food was found and the daily routine was resumed. The vomiting was entirely relieved and occurred very rarely and in a very mild form. At the end of three months' treatment the weight was 6 pounds 11 ounces, a gain of only 11 ounces. The peristalsis of the stomach after a

feed was as marked as ever. The temperature ranged between 96° and 97°. Treatment by opium had been given a full trial, up to seven minims of liquor opii sedativus daily, without the slightest effect. After consultation operative treatment was decided on. The operation of stretching the pylorus was performed by one of my colleagues on July 23th. A typical large, hard, contracted pylorus was found. The only point about the operation which calls for notice is that the peritoneum was ruptured at the duodenal end of the pylorus and was sutured. The infant suffered from a good deal of shock during the following few hours but improved after saline infusions. Rectal feeding was employed for 12 hours and then one drachm of whey in an ounce of hot water was given every three hours. The amount of whey was steadily increased. On August 1st it was noted that there had been no vomiting for three days; the child was taking food well and seemed comfortable. The addition of malt or cream induced vomiting and whey alone was given. On the 3rd the child did not take food so well and he died suddenly and unexpectedly on the same night. At the necropsy the abdominal conditions were found to be healthy, there was no peritonitis, and there was no apparent cause of death. This sudden and unexplained death in marasmic infants after a serious operation is, of course, of common occurrence. The question as to whether better methods of feeding and other food materials might not have led to a cure of the pyloric condition without operation must remain unsettled, but further experience has led me to believe that the treatment might have been improved upon.

Remarks on treatment.—I shall not refer to the surgical treatment of this affection, a subject which was very thoroughly considered at the Toronto meeting of the British Medical Association.² My hope and belief are that as our knowledge and experience of the medical treatment advance there will be fewer and fewer cases in which surgical intervention is called for.

1. *The objects aimed at.*—The aim of the medical treatment is to remove any source of irritation in the stomach which may maintain pyloric spasm and to keep the stomach free from any irritating food material, digested or undigested, which may excite pyloric spasm. Within recent years many cases of this affection have been seen in the post-mortem room, and as we looked at the hard hypertrophied tissue and the complete stenosis it was a common remark that only operative treatment could have relieved the condition. It must be remembered, however, that the pylorus has two functions, contraction and relaxation, and the fact that the muscular tissues generally are hypertrophied is no reason for assuming that only the power of contraction is retained. I believe that both these functions are present at birth and that there is in addition a congenital hyperplasia of the muscular tissues of the pylorus, as Cautley has so strongly insisted on. For a varying length of time, days or weeks in different cases, all goes well and the pylorus acts normally. But a time comes, even in the most carefully fed cases, when some irritating (undigested) food lies in the stomach and the pylorus contracts strongly and remains closed. Vomiting follows. The repetition of such a condition gradually induces a more or less continuous spasm of the pylorus, or at least a spasmodic contraction which seriously interferes with the normal emptying of the stomach. It may be that in some cases, as in those recorded by Willoughby Gardner, and Still, it is possible solely by careful dieting and the use of a food leaving little residue in the stomach to check this over-action of the circular fibres of the pylorus. Such cases are probably rare but they support the view that there is no inherent vice in the pylorus. They are rare because a diagnosis could seldom be made at a stage when such treatment would usually be effective. By the time a diagnosis can be made with certainty the spasm of the pylorus is established and as the result hypertrophy and dilatation of the stomach have followed. We have then to deal with a fastidious, irritable, dog-in-the-manger pylorus, which must be humoured and soothed and deferred to in every way. It is not to be supposed that even in marked cases the pylorus never relaxes. At operations it has frequently been found that the hypertrophied pylorus can and does relax and will often admit the little finger without difficulty. In many cases the presence of faecal matter in the stools and the absence of vomiting for a week or more show that food is passing through the pylorus. The gravity of the affection lies in the fact that it does not do so

in sufficient quantity for the nutrition of the infant. These would appear to be the grounds on which medical treatment may be expected to do good and, expressed in other words, the aim of the treatment is to restore the function of relaxation of the pylorus which has been in abeyance owing to the more powerful action of the constrictor muscular fibres.

2. *The food and feeding.*—Although the stomach is much dilated and is capable of holding a large amount of food, small feeds are called for in order to secure complete digestion. Two or three ounces will be found sufficient at a meal and in bad cases one-ounce feeds are advisable. In order to supply a sufficient amount of nourishment the number of meals must be increased. An infant, aged one month, should be fed every two hours day and night and in bad cases, when only small quantities are allowed at a time, every hour by day. This may have to be carried on for some months unaltered but if the progress of the case allows of it one will naturally try to increase the amount at a meal and feed less often as time goes on. If the infant will sleep for longer intervals at night he should be allowed to do so but hunger will usually awake him with great regularity. Small quantities, from one drachm to four drachms, of plain water or dill water or cinnamon water may be given between the feeding times if the child is thirsty or wakeful. The difficulty in the complete digestion of the food in the stomach lies in the proteins and the fats, more especially the latter. Over and over again I have found the addition of cream or cod-liver oil bring on gastric irritation and vomiting.

If good breast milk is available it is the best food. A chemical analysis of the milk should be made and one would prefer to have rather a low amount of all the chief solids. The fat should not be more than 3 per cent. The quantity given at a time must be regulated by the duration of the feed, five or ten minutes as the case may be. Unfortunately, in many of these cases one finds that suckling has been stopped in the belief that the milk was disagreeing with the child and one of the most useful adjuncts in the treatment is lost.

If artificial feeding is employed, cows' milk as usually modified does not act well owing to the heavy curds which remain in the stomach. The foods which have proved most successful in my experience are peptonised cows' milk (without added cream), whey, and Allenburys food (No. 1). This last I take as a type of foods which are not in themselves suitable for healthy children, but which are capable of very complete digestion in the stomach. In addition, malt extract, raw meat juice, and grape juice have been given daily in small quantities. No doubt other foods may be found equally efficacious and the question of the suitability of the food is to be decided by the state of the stomach contents after washing out.

3. *Gastric lavage.*—The stomach should be washed out once a day for a prolonged period, and in bad cases this proceeding may be required twice daily for a time. It is quite a simple process in young infants, and if properly carried out leads to no discomfort or disturbance. It should be done when under normal conditions the stomach is empty—i.e., two, or two and a half hours after a meal, as the case may be. The value of the information gained from the nature of the stomach contents cannot be over-estimated. The wash-out should show a small amount of soft flocculent matter, which tends to get less in successful cases as time goes on. If, on the other hand, a large amount of matter is washed out, or undigested curds, it is clear that the food is not properly digested and will maintain the pyloric spasm. Dr. Cautley has pointed out that in many cases the mere washing out of the stomach systematically will check the vomiting and that this may prove misleading. This is perfectly true, and therefore one must examine carefully the nature of the stomach contents in order to see whether the residue would be likely to pass the pylorus. If this residue is of the soft flocculent nature described above one may reasonably expect that it can, and will, prove non-irritating, and will eventually pass naturally through the pylorus. Other indications of improvement must also be looked for and will be referred to later. For the observation of these points and for the lavage to be of any real value it is of the first importance that the physician should carry out the proceeding himself and not entrust it to any nurse however skilled and experienced she may be. Gastric lavage is not only beneficial to the infant but is also the means of showing the physician how to regulate successfully the food and feeding.

4. *Signs of progress.*—1. The vomiting ceases. This usually follows quickly after lavage and suitable feeding have been carried out. 2. The bowels act naturally. This is a very important sign of progress, for it is in such marked contrast to what occurs in untreated cases. In the latter constipation is the rule, artificial aids per rectum being very often required, and the motions contain little faecal matter. After the medical treatment has been begun the bowels act two or three times a day without artificial stimulation and the motions are larger and consist of faecal matter. 3. The stomach peristalsis becomes less marked, less strong, and gradually passes off. The complete disappearance of peristalsis may take some weeks or months, but the lessening is usually seen early in successful cases. 4. The discomfort, pain, apathy, and constant whining of the infant are removed and are replaced by a placid and comfortable state, in which even smiling is gradually evolved. 5. The nutrition of the infant is improved. This is manifested in a healthier colour, in increased activity of the limbs, and in a slow gain in weight. It is very important to remember that these infants cannot be fattened rapidly, that any attempt to secure this will probably end in disaster, and that the less weighing there is the better, especially if there are anxious relatives about. The most suitable foods are not fattening ones, and any excess of food is apt to produce disturbance either in the stomach or the bowel. On the other hand, the vital powers of the infant can be very much improved, and the disordered functions restored to healthy action, by a simple diet, and the fattening materials can be reserved to a later period. Progress in the infant is usually marked by a slow increase in weight, somewhat fluctuating at first, but tending to become steady as time goes on.

5. *Complications.*—A common complication in the course of treatment is diarrhoea. The bowel in such cases has been out of use for some time and is consequently unprepared for the food material which now passes through the pylorus. Hence probably arises an irritative form of diarrhoea. The best treatment is to reduce the amount of food given by one half and to keep it so until the diarrhoea has ceased. At the same time half a grain of grey powder may be given twice or thrice daily. When the diarrhoea ceases the amount of food can be again gradually increased. Such diarrhoea is always serious and may prove fatal. When vomiting occurs no food should be given for two hours in order to rest the stomach. Sips of hot water may be given if the child is thirsty. Intestinal flatulence is to be treated, like diarrhoea, by a temporary reduction in the amount of food.

6. *Medicinal treatment.*—The use of anti-spasmodic drugs such as opium and the bromides has not proved of the slightest value in my experience. Of course, infinitesimal doses of opium cannot be expected to do any good, but I have pushed the drug to its full physiological effects without any benefit whatever. Nor does it appear likely that the drug would have any special action on the circular fibres of the pylorus and fail to affect the longitudinal fibres to an equal extent. In cases of marasmic infants suffering from this affection, with all the tissues dried up, the use of saline injections both subcutaneously and per rectum has seemed beneficial. From four to ten ounces of normal saline solution can be given daily and will act as a restorative until the improvement of the pyloric function allows of the entrance of a sufficient amount of fluid into the system by the natural route. In cases in which the infant is much reduced or has a subnormal temperature brandy, up to half a drachm daily, will be found of service as a general tonic. The administration of cod-liver oil by intunction, if it be of any value, would appear to be specially suited to the conditions present in this affection. I have only employed it once and in that case a skin eruption quickly followed and led to its discontinuance.

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PASSMORE EDWARDS COTTAGE HOSPITAL, LISKEARD.—The annual meeting of the subscribers to this hospital was held on Feb. 26th. The medical report stated that 78 in-patients and 30 out-patients had been treated during 1906, being the highest number on record. The financial statement showed a small favourable balance. The committee decided to elect all the members of the medical profession in the town as honorary members of the staff, with Dr. R. H. Lucy as honorary consulting surgeon, Mr. J. R. Rolston as honorary ophthalmic surgeon, and Mr. W. H. Lyne as honorary dental surgeon.

ON TERTIARY SYPHILITIC FEVER AND THE VISCERAL AND OTHER CHANGES CONNECTED WITH IT.

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A GOOD deal has been written on the subject of fever, especially protracted fever, in tertiary syphilis,¹ but my attention was first directed to the subject by Mr. Campbell Williams and by the patient himself whose case Mr. Williams described at the Clinical Society in 1900 as "A Case of Late Syphilitic Pyrexia (Intermittent Essential Fever of Syphilis)."

The first patient, a married woman, aged 36 years, was under my care at the German Hospital from May 1st to June 17th, 1906, and again from August 27th to Sept. 10th, 1906. She had previously been under my care at the Mount Vernon Hospital. The patient's husband, a fairly healthy-looking man, admitted that in 1893 he had a sore on his penis. He was only three or four weeks under treatment for it and as far as he knows there were no secondary symptoms. (The husband's history was not, however, obtained till the clinical evidence of syphilis in the patient's case was conclusive.) The patient had had no children since 1893, but of the two children born previously one was living and healthy and the other died in infancy. She had had no miscarriages. She had certainly been accustomed to indulge somewhat freely in whisky. Up to 1900 she enjoyed fair health but about that time a good deal of the hair of her head came out and she began to suffer from depression, languor, occasional vomiting, and occasional night-sweats. About 1902 she had "rheumatism," principally in her knees. In December, 1904, she first brought up blood and became subject to nausea, vomiting, and inability to take food. In 1905 she occasionally brought up blood (hæmatemesis or hæmoptysis); usually she first coughed and then vomited, the vomiting being followed by bringing up the blood. There was no history of jaundice. From childhood she had often had sore throats. She dated her present deafness from 1905. In August, 1905, sores formed about her left ear which were preceded by lumps. From Dec. 1st, 1905, to March 7th, 1906, she was in the Mount Vernon Hospital. On admission she was found to have considerable enlargement of the liver and spleen, pains in the lower extremities, and an irregular type of fever, occasionally over 102° F. On two occasions (Dec. 4th and Jan. 8th) she was said to have had coloured expectoration, but no definite signs of any disease in the thoracic organs could be discovered except some dullness at the base of the right lung corresponding to the enlargement of the liver. On one occasion I noted that the liver and spleen were hard, had a

¹ See Sidney Phillips, A Case of Syphilitic Fever resembling Tertian Ague, Brit. Med. Jour., Nov. 30th, 1889, p. 1217; J. H. Mueser, The Diagnostic Importance of Fever in Late Syphilis, University Medical Magazine, Philadelphia, October, 1892, p. 6; E. G. Janeway, Danger of Error in Diagnosis between Chronic Syphilitic Fever and Tuberculosis, American Journal of the Medical Sciences, September, 1893, p. 251; D. W. Prentiss, A Case of Syphilitic Fever, Philadelphia Medical Journal, July 29th, 1899, vol. iv., p. 215; A. C. Morgan, Syphilitic Fever, Philadelphia Medical Journal, Feb. 17th, 1900, vol. v., p. 360; C. Gerhardt, Syphilis einiger innerer Organe, Berliner Klinische Wochenschrift, Nov. 12th, 1900, p. 1046; T. B. Fletcher, Syphilitic Fever with a Report of Three Cases, New York Medical Journal, June 22nd, 1901, p. 1065; F. Klemperer, Ueber Pleber bei Syphilis der Leber, Zeitschrift für Klinische Medizin, Berlin, 1904, vol. iv., p. 178; A. Birt, The Fever of Late (Visceral) Syphilis, Montreal Medical Journal, October, 1905, vol. xxxiv., p. 748; L. D'Amato, Sulla Febbre Sifilitica Terziaria, La Riforma Medica, Naples, March 10th, 1906, No. 10, p. 253. Both Birt and D'Amato refer to many papers on the subject. F. Klemperer also alludes to observations by G. Klemperer, O. A. Ewald, and others. J. S. Bristowe (Clinical Society's Transactions, London, 1886, vol. xix., p. 249) and T. D. Savill (Clinical Journal, London, Dec. 1st, 1897, p. 57) have both drawn attention to the occurrence of chronic hectic fever connected with gummatous disease in congenital syphilis. One of the earliest authors to draw attention to the possible occurrence of a hectic type of fever in tertiary as well as in early syphilis was C. Bäumler, who whilst still in London wrote a paper, Ueber das Verhalten der Körperwärme als Hilfsmittel zur Diagnose einiger Formen Syphilitischer Erkrankung, Deutsches Archiv für Klinische Medizin, Leipzig, 1872, vol. ix., pp. 397-432. Fever up to about 102° F. is mentioned in 1872 vol. ix., pp. 397-432. Fever up to about 102° F. is mentioned in H. Weber's account (Transactions of the Pathological Society of London, 1896, vol. xlv., p. 152) of a case of very extensive tertiary syphilis, little disease in the liver, lungs, bronchial glands, dura mater, cranium, and sternum. J. E. Gunz, a pupil of Wunderlich, was the first to make accurate thermometric observations on the fever of the early stages of syphilis, the occurrence of which was already known to John Hunter.

² Transactions of the Clinical Soc.

fairly even surface, and were not painful or tender. They gave me the impression of being more or less adherent to the abdominal wall and I had little doubt of the existence of perihepatitic adhesion. On Jan. 9th, 1906, treatment by mercurial inunction and the internal use of potassium iodide was commenced, with the result that on the 12th she had no fever and the fever remained absent from that date till the treatment was discontinued on the 29th. On Feb. 3rd the fever recommenced and antisyphilitic treatment was not then regularly carried out as the patient appeared to be suffering from follicular tonsillitis with glandular enlargement on the left side of the neck. The fever, however, which was of a hectic type, persisted, and early in March typical gummatous disease with perforation of the soft palate having developed renewed antisyphilitic treatment was started on March 4th. On March 6th she remained free from fever but unfortunately left the hospital on the following day.

On May 1st, 1906, the patient, looking very cachectic, was admitted under my care at the German Hospital and treatment by intramuscular injections of salicylate of mercury, together with the internal use of potassium iodide and Zittmann's weak decoction, was at once commenced. On May 1st and 2nd the evening temperature reached 100° and 102° F. respectively, but after that there was no more fever till she left the hospital on June 17th. She quite lost the cachectic appearance and gained considerably in weight. The ulcerated perforation of the soft palate soon began to have healthy edges and had certainly contracted by the time she left the hospital, but the liver still remained enlarged, the edge being felt three fingers' breadth below the costal margin in the right nippleline.

On August 27th she was readmitted to the German Hospital under my care suffering from tertiary syphilitic peritonitis over both tibiae and about the left elbow-joint, &c. Ophthalmoscopic examination showed a few foci of chorioretinitis in both eyes (Dr. C. Markus). The evening temperature was 102°. Potassium iodide and Zittmann's decoction were given and on August 28th (the day after admission) treatment by intramuscular injections of salicylate of mercury was again adopted. Rapid improvement in the periosteal affection followed the commencement of the treatment and there was practically no fever from August 30th till the patient left the hospital on Sept. 10th. Perchloride of iron was likewise administered. I saw her again on Jan. 27th, 1907, when she told me that on Jan. 20th at about 3 p.m. she had vomited about one and a half pints of dark blood. In spite of this attack of hæmatemesis she looked fairly well, and she had apparently enjoyed fair health since she left the hospital.

This case on four different occasions illustrates remarkably rapid disappearance of the fever on the commencement (within two days or so) of antisyphilitic treatment. The fever in February, 1906, was of a hectic type and one can easily understand that tertiary syphilitic pyrexia may be mistaken for septic fever, or may be supposed to be due to pulmonary tuberculosis, especially when, as in the present case, a history of blood-spitting and night-sweats can be obtained. Chronic hectic fever accompanied by occasional night-sweats and blood-spitting has sometimes doubtless led to a suspicion of pulmonary tuberculosis, even in the absence of any physical signs pointing to local disease in the lungs. Moreover, slight differences in resonance between the two sides, such as are often found on examining the chests of quite healthy individuals, have probably sometimes been interpreted as confirming a suspicion of consumption. It is easy to find (or to imagine) slight physical signs to support a diagnosis of lung disease suggested by hectic fever, emaciation, progressive weakness, &c.

E. G. Janeway² wrote in 1898 a well-known paper on the Danger of Error in Diagnosis between Chronic Syphilitic Fever and Tuberculosis. O. Gerhardt³ alluded to three cases of hepatic syphilis in which the presence of hectic fever led to a diagnosis of pulmonary tuberculosis. The three patients were sent to sanatoriums for consumption, but were afterwards cured by antisyphilitic (mercurial) treatment. A. Birt⁴ says that the fever of late syphilis may be occasionally associated with chills, night-sweats, and emaciation, so as to simulate tuberculosis, sepsis, or malaria, but especially tuberculosis. In his case it was only when a tender node on one rib was detected that the patient admitted having contracted syphilis 11 years previously. In regard to the employment of the tuberculin test Birt

concludes that it is of little value for distinguishing the syphilitic from the tuberculous cases and may be faulty. Indeed, the repeated sharp rises of temperature and occasional rigors in many cases of syphilitic fever make tuberculin altogether unreliable for diagnostic purposes and, as a matter of fact, owing to the presence of fever, its employment is, in my own opinion, absolutely contra-indicated.

F. Klemperer⁵ mentions having seen a young man with a remittent type of fever who had been treated by tuberculin, &c., for pulmonary tuberculosis seven years after primary syphilis, and in whom mercurial treatment removed the fever. He likewise quotes Veress⁶ as describing the case of a woman with pulmonary syphilis and recurrent ague-like attacks of shivering and fever. She was first supposed to have malaria and then pulmonary tuberculosis, but the appearance of a gumma on the leg led to the recognition of the syphilitic origin of her illness and to its speedy cure by antisyphilitic treatment.⁷ Fever is, however, no more a necessary accompaniment of pulmonary syphilis than it is of hepatic syphilis.

Sidney Phillips⁸ in 1889 pointed out that syphilitic fever might easily be mistaken for malaria. His case had definite ague-like chills and resembled tertian fever. There were, apart from what seemed to be erythema nodosum, no definite local lesions, but the symptoms yielded promptly to antisyphilitic treatment. One of Fletcher's three cases⁹ of syphilitic fever was characterised by intermittent chills with fever and was treated first as a case of malaria, but afterwards yielded readily to antisyphilitic treatment. Veress¹¹ quotes a case of Eckert, of Tientsin, in which tertiary syphilitic fever was accompanied by shivering attacks and enlargement of the spleen so as to simulate a form of malaria. Confusion with malaria is, of course, most likely to occur in malarious countries and when the spleen is enlarged and when there are definite attacks of shivering.

Needless to say, typhoid fever, malignant endocarditis, and febrile cholelithiasis may all be thought of in cases of tertiary syphilitic fever. One of the cases recorded by Fletcher¹² was for weeks suspected of being a case of typhoid fever and was treated as such, but the correct diagnosis was established by the discovery of periosteal thickening over the clavicles and by the cessation of the fever after the beginning of treatment with potassium iodide. The presence of "tertiary syphilitic diarrhoea"¹³ in such cases would still further increase the clinical resemblance to typhoid fever. Definite clinical signs of valvular disease may, as is well known, be absent for a long time in cases of malignant endocarditis, and syphilitic fever of intermittent or remittent type might be mistaken for early malignant endocarditis before the development of a definite murmur; such a mistake would be more likely to occur if there happened to be an old valvular lesion present, of rheumatic origin or from any other cause, or if a so-called "anæmic" or other murmur not due to organic valvular disease were to be heard.¹⁴

The occurrence in tertiary syphilis of enlargement of the liver, with local tenderness due to perihepatitis, and accompanied by pyrexia, shivering attacks, and a certain degree of jaundice, might make one think of cholelithiasis and its complications. In one of G. Klemperer's¹⁵ cases of tertiary syphilitic fever accompanied by enlargement and tenderness of the liver with some jaundice an operation to search for a hepatic abscess was to have been undertaken, but antisyphilitic (mercurial) treatment was tried and led to rapid and complete cure. J. S. Bristowe,¹⁶ in the case of a boy, aged 15 years, with hectic fever and hepatic enlargement, twice explored the liver with trocar and cannula (hoping to find an abscess) before evidence of congenital syphilis was obtained; antisyphilitic treatment led within four days to the cessation of the fever, which had lasted

¹ Pester Medizinisch-Chirurgische Presse, 1904, Nos. 22 and 23.

² On Fever in Cases of Pulmonary Syphilis see also A. Stengel, Syphilis of the Lungs simulating Pulmonary Tuberculosis, University of Pennsylvania Medical Bulletin, May, 1903, p. 89.

³ Loc. cit.

⁴ T. B. Fletcher, loc. cit.

⁵ Loc. cit.

⁶ Loc. cit.

⁷ See later references to the rare cases in which tertiary syphilis is accompanied by obstinate diarrhoea.

⁸ Cf. Paul Krause: Ueber langdauernde Fieberzustände unklaren Ursprungs. Deutsche Archiv für Klinische Medizin, Leipzig, 1903, vol. lxxviii, p. 123. Krause speaks of cases of protracted fever due to malignant endocarditis and mentions that chronic fever of obscure origin may be due to tertiary syphilis.

⁹ Therapie der Gegenwart, January, 1903, p. 41.

¹⁰ Loc. cit.

¹¹ Loc. cit.

¹² Loc. cit.

¹³ Loc. cit.

two months and had been accompanied by occasional rigors and night-sweats.

In my patient the enlargement of the liver and binding down (perihepatitis) of the organ were doubtless partly the result of local tertiary syphilitic processes, though alcohol may likewise have had a share in the causation. It is noteworthy in what a large proportion of cases of tertiary syphilitic fever there have been signs of liver disease. In each of L. D'Amato's¹⁷ three cases of fever (eight to 16 years after the primary infection) there was evidence of hepatic complication; in his first case there was perihepatitis, in the second there was probably a gummatous change, and in the third there was jaundice. A. Birt¹⁸ thinks that it is chiefly in cases in which the syphilitic process affects the liver that late syphilitic fever occurs. F. Klemperer¹⁹ describes two cases of chronic fever of an intermittent type accompanied by shivering attacks in which no organic changes could be detected, except in the liver (enlargement, tenderness, and slight jaundice). The diagnosis seemed to lie between obscure suppuration (septic fever), tuberculosis, and malaria, until the possibility of a syphilitic origin was thought of; antisyphilitic treatment led to a rapid cure in both cases. He points out that the intermittent type of fever with enlargement of the liver and occasional shivering attacks was likewise present in cases described earlier by G. Klemperer,²⁰ O. A. Ewald,²¹ and others. C. Gerhardt, who was well acquainted with febrile cases of syphilis of the liver, writing in a paper on the subject in 1900,²² said that though most patients with hepatic syphilis were free from fever, in some cases the hepatic affection was accompanied by fever which simulated other diseases, though the satisfactory results of antisyphilitic treatment proved it to be due to the syphilis. Even the recent hæmatemesis in my case may possibly be due, not to ordinary gastric ulcer or hepatic cirrhosis (dilated veins in the stomach or œsophagus), but to syphilitic disease of the stomach. A. Casaris-Demel²³ has narrated the case of a man who died suddenly from intra-peritoneal hæmorrhage which the necropsy showed to proceed from a perforating syphilitic ulcer of the stomach. Though it must be acknowledged that undoubted syphilitic gummatous disease of the stomach and intestines is rare a good many cases have been verified by post-mortem examination or by the results of treatment.²⁴

In tertiary syphilitic "dyspepsia" and tertiary syphilitic diarrhoea the result of antisyphilitic treatment may be very striking. In the out-patient department of the Mount Vernon Hospital I saw on Jan. 18th, 1902, an extremely cachectic-looking young woman, aged 26 years, with gastrointestinal symptoms. Some time before coming to the hospital she commenced to suffer from anorexia and vomiting after meals and she had lost flesh and strength. She had had diarrhoea for about a month and on drinking a little milk she would vomit or have a diarrhoeal motion. I gave bismuth at first without any great benefit, but on Feb. 1st the presence of periosteal nodes on the tibia, which were tender to the touch, made it clear that she was

suffering from active tertiary syphilis; moreover, the was a history of previous pains in the head, back of the neck and extremities worse during the night. 30 grains potassium iodide and some quinine were given three times daily. A good effect was felt in regard to pains after about three doses, and she rapidly recovered her appetite and cheerfulness; she could sleep well and walk well, and began to look in blooming health. Unfortunately in this case, the woman was an out-patient, there is no record of the temperature.

A man, aged 37 years, a German sailor, was admitted under my care at the German Hospital on Jan. 17th, 1900. He was cachectic-looking and suffered from fever, chronic swelling and stiffness of the right elbow-joint, and tenderness on various bones. The history was that as a soldier in 1890 he contracted a hard chancre on the penis, for which he seems to have been treated with mercury. He does not recollect the appearance of any secondary eruption. In 1891 he was under my care at the German Hospital with fever and a polyarticular joint affection which I then regarded as acute rheumatism. The patient had, however, likewise inflammation of the left epididymis and testicle; on one occasion I noted some tenderness at the junction of the sixth left costal cartilage with the sternum, and there was a tender swelling between the tibia and fibula of the right leg. I thought also of the possibility of there being a syphilitic element in the case, although apparently at that time I was not aware of the patient having had a chancre. It may be specially noted that the treatment included the use of iodide of potassium besides sodium salicylate and quinine. About two and a half years (1904) ago he suffered from ulceration of the palate (which led to perforation), and also from headache and fever, for which he was treated with benefit by potassium iodide in a hospital at Rotterdam. A little while afterwards the present affection of the right elbow-joint commenced with pain and swelling. About one year ago he had an abscess to the outer side of the right eye, which left a depressed scar. On admission to the German Hospital in January, 1907, the patient presented undoubted evidence of recent and past tertiary syphilitic trouble. There were an old perforation of the hard palate, old soarring of the soft palate, and the depressed cicatrix (already mentioned) close to the right eye. The original cause of the chronic swelling, stiffness, and tenderness of the right elbow-joint would not by itself, have been obvious, but there were tender swellings on the eighth right rib, on the right clavicle, and on the manubrium sterni, all of which suggested active tertiary syphilis; moreover, the patient said that on several previous occasions he had suffered from swellings on the ribs which disappeared again. A chain of enlarged lymph glands from the right elbow upwards along the brachial artery could be felt and did not seem to be tender. There was no evidence of disease in the thoracic and abdominal viscera, excepting slight impairment of resonance over the upper right part of the thorax (this was possibly, however, connected with the disease of the right clavicle) and slight enlargement and tenderness of the liver. The urine was free from albumin and sugar. Examination of the blood (not till Jan. 29th) gave: hæmoglobin (by Haldane's method), 58 per cent. of the normal; red cells, 3,575,000 per cubic millimetre; white cells, 6440. There were no retinal or choroidal changes. The patient was treated by mercurial inunction (five grammes of the mercurial ointment of the German Pharmacopœia daily) and was given an iron medicine internally. Some of the tenderness, at least that of the rib, sternum, and liver, disappeared, but the swelling of the right elbow and the tenderness of the right clavicle persisted. The anaemia diminished, so that on Feb. 10th the red cells numbered 4,200,000 per cubic millimetre, white cells 10,250, and hæmoglobin (by Haldane's method) about 73 per cent. of the normal. The temperature, which had been 100°-101° F. on the first three evenings, remained after that mostly below 100°, but the fever did not quite disappear. The mercurial inunction was discontinued on Feb. 11th and from the 21st the evening temperature was never below 100° until 15 grains of potassium iodide were given three times daily. The iodide was prescribed on the 26th; on the evenings of the two following days the temperature was 101°, but on the next three evenings it was only 99°-4°, 98°-2°, and 97°-8° respectively. From March 1st small doses of arsenic and iodide of iron were given as well as the iodide of potassium. It is not surprising that the fever was somewhat resistant to the inunction in this case, since Roentgen photographs

¹⁷ L. D'Amato (of Naples), loc. cit.

¹⁸ Loc. cit.

¹⁹ Loc. cit.

²⁰ Therapie der Gegenwart, January, 1903, p. 41.

²¹ Ibid., February, 1903, p. 92.

²² Loc. cit.

²³ A. Casaris-Demel, Sulla Sifilide Gastrica a Tipo Ulcerativo, Archivio per le Scienze Mediche, Turin, 1899, vol. xxiii., p. 269.

²⁴ In regard to tertiary syphilitic affections of the stomach and intestines see R. Fraenkel, Zur Lehre von der erworbenen Magen-Darm-Syphilis, Virchow's Archiv, 1899, vol. clv., p. 507; L. Galliard, Hétéropathies Syphilitiques, Presse Médicale, Paris, January, 1897, p. 37; A. Casaris-Demel, loc. cit. (this author refers to a good deal of previous literature on the subject); H. Chiari, Ueber Magensyphilis, Festschrift Rudolf Virchow, Berlin, 1891, vol. ii., pp. 297-321 (Chiari refers to much previous literature); A. Fournier and L. Lereboullet, Diarrhées Syphilitiques Tertiaires, Gazette Hebdomadaire, Paris, July 8th, 1900, p. 657; G. Hayem, Syphilis Stomacale, Presse Médicale, Paris, Feb. 18th, 1905, p. 105, and May 2nd, 1906, p. 277; A. Weiss, Die syphilitischen Erkrankungen des Darmes, Centralblatt für die Grenzgebiete der Medizin und Chirurgie, August, 1902, p. 577; Max Einhorn (New York), Bericht über einen neuen Fall von Syphilitischer Magengeschwulst, Münchener Medizinische Wochenschrift, Dec. 2nd, 1902, p. 2005; Hueter, Ueber Darmulcer, a paper read at a meeting of the Altoaner Aerztlicher Verein on Oct. 18th, 1905, reported in the Münchener Medizinische Wochenschrift, 1906, No. 6, p. 284; J. M. Elder, Acute Intestinal Obstruction caused by Syphilitic Ulceration in the Ileum, Brit. Med. Jour., May 7th, 1904, p. 1068; W. Soltau, Fenwick, Syphilitic Affections of the Stomach, THE LANCET, Sept. 23rd, 1901, p. 835; Suarez de Mendoza, on Syphilis of the Intestine, at the International Medical Congress, Lisbon, April, 1906, THE LANCET, May 5th, 1906, p. 1270.

(March, 1907) of the right elbow and of part of the chest point to there being extensive gummatous disease of the right clavicle and lower end of the right humerus.²¹

Gummatous disease of periosteum and bone is certainly at times associated with fever. T. D. Savill²² has recorded a fatal case of congenital syphilis in a boy, aged 16 years, with extreme cachexia simulating pernicious anaemia, the necropsy showing gummatous masses over the frontal portions of the brain and gummatous disease of the petrous bone, ribs, and clavicle. In Savill's case the pyrexia was of an intermittent type, rising to 100°-102° in the evenings. Although my cases showed obvious changes in the abdominal viscera or bones, there may doubtless be cases of long-continued, apparently "idiopathic," pyrexia, in which on examination no signs of organic disease can be found to account for the fever, but which may really be connected with tertiary syphilitic changes in the viscera in situations where such changes would escape detection by the ordinary methods of physical examination. In January, 1906, I saw a man, 45 years of age, who had suffered from primary and secondary syphilis in 1889. He had been treated at Aix-la-Chapelle in 1893 and about 1902. He had suffered from evening fever (100°-101°) for about five months from July, 1905, but this fever had just disappeared on his voyage home from India. He complained of a little discomfort in the hepatic region, but I could find no physical signs of any disease, except slight wheezing over the lungs, and there was a history of asthmatic symptoms. I regarded the chronic pyrexia as being very likely connected with his syphilis and the medical man at Aix-la-Chapelle, to whom at my advice he went for another course of antisyphilitic treatment, thought that it was connected with perihepatitis. It is very probable that in some cases of tertiary syphilitic fever the fever may cease without antisyphilitic treatment, just as gummatous disease may in some cases heal up without any specific measures being adopted. L. D'Amato²³ writes amongst his conclusions that syphilitic fever may cease spontaneously without specific treatment, but then, just like the other syphilitic manifestations, it is more likely to recur. I have lately been looking over some notes of a case of a long-lasting pyrexia of unknown origin in which recovery ultimately took place but in which I regret that antisyphilitic methods were not given a fair trial. The patient, a man then aged 54 years, was admitted under my care on Nov. 15th, 1898, with a history of four weeks' illness and the fever, which was of intermittent or remittent type and associated with rigors, lasted till Dec. 21st. Malarial parasites were not found in the blood and he did not react to quinine and no satisfactory explanation of the fever was forthcoming. He had some oedema of the lower extremities, crepitations at the bases of the lungs, temporary slight enlargement of the liver, and superficial glossitis; there was a history of a chancre ten years previously. This man was again temporarily under treatment in March and April, 1899. He then had slight jaundice, with crepitations at the base of both lungs and decided dulness at the base of the right lung. But on that occasion there was scarcely any fever (the temperature never reached 100° except on the first evening) and the jaundice and the pulmonary signs readily cleared up. At present (1907) I hear that he is in fairly good health.

Harley-street, W.

A RADIOGRAPHIC SURVEY OF 170 CASES CLINICALLY DIAGNOSED AS "COLLES'S FRACTURE."

BY REGINALD MORTON, M.D., O.M. TRIN. TOR.,
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STATISTICS regarding any disease or injury are always of interest and value to medical men, especially when the figures are based on the careful observation of a relatively large number of cases; and among fractures probably no single one possesses such a widespread interest among the profession as that of the lower end of the radius close to its articulation with the carpus, which is generally known, after

the surgeon who first described it, as "Colles's fracture." Until the advent of the x rays it will be remembered that many points regarding it were the subjects of considerable controversy, such as the distance of the line of fracture from the carpal border or the character of the displacement. Before 1895 we were never taught that damage to the styloid process of the ulna was a common accompaniment of this injury; in the several books published in the pre-Roentgen ray days which I have consulted it is not even mentioned. This is not surprising when we consider the necessary imperfections of clinical examination and also the fact that the opportunity for making a dissection seldom arose. Roentgen's discovery has changed all this, and thanks to the work of Lynn Thomas and others new and valuable evidence has been forthcoming.

Considering the large amount of material available at the hospital with which I have the honour to be connected, it seemed advisable to make an attempt to obtain some more or less reliable data, and accordingly instructions were given to the receiving room officers to send all cases diagnosed as Colles's fracture to be radiographed—preferably before being put up. This was carried out as systematically as possible for about 12 months, and it was in only a comparatively few cases—those arriving between Saturday evening and Monday morning, when the radiographic department was closed—that the radiograph was taken while the dressing was in place. Owing to the large amount of practice obtained by the receiving room officers before and during their term of office, their skill in diagnosis may be taken as at least equal to that of the profession generally, and it may also be taken that in every case the history, signs, and symptoms, so far as could be elicited, pointed to the presence of this form of fracture. The radiographic procedure presented no special features. By screening one-half of the plate with a piece of sheet lead it was easy to get an anterior and an ulnar view side by side on a 8½ by 6½ inches plate. Considerations of economy in both time and plates prevented other views being taken, and for the reason that in an ulnar view it is difficult, and in many cases impossible, to get a side view of the line of fracture of the radius the amount of accurate information available from the present series is not complete. A side view of the wrist with the radius next the plate, under ordinary arrangement of apparatus, involves a more or less constrained position to a person suffering from this fracture, and it is thus very difficult to avoid some movement during the period of exposure. To overcome this difficulty I have devised a support for the wrist, plate, and tube with which it is not necessary to move the forearm while the two exposures are being made. For the radial side view the plate is placed vertically and the tube is lowered to the same level as the wrist which lies comfortably upon its support.

The preparation of a second series of cases in this way is now in progress, the results of which I propose to publish as soon as complete, and it is hoped that 200 cases may be collected within a reasonable time.

In making up Table I. it should be mentioned that a

TABLE I.

PART I.

Total number of cases examined, 170.

The radius only fractured	155 cases.
The ulna only fractured	2 "
Both bones fractured	7 "
Fracture of the trapezium	1 case.
No fracture detected	5 cases.
Dislocation of the wrist-joint complicating fracture	3 "
Fracture of the styloid process of the radius	20 "
Fracture communicating with the wrist-joint	25 "
Fracture of the styloid process of the ulna	18 "
Separation of one or both epiphyses	11 "

PART 2.

The line of fracture of the radius—	
Transverse	120 cases.
Oblique	13 "
Irregular	4 "
Obliquely transverse	3 "
Transverse, but line irregular	22 "
The average distance of the line of fracture from the carpal border—	
1 inch	2 cases.
2 "	16 "
3 "	31 "
4 "	62 "
5 "	17 "
2 inch	11 cases.
1 "	2 "
1½ inches	1 case.
1½ "	1 "

²¹ The red corpuscles have now (March 12th) increased to 5,000,000 in the cubic millimetre and the patient has quite lost his former appearance of cachexia. There has been no fever since March 1st.

²² Loc. cit.

from the lymphatics of the legs escaped into the bladder. There was no inflammation in the urinary tract and the kidneys were normal. Purulent pericarditis, hypostatic pneumonia, and acute bronchitis were present. This was the fourth published case of a necropsy on a patient with non-tropical chyluria. There were strong reasons for believing that all cases of chyluria, whether due to filaria or not, were caused by the same anatomical abnormality—viz., obstruction to the thoracic duct or large abdominal lymphatics, with consequent dilatation of abdominal and pelvic lymphatics and rupture of a dilated lymphatic into the urinary tract. The obstruction in filarial chyluria appeared to be due to a fibrous stenosis of the thoracic duct, secondary to inflammation brought about by the presence of filaria at some earlier period. The parasites themselves had never been found blocking the thoracic duct. As the obstruction, when once produced, would be permanent it would remain after the filaria had all died out. Hence cases, such as the present one, in which the patient had been abroad 20 years before the onset of the chyluria, might quite well have been due to an old infection with filaria which had completely died out, leaving the obstruction in the thoracic duct. Presumably the rupture of a dilated lymphatic into the bladder occurred only in March, 1906. In non-filarial cases the obstruction was probably due to some other parasite, or more frequently to caseous glands or other tumour pressing on the duct from without. Hence the distinction between tropical and non-tropical chyluria was artificial and not warranted by the pathogenesis of the two conditions.

Mr. T. M. HAMELL said that he had made observations on a subject in which chyle came from a chylous fistula. The rate of appearance of fat in the chyle was dependent on the condition of the fat and whether it had a high or low melting point. The fats with a low melting point appeared more rapidly than those with a high melting point. He had never been able to detect dextrose in the chyle. He asked whether by any operation it was possible to connect the part of the thoracic duct below the lesion with that above it.

Dr. HERTZ, in reply, said that he had made no experiments with regard to the rapidity of absorption of the fats with the high or low melting points, but for the ordinary fats of food it took only half an hour before they began to appear in the urine. Exercise increased the lymph flow and the rapidity with which the fat appeared in the urine.

CLINICAL SOCIETY OF LONDON.

The Medical and Surgical Treatment of Congenital Pyloric Stenosis.

A MEETING of this society was held on March 8th, Mr. H. H. CRUTTON, the President, being in the chair.

Dr. G. A. SUTHERLAND read a paper on the Medical Treatment of Congenital Pyloric Stenosis, which will be found at p. 725 in the present issue of THE LANCET.

Dr. A. F. VOELCKER read short abstracts of seven cases of Hypertrophic Pyloric Stenosis in infants who had been under his care at the Hospital for Sick Children, Great Ormond-street, and gave an analysis of the 39 cases which had been observed at that hospital since 1897, 35 of which had been males. The age at which vomiting had commenced varied; out of 37 cases noted four had commenced at birth, three at one week, nine at two weeks, 11 at three weeks, five at four weeks, two at five weeks, two at six weeks, and one at eight weeks of age. These and other facts threw doubt upon the condition being a congenital defect. Other congenital malformations were notably absent, and the condition did not recur in other members of the same family. Hypertrophy of the pylorus and gastric peristalsis had been detected in all Dr. Voelcker's cases. In regard to the pathology it had been suggested that such cases consisted of a pyloric spasm caused by excess of hydrochloric acid, and Dr. Voelcker was of opinion that the pyloric lesion was secondary to some alteration in the gastric secretion. Out of 39 hospital cases 34 had died. Five of Dr. Voelcker's seven cases had been operated upon, all of whom had died. He attributed the recovery of the other two to lavage and diet. He did not think surgical intervention of any form was advisable.

Mr. F. F. BURGHARD read a paper on the Surgical Treatment of Congenital Pyloric Stenosis, based upon 16 cases that had come under his own care. Five years ago operative

treatment was strongly advocated but of late professional opinion had undergone considerable change. His opinion was that only in a small proportion of cases was operation indicated. He pointed out that the chief difficulty at present was to know in what proportion of cases medical treatment alone might be expected to suffice. Whereas in former years most of the cases came under the surgeon's hands at an early date, the tendency at present was to delay operation as long as possible in the hope that medical measures alone would succeed. This hope was justified in a certain number of cases and the debate would probably do much practical good by enabling surgeons to form some idea of results that were likely to follow medical treatment alone, as hitherto no extended experience had been published. Dealing with the question of operative results, 16 cases in all had been operated upon by the same method—namely, dilatation of the pylorus. Of these cases 11 had recovered satisfactorily from the operation, ten remaining well, whilst one case died within three months of the operation from convulsions; the operative mortality was, therefore, 31·25 per cent., whilst the total mortality was 37·5 per cent. The chief danger of the operation was shock, which could be minimised by careful preliminary preparation and operating rapidly in a well-warmed room, never less than 70° F.; 25 minutes should be sufficient, ten being occupied in the dilatation. Two accidents that had happened in the series of cases quoted were rupture of the pylorus (in two cases) and wound of the duodenum (in one case). These accidents could be treated by immediate suture and were not necessarily fatal. Dilatation of the pylorus was preferable to pyloroplasty but this last was preferable to gastro-jejunostomy. The chief danger of dilatation was splitting the pylorus and to obviate this the incision into the stomach should not be made too near to the pyloric orifice. No recurrence of symptoms occurred after any of the cases quoted.

Dr. HENRY ASHBY (Manchester) said that he had made necropsies on about 11 cases. He had been struck by the marked hypertrophy, though it rarely caused complete obstruction, but he could not help thinking that the hypertrophy was not the essential cause. There were always a large quantity of mucus and other evidences of gastric catarrh. This condition was probably antenatal and produced an over-action of the sphincter which led to the hypertrophy. It was difficult to make out a hypertrophied pylorus during life but with a little patience the abdominal walls might relax and the pylorus drop down from beneath the liver. All his cases had improved temporarily under lavage and small quantities of thin food such as whey. Only one of his cases had been operated upon and the patient had died 12 days later.

Mr. CLINTON T. DENT agreed that the results of surgical intervention had not been very favourable. Out of about 120 collected cases, including a number of unpublished ones, that had been operated on the mortality was about 50 per cent. Unfortunately, surgeons rarely saw these cases until an advanced stage had been reached. Pyloroplasty or pylorotomy was preferable to gastro-enterostomy; the former certainly restored the functions of the pylorus. He had in his possession a section from the pylorus showing that the hypertrophic condition was most certainly antenatal. Prolonged medical treatment certainly jeopardised the surgeon's treatment.

Dr. G. F. STILL said that he had observed 27 cases. Out of 23 in which the result was known 14 had recovered completely; eight of these had been operated on, five of them having been mild cases which had been passed on directly to the surgeon; the other six had been treated medically, five by lavage and one by dieting only. Of the nine that died three were untreated, three were operated on, and three were treated medically. Thus the results were practically as good by medical as by surgical treatment, but each case must be judged on its own merits, not by statistics. He took exception to Mr. Dent's statement as to the undue severity of the cases sent to the surgeon as compared with those treated medically, and he raised the question as to the later results of operative measures. On the other hand, three or four months' persistent lavage was a serious undertaking.

Mr. G. H. MAKINS had operated on two cases and the patients had both recovered, though one had died later from enteritis.

Dr. EDMUND CAWLEY thought that these cases could be differentiated into three classes: (1) pure pyloric spasm without evidence of hypertrophy, attended by vomiting of

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Dr. G. A. SUTHERLAND read a paper on the Medical Treatment of Congenital Pyloric Stenosis, which will be found at p. 725 in the present issue of THE LANCET.

Dr. A. F. VOELCKER read short abstracts of seven cases of Hypertrophic Pyloric Stenosis in infants who had been under his care at the Hospital for Sick Children, Great Ormond-street, and gave an analysis of the 39 cases which had been observed at that hospital since 1897, 35 of which had been males. The age at which vomiting had commenced varied; out of 37 cases noted four had commenced at birth, three at one week, nine at two weeks, 11 at three weeks, five at four weeks, two at five weeks, two at six weeks, and one at eight weeks of age. These and other facts threw doubt upon the condition being a congenital defect. Other congenital malformations were notably absent, and the condition did not recur in other members of the same family. Hypertrophy of the pylorus and gastric peristalsis had been detected in all Dr. Voelcker's cases. In regard to the pathology it had been suggested that such cases consisted of a pyloric spasm caused by excess of hydrochloric acid, and Dr. Voelcker was of opinion that the pyloric lesion was secondary to some alteration in the gastric secretion. Out of 39 hospital cases 34 had died. Five of Dr. Voelcker's seven cases had been operated upon, all of whom had died. He attributed the recovery of the other two to lavage and diet. He did not think surgical intervention of any form was advisable.

Mr. F. F. BURGHARD read a paper on the Surgical Treatment of Congenital Pyloric Stenosis, based upon 16 cases that had come under his own care. Five years ago operative

treatment was strongly advocated but of late professional opinion had undergone considerable change. His opinion was that only in a small proportion of cases was operation indicated. He pointed out that the chief difficulty at present was to know in what proportion of cases medical treatment alone might be expected to suffice. Whereas in former years most of the cases came under the surgeon's hands at an early date, the tendency at present was to delay operation as long as possible in the hope that medical measures alone would succeed. This hope was justified in a certain number of cases and the debate would probably do much practical good by enabling surgeons to form some idea of results that were likely to follow medical treatment alone, as hitherto no extended experience had been published. Dealing with the question of operative results, 16 cases in all had been operated upon by the same method—namely, dilatation of the pylorus. Of these cases 11 had recovered satisfactorily from the operation, ten remaining well, whilst one case died within three months of the operation from convulsions; the operative mortality was, therefore, 31.25 per cent., whilst the total mortality was 37.5 per cent. The chief danger of the operation was shock, which could be minimised by careful preliminary preparation and operating rapidly in a well-warmed room, never less than 70° F.; 25 minutes should be sufficient, ten being occupied in the dilatation. Two accidents that had happened in the series of cases quoted were rupture of the pylorus (in two cases) and wound of the duodenum (in one case). These accidents could be treated by immediate suture and were not necessarily fatal. Dilatation of the pylorus was preferable to pyloroplasty but this last was preferable to gastro-jejunostomy. The chief danger of dilatation was splitting the pylorus and to obviate this the incision into the stomach should not be made too near to the pyloric orifice. No recurrence of symptoms occurred after any of the cases quoted.

Dr. HENRY ASHBY (Manchester) said that he had made necropsies on about 11 cases. He had been struck by the marked hypertrophy, though it rarely caused complete obstruction, but he could not help thinking that the hypertrophy was not the essential cause. There were always a large quantity of mucus and other evidences of gastric catarrh. This condition was probably antenatal and produced an over-action of the sphincter which led to the hypertrophy. It was difficult to make out a hypertrophied pylorus during life but with a little patience the abdominal walls might relax and the pylorus drop down from beneath the liver. All his cases had improved temporarily under lavage and small quantities of thin food such as whey. Only one of his cases had been operated upon and the patient had died 12 days later.

Mr. CLINTON T. DENT agreed that the results of surgical intervention had not been very favourable. Out of about 120 collected cases, including a number of unpublished ones, that had been operated on the mortality was about 50 per cent. Unfortunately, surgeons rarely saw these cases until an advanced stage had been reached. Pyloroplasty or pylorotomy was preferable to gastro-enterostomy; the former certainly restored the functions of the pylorus. He had in his possession a section from the pylorus showing that the hypertrophic condition was most certainly antenatal. Prolonged medical treatment certainly jeopardised the surgeon's treatment.

Dr. G. F. STILL said that he had observed 27 cases. Out of 23 in which the result was known 14 had recovered completely; eight of these had been operated on, five of them having been mild cases which had been passed on directly to the surgeon; and the other six had been treated medically, five by lavage and one by dieting only. Of the nine that died three were untreated, three were operated on, and three were treated medically. Thus the results were practically as good by medical as by surgical treatment, but each case must be judged on its own merits, not by statistics. He took exception to Mr. Dent's statement as to the undue severity of the cases sent to the surgeon as compared with those treated medically, and he raised the question as to the later results of operative measures. On the other hand, three or four months' persistent lavage was a serious undertaking.

Mr. G. H. MAKINS had operated on two cases and the patients had both recovered, though one had died later from enteritis.

Dr. EDMUND CAUTLEY thought that these cases could be differentiated into three classes: (1) pure pyloric spasm without evidence of hypertrophy, attended by vomiting of

found to be ill to obtain medical aid and for this purpose when necessary supplying them with hospital and dispensary tickets. Although it was urged that disinfection should be carried out with discretion, the main preventive measure was to train the patient as regards spitting. For this nothing equalled a month's training and treatment in a sanatorium, irrespectively of whether the case was curable or not. The 25 beds for this purpose and for the longer treatment of early and advanced cases which Brighton possessed at its isolation hospital had doubtless greatly helped the success of its system of voluntary notification of pulmonary tuberculosis. Thus comparing the years of most recent records Brighton had about four cases of pulmonary tuberculosis notified to every two deaths from that disease in the town, while New York had five cases notified to two deaths and Sheffield three cases to two deaths (both having compulsory notification); and Manchester and Liverpool with voluntary notification had three cases notified to two deaths. At the present time nearly 50 per cent. of all cases of the disease notified in Brighton had passed through its borough sanatorium. In conclusion, Dr. News-holme laid stress on the importance of the institutional treatment of advanced cases of pulmonary tuberculosis. At the present time from one-third to one-fifth of the deaths from the disease in some of the great towns occurred in their workhouse infirmaries and these patients lived a large part of a year in these institutions before their death. In his opinion, this unexpected and unforeseen operation of workhouse infirmaries had been during the last 30 years a predominant cause of the decline in the national death-rate from pulmonary tuberculosis and it was in the direction of extension of similar measures, and particularly by removal of all Poor-law conditions from the treatment of the disease, that the most hopeful field for even more rapid decline of the death-rate from pulmonary tuberculosis lay.

Professor G. SIMS WOODHEAD said that he was glad to hear that the two previous speakers, who both spoke as interested in the treatment of individual consumptives, had insisted on the necessity of dealing with and isolating tuberculous patients who might be centres of infection. Whilst agreeing that much might be done in the treatment of the early stages of pulmonary tuberculosis by good food, fresh air, and the like, he thought that the public health side was liable to be somewhat neglected. He had always held that in the clouds of dust which had been raised in the controversy that had raged around Koch's great pronouncement at the British Congress on Tuberculosis one of the most important of the issues laid down in that manifesto had been lost sight of, or, at any rate, had not had assigned to it its proper position. It might be that everyone had agreed so fully on this one point that it had been "taken as read" and also "taken as acted upon," when, as a matter of fact, very little had been done to render consumptives in the later and really infective stages less dangerous as centres of infection to their fellows. Patients who were treated in sanatoriums were trained to limit the distribution of their sputa and to insure its disinfection, but the patient in an advanced stage of the disease was often allowed to disseminate, and to disseminate very widely, dangerous infective material in a way that would be deemed absolutely criminal in the case of typhoid fever or diphtheria. Again, the precautions taken against the spread of leprosy, a far less general and fatal though certainly more repulsive disease, were infinitely more stringent than the most stringent ever adopted against the spread of tuberculosis. Speaking from his own special point of view, he was convinced that the voluntary method of notification was not only a rational but a feasible method and one that, if carried out with tact and a reasonable amount of judgment and good sense, should secure most of the advantages of compulsory notification with but few of its drawbacks. Moreover, should it be found later that compulsory notification was desirable, the experience gained under the voluntary system should prove of enormous value to those who would be responsible for the drawing up and putting into force of the compulsory system. He was deeply grateful to the openers of the discussion for the very clear and forcible lead that they had given to the interested in this very important question.

Dr. S. HUMPHRY expressed the opinion that enough attention was not paid to the question of dealing with the advanced cases of consumption. All their efforts were directed to the care of the early cases and large sums of money were expended on the treatment of this stage of

the disease. Although no doubt there was good reason for this course he thought that amongst the poorer classes the number of cases in which the disease was arrested for any great length of time was comparatively small. Such patients were unable to give up the time which it was necessary to spend in a sanatorium during several successive winters and in the intervals their surroundings and necessary occupations often undid much of the good they had obtained and in the end they joined the ranks of the advanced cases. This was, no doubt, partly due to the very great difficulty of getting hold of the disease in its earliest stage. Dr. Humphry thought that every advanced case which was uncared for was a potent source of infection and was in all probability the source of several early cases and yet very little was being done to deal with them effectively; they were usually excluded from hospitals and sanatoriums and were a source of difficulty in workhouses and infirmaries; they lost heart, discarded the list of hygienic directions given them in their previous ill-health, and ended in distributing the infection in their unhealthy alleys and homes. The public were willing to give their money to prevent children being infected by milk and to erect sanatoriums for the early cases, while the most potent source of infection of all was not provided for. Dr. Humphry would be in favour of the voluntary notification of pulmonary tuberculosis if he thought that the advanced cases could thereby be rendered less dangerous to the community.

Professor HOWARD MARSH said that he had been greatly interested by the papers read by Dr. Forbes and Dr. News-holme. The subject was one of the most important in the whole field of sanitary development at the present time. Indeed, the limitation, and ultimately the total abolition, of tuberculosis in man and the lower animals was an enterprise which might well be regarded as of Imperial concern. Moreover, the means of achieving this great victory over disease were well known; they were, in fact, ready to hand, if only, or whenever, they could be efficiently carried out. The voluntary notification of tuberculosis was surrounded by difficulties which at first sight appeared to be insurmountable. But he was much impressed by the attitude which Dr. News-holme had adopted towards it, and which consisted in travelling warily and most skilfully along the lines of least resistance. So proceeding Dr. News-holme had evidently already made very substantial progress and had shown not only on paper but by practical results that those who went the right way to work could by tact and resource, and by winning the confidence of patients and teaching them how much they would gain, secure voluntary notification in a large proportion of cases. This was, so to say, half the battle, for unquestionably voluntary notification was a most potent agent on the side of those who were struggling to eradicate tuberculosis. For his part he should watch the movement with the greatest interest and, remembering what they had just heard, with full confidence not only that voluntary notification was capable of rendering very valuable service but that it could be worked efficiently and on a scale readily admitting of wide extension.

Mr. F. E. ARTHORPE WEBB stated that he thought much good might be done by the notification of pulmonary tuberculosis. A great point was made of the desirability of discovering early cases, but it was just as important to treat advanced cases hygienically in order to prevent infection of others. He moved the following proposition:—

That in the opinion of the Cambridge Medical Society it is eminently desirable that steps be taken by the local health authority to initiate a system of voluntary notification of phthisis.

This was unanimously carried and a vote of thanks to Dr. News-holme for his paper, proposed by Professor G. R. F. NUTTALL, and carried by acclamation, terminated the proceedings.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY. *Exhibition of Specimens*

A MEETING of this section was held on Feb. 15th, Dr. J. F. O'CARROLL, the President, being in the chair. Dr. L. G. GUNN exhibited a specimen taken from a man, aged about 45 years, who had been admitted to hospital with the usual symptoms of Tuberculosis of the Urinary Tract.

from the lymphatics of the legs escaped into the bladder. There was no inflammation in the urinary tract and the kidneys were normal. Purulent pericarditis, hypostatic pneumonia, and acute bronchitis were present. This was the fourth published case of a necropsy on a patient with non-tropical chyluria. There were strong reasons for believing that all cases of chyluria, whether due to filariæ or not, were caused by the same anatomical abnormality—viz., obstruction to the thoracic duct or large abdominal lymphatics, with consequent dilatation of abdominal and pelvic lymphatics and rupture of a dilated lymphatic into the urinary tract. The obstruction in filarial chyluria appeared to be due to a fibrous stenosis of the thoracic duct, secondary to inflammation brought about by the presence of filariæ at some earlier period. The parasites themselves had never been found blocking the thoracic duct. As the obstruction, when once produced, would be permanent it would remain after the filariæ had all died out. Hence cases, such as the present one, in which the patient had been abroad 20 years before the onset of the chyluria, might quite well have been due to an old infection with filariæ which had completely died out, leaving the obstruction in the thoracic duct. Presumably the rupture of a dilated lymphatic into the bladder occurred only in March, 1906. In non-filarial cases the obstruction was probably due to some other parasite, or more frequently to caseous glands or other tumour pressing on the duct from without. Hence the distinction between tropical and non-tropical chyluria was artificial and not warranted by the pathogenesis of the two conditions.

Mr. T. M. HAMELL said that he had made observations on a subject in which chyle came from a chylous fistula. The rate of appearance of fat in the chyle was dependent on the condition of the fat and whether it had a high or low melting point. The fats with a low melting point appeared more rapidly than those with a high melting point. He had never been able to detect dextrose in the chyle. He asked whether by any operation it was possible to connect the part of the thoracic duct below the lesion with that above it.

Dr. HERTZ, in reply, said that he had made no experiments with regard to the rapidity of absorption of the fats with the high or low melting points, but for the ordinary fats of food it took only half an hour before they began to appear in the urine. Exercise increased the lymph flow and the rapidity with which the fat appeared in the urine.

CLINICAL SOCIETY OF LONDON.

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Mr. CLINTON T. DENT agreed that the results of surgical intervention had not been very favourable. Out of about 120 collected cases, including a number of unpublished ones, that had been operated on the mortality was about 50 per cent. Unfortunately, surgeons rarely saw these cases until an advanced stage had been reached. Pyloroplasty or pylorotomy was preferable to gastro-enterostomy; the former certainly restored the functions of the pylorus. He had in his possession a section from the pylorus showing that the hypertrophic condition was most certainly antenatal. Prolonged medical treatment certainly jeopardised the surgeon's treatment.

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As far as could be diagnosed he had a large right kidney, from which it was thought that the pus in the urine was proceeding. The bladder was small, contracted, and tuberculous. A cryoscopic examination led to the conclusion that the patient was on the borderland of insufficiency and the right kidney was thought to be a bag of tuberculous pus. On operating a large kidney was found having a great deal of apparently healthy tissue in it. On exploring the pelvis of the kidney tuberculosis was found to be present. Dr. Gunn presumed that he had been wrong in thinking the other kidney healthy; he therefore did not take the right kidney out. The patient died two days afterwards, and the necropsy showed that the cause of death was extensive miliary tuberculosis affecting the liver, the lung, and the spleen. The left kidney was a tiny structure but perfectly healthy. On account of its smallness, which was apparently congenital, it would by itself alone be functionally inadequate for the maintenance of life. The primary tuberculous focus was a small chronic abscess in the prostate.—Professor E. J. McWEENEY said that the large kidney was a beautiful specimen of compensatory hypertrophy; the other was the smallest he had ever seen which bore no evidence of organic disease.

Dr. A. R. PARSONS showed a Liver affected with Cirrhosis and Carcinoma obtained from a woman, 42 years of age, who had been admitted to hospital in November, 1906, complaining of considerable swelling of the abdomen and also of the legs. The swelling of the abdomen, which had commenced three months previously, had not interfered with her until some six weeks before admission. She gave an ill-defined history of alcoholism; the liver was uniformly enlarged; the spleen was considerably enlarged; there was a history of hæmorrhoids; and the fluid obtained on tapping was clear and non-sanguineous. These symptoms indicated cirrhosis but, on the other hand, the rapid emaciation and short history of the case were supposed to suggest malignant disease. No primary focus could be palpated in any part of the abdomen. On opening the abdomen after death the liver was found to be enlarged considerably and affected with malignant disease. Advanced cirrhosis of the liver, usually attributed to alcoholism, was also present. There was no evidence whatever of primary malignant growth in the stomach, pancreas, intestines, uterus, and ovaries, and the naked-eye appearance of the liver and the microscopic sections showed that the growth was primary in the liver. There were secondary nodules in the lung. The case represented an unusual combination of primary malignant disease and advanced cirrhosis of the liver.

Dr. PARSONS also showed specimens obtained from a case of Lymphatism. The patient was a boy, aged seven months; he was perfectly well until the day before his admission to hospital and he died about one and a half hours after admission. The thymus gland was enormously enlarged and covered quite a large portion of the heart. In reference to this Dr. Parsons said that in 1892 he had met with several cases of sudden death in children from one to five years of age, in which the only abnormal post-mortem appearance was great enlargement of the adenoid tissue of the intestines. Dr. George Peacocke had described two or three cases which were identical with his own cases and referred to a paper by Dr. Ewing of New York who, following Paltauf, called the condition lymphatism. The cases were characterised by sudden death, frequently, but not always, preceded by convulsions; and the necropsy revealed nothing sufficient to account for death. Dr. Peacocke observed in his cases extreme enlargement of the thymus gland.—Dr. PEACOCKE said that he had never found any enlargement of the external lymphatic glands. He was sure that a great many cases occurred which were ascribed to convulsions.

Professor ARTHUR H. WHITE exhibited organisms obtained from cases of cerebro-spinal meningitis. From the first case reported he had made direct cultivations from spinal fluid obtained aseptically by lumbar puncture in broth, human blood serum, glycerine agar, and litmus milk. The broth next day was barely clouded; tiny discrete grey colonies developed on the serum; the glycerine agar remained sterile. Subsequent examination showed these growths to be pure cultures of a diplococcus, sometimes seen in tetrad form, staining irregularly with simple stains like Löffler's blue and negative to Gram's stain. Microscopic examination of the cerebro-spinal fluid showed very many pus corpuscles and numerous organisms seen mainly as diplococci but there

were many tetrads and a few short chains. A considerable number of these organisms were inside the pus cells. Some of them appeared to have capsules and, like those in the cultures, all were decolourised by Gram's method. He continued the inoculation of further cultures to the fifth generation, which was still alive. The fourth and fifth generations had grown very well on ordinary agar, although the original inoculation on the glycerine agar was without result. He had inoculated animals with negative results. The same organism in pure culture was obtained from later cases of the disease, but a smaller number of pus cells and fewer organisms were present, although the cases were more severe clinically. The diplococcus now exhibited had many of the characters of the organism described by Weichselbaum under the name of diplococcus intracellularis meningitidis, but apparently differed from it in having a capsule and in forming short chains. He was not quite satisfied that the organism was a distinct entity, but inclined rather to the opinion that it was a modified pneumococcus.—Professor McWEENEY said that he had observed two cases of Meningitis within the last few days in the Children's Hospital, Temple-street, Dublin. A necropsy was obtained in one of them and revealed the tuberculous form, limited to the cerebral pia-arachnoid. From this numerous tubercle bacilli were obtained in smear preparations. In the other case, which was regarded by Dr. D. J. Farnan as typical cerebro-spinal meningitis, there was no necropsy, but he had examined about five cubic centimetres of fluid obtained from the child (aged three years) by lumbar puncture. The microscopic result was negative, but he had succeeded in growing from it, as the only organism present, a Gram-staining diplococcus tending to form tetrads and growing well in the form of small whitish colonies on ordinary agar, serum agar, and blood agar. He felt sure that this could not be the organism described by Weichselbaum and found by Professor White.

SECTION OF SURGERY.

Frontal Sinusitis.

A meeting of this section was held on Feb. 22nd, Mr. H. R. SWANZY, the President, being in the chair.

Mr. ROBERT H. WOODS exhibited three cases of Frontal Sinusitis subsequently to operation. The operative procedure was as follows. An incision was carried from within outwards along the line of the eyebrow and the frontal sinus was laid open by means of a small trephine, the aperture being subsequently enlarged by means of gouge forceps. The diseased mucous membrane lining the sinus and its recesses was thoroughly removed with a curette. The entire anterior wall of the sinus was not removed, as was generally recommended in the text-books, in order that the scalp might recede and adhere to the posterior sinus wall, because, in his opinion, this step was unnecessary. Obliteration of the cavity could be brought about after removal of the mucous membrane by the growth of granulation tissue from its bony walls.—Mr. P. DEMPSEY alluded to the difficulty in the complete eradication of sinus infection. He said that nothing was easier than to alleviate the discharge and nothing was more difficult than to get it to cease altogether.

The report of the meeting of the Section of State Medicine published in THE LANCET of March 2nd, pp. 591 and 592, contains the full text of a resolution relative to the Poor-law medical service in Ireland adopted by the section. It is now announced that this resolution has been adopted by the General Council of the Royal Academy of Medicine in Ireland.

FORFARSHIRE MEDICAL ASSOCIATION.—A meeting of this society was held on March 7th, Mr. David M. Greig, Vice-President, being in the chair.—Dr. G. A. Pirie exhibited X Ray Photographs of Incipient and Advanced Pulmonary Tuberculosis, Hip-joint Disease, and several Injuries to Joints. He also showed a patient who had recovered from lupus of the face of many years' standing, after repeated application of the x rays.—Mr. Greig exhibited and explained Greville Anderson's Screws and Clamps for the more perfect securing of the ends of ununited fractures in the long bones.—Professor Alexander M. Stalker read a note on Palsus Bistieriens. The case was one of aortic stenosis and a striking clinical feature was the diastolic murmur, which was long, rasping, and squeaking in character, indicating great difficulty in the flow of blood from the ventricle and also in the backward flow of blood

As far as could be diagnosed he had a large right kidney, from which it was thought that the pus in the urine was proceeding. The bladder was small, contracted, and tuberculous. A cryoscopic examination led to the conclusion that the patient was on the borderland of insufficiency and the right kidney was thought to be a bag of tuberculous pus. On operating a large kidney was found having a great deal of apparently healthy tissue in it. On exploring the pelvis of the kidney tuberculosis was found to be present. Dr. Gunn presumed that he had been wrong in thinking the other kidney healthy; he therefore did not take the right kidney out. The patient died two days afterwards, and the necropsy showed that the cause of death was extensive miliary tuberculosis affecting the liver, the lung, and the spleen. The left kidney was a tiny structure but perfectly healthy. On account of its smallness, which was apparently congenital, it would by itself alone be functionally inadequate for the maintenance of life. The primary tuberculous focus was a small chronic abscess in the prostate.—Professor E. J. McWEENEY said that the large kidney was a beautiful specimen of compensatory hypertrophy; the other was the smallest he had ever seen which bore no evidence of organic disease.

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that some authorities had suggested that the condition shown in tracings of pulsus bisferiens was an artificial one due to some instrumental defect, the sharp needle-like apices of the tracing indicating this. The tracing of the pulse in his case showed a split wave, but it was not due to any defect of the instrument, for a double impact could be most distinctly felt by the finger in both radial pulses. Why pulsus bisferiens should be associated with aortic stenosis he was not prepared to explain, but he was inclined to agree with Dr. Graham Steell's opinion that it was caused by a difference between the rate of the blood flow in the aorta and at the periphery whereby a double wave was produced in the radial pulse.—Dr. R. O. Buist read a note on the Application of Midwifery Forceps. His method was as follows. The patient being under an anæsthetic, in the left lateral position, and the operator's hands and the forceps being previously disinfected, the upper labium was raised with the right hand covered by a swab of wool soaked in lysol solution and four fingers of the left hand were passed into the vagina up to the head and the dorsum was turned towards the hollow of the sacrum. The left blade taken in the right hand was passed along the palm of the left hand and guided into position by the fingers, the handle was raised, and when in proper position it was pushed back towards the perineum and behind the left hand, where it was retained and supported in position by the wrist; the right blade was then introduced in the usual way and the blades were locked. The advantages of this method were, that only one hand was introduced into the vagina and thus the sources of possible infection were reduced and the right hand was available for the introduction of both blades, for the administration of more chloroform, if necessary, or for any other purpose. It was also easy of application and could be managed without assistance.—Dr. William E. Foggie read a paper on three cases of Cerebro-spinal Meningitis. The first patient was a boy, aged five and a half years, of previous good health, who was attacked with headache, sickness, and vomiting which did not yield to ordinary treatment but were followed by great prostration. There was slight feverishness, the pulse was slow and irregular, there was stiffness of the neck and the right arm, and Kernig's symptom was present. The knee-jerks were absent. All the other systems were normal. There were no spots. After seven days' illness he passed into complete unconsciousness, ending in death on the sixteenth day of the illness. Lumbar puncture was performed the day before death. The fluid was clear like water and flowed in a constant slow stream; it showed marked leucocytosis and yielded a pure culture of diplococcus meningitidis intracellularis but no evidence of tubercle. The second patient was a delicate rickety girl, six months old, residing in the same street as the boy. She became ill with signs of gastrointestinal catarrh, followed by stiffness in the neck and back, rigidity in the arms, and speedy unconsciousness. Her temperature was raised, her pulse was rapid and irregular, she had indications of broncho-pneumonia, and her knee-jerks were increased. She showed symmetrical groups of hemorrhagic spots, blue in colour over the pectoral muscles, in areas of the size of a penny, occurring also on the forearms and the back of the elbows. Lumbar puncture yielded slightly blood-stained fluid which contained the diplococcus meningitidis intracellularis. Death took place five days after the onset of the symptoms. The third patient was a boy, aged two years, who two days previous to being seen had fallen and bruised his face. He afterwards became drowsy and then comatose; there was no vomiting, but his mother thought that he had difficulty in swallowing. His temperature was 103° F. and his pulse was 140 per minute and irregular. The right pupil was dilated and did not react; the left one was contracted with well-marked light reflex; the left one strabismic in the left eye. There were no retraction of the head and no stiffness, the limbs being quite flaccid. He died on the fifth day. At the necropsy all the veins in the head were found to be greatly distended with blood; there was slight flattening of the cerebral convolutions and the ventricles were moderately distended with fluid. A soft yellowish-green exudation had formed over the posterior and middle aspect of the brain; it was most marked over the pons and medulla, and spread down both surfaces of the pons to the termination. No tubercles were visible. There was a considerable quantity of turbid, watery fluid in the spinal theca. All the other organs were normal and there was no indication of tubercle anywhere. The fluid contained the pneumococcus of Fraenkel. Dr. Foggie said that the clinical

features of the three cases supported the diagnosis of cerebro-spinal meningitis; it was, however, essential to confirm the diagnosis in such cases by lumbar puncture. Microscopic specimens of normal cerebro-spinal fluid, leucocytosis, Diplococci meningitidis, and pneumococci were exhibited.—In the discussion Professor Stalker expressed his doubt as to the correct diagnosis of many of the early cases in Glasgow, pointing out that since the epidemic commenced the deaths from tuberculous meningitis had decreased in number.

ULSTER MEDICAL SOCIETY.—A meeting of this society was held in Belfast on Feb. 28th, Dr. D. P. Gaussen, the President, being in the chair.—Mr. A. Fullerton read a paper on the Examination of the Urethra and Bladder by the Electric Light. The paper was based on a year's work and included notes of a number of urethroscopies, 111 cases in which the cystoscope was used and 42 cases in which the ureters were catheterised. The urethroscopes which were found most convenient were those of Fenwick and Wyndham Powell. The inflating apparatus was found to be a most valuable addition to the instrument. A case which well illustrated the use of the urethroscope for diagnosis and operative procedure was that of a patient who had violent hæmorrhage from the urethra. The urethroscope showed several papillomata two and a half inches from the meatus. These were removed through a large cannula with complete relief of the symptoms. The cystoscopies were divided into four groups: (1) those in patients whose only or chief symptom was hæmaturia; (2) those in which pyuria was the chief symptom; (3) those who complained chiefly of frequency of micturition; and (4) those who had a combination of symptoms, such as pain, frequency, and blood or pus or both. It was pointed out under (1) that the difficulties of diagnosis in hæmaturia were very considerably reduced by the use of the cystoscope and there was also mentioned the necessity in some instances of using in addition the catheterising cystoscope. In a case of polycystic disease of the right and probably also of the left kidney blood-stained urine was obtained by catheter from the right side and albuminous urine (both of low specific gravity) from the left. In the forlorn hope of saving the patient from death from hæmorrhage the right kidney was removed by the surgeon in charge of the case. The bleeding ceased but the opposite kidney was insufficient and the patient died. The sections of the kidney would appear to support the view that the cysts were formed by dilatation of the tubules. In a second case blood-stained urine was obtained from both ureters by catheter. The specimens contained numerous casts. The rarity of bilateral hæmaturia in these symptomless cases was pointed out. In a third case the hæmorrhage was found to come from the left ureter and a small spicule of oxalate of lime was removed from the kidney on that side, thereby curing a hæmaturia which had lasted for four years. This patient, like the last, had no localising symptoms. Under heading No. 2 a number of cases of pyuria were described in which it would have been impossible without the catheterising cystoscope accurately to have located the mischief. In one case the pus was discovered in routine examination by the medical attendant and tubercle bacilli were found in the urine. The urethral catheter drew off purulent urine from the right kidney, though no pain or swelling was present in that region. Under heading No. 3 cases of enlarged prostate were mentioned in which no residual urine or enlargement per rectum could be discovered. The cystoscope showed, however, intravesical projections, the cause undoubtedly of irritability and frequency. A small prostate weighing four drachms, removed by the suprapubic route, was shown, in which a polypoid projection occupied the prostatic urethra and caused much irritability. It contained one large and a number of small stones in its substance. In a case of frequency about a score of small, round, yellowish nodules were found on the posterior wall of the bladder with no other sign of disease. It was thought these might possibly have been tubercles, although it was pointed out that tubercle in this form was rare. Group 4 included a large number of cases and examples were given to show how easily a mistaken diagnosis might be arrived at without visual examination of the bladder. Under this heading cases of cystitis, tubercle, ulcer, stone, benign papilloma, malignant disease, and bilharzia hæmaturia were quoted. In one case an acute cystitis occurred with sloughing of a large area on the left posterior superior wall. The slough separated, leaving the

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Professor ARTHUR H. WHITE exhibited organisms obtained from cases of cerebro-spinal meningitis. From the first case reported he had made direct cultivations from spinal fluid obtained aseptically by lumbar puncture in broth, human blood serum, glycerine agar, and litmus milk. The broth next day was barely clouded; tiny discrete grey colonies developed on the serum; the glycerine agar remained sterile. Subsequent examination showed these growths to be pure cultures of a diplococcus, sometimes seen in tetrad form, staining irregularly with simple stains like Löffler's blue and negative to Gram's stain. Microscopic examination of the cerebro-spinal fluid showed very many pus corpuscles and numerous organisms seen mainly as diplococci but there

were many tetrads and a few short chains. A considerable number of these organisms were inside the pus cells. Some of them appeared to have capsules and, like those in the cultures, all were decolourised by Gram's method. He continued the inoculation of further cultures to the fifth generation, which was still alive. The fourth and fifth generations had grown very well on ordinary agar, although the original inoculation on the glycerine agar was without result. He had inoculated animals with negative results. The same organism in pure culture was obtained from later cases of the disease, but a smaller number of pus cells and fewer organisms were present, although the cases were more severe clinically. The diplococcus now exhibited had many of the characters of the organism described by Weichselbaum under the name of diplococcus intracellularis meningitidis, but apparently differed from it in having a capsule and in forming short chains. He was not quite satisfied that the organism was a distinct entity, but inclined rather to the opinion that it was a modified pneumococcus.—Professor McWEENEY said that he had observed two cases of Meningitis within the last few days in the Children's Hospital, Temple-street, Dublin. A necropsy was obtained in one of them and revealed the tuberculous form, limited to the cerebral pia-arachnoid. From this numerous tubercle bacilli were obtained in smear preparations. In the other case, which was regarded by Dr. D. J. Farnan as typical cerebro-spinal meningitis, there was no necropsy, but he had examined about five cubic centimetres of fluid obtained from the child (aged three years) by lumbar puncture. The microscopic result was negative, but he had succeeded in growing from it, as the only organism present, a Gram-staining diplococcus tending to form tetrads and growing well in the form of small whitish colonies on ordinary agar, serum agar, and blood agar. He felt sure that this could not be the organism described by Weichselbaum and found by Professor White.

SECTION OF SURGERY.

Frontal Sinusitis.

A meeting of this section was held on Feb. 22nd, Mr. H. R. SWANZY, the President, being in the chair.

Mr. ROBERT H. WOODS exhibited three cases of Frontal Sinusitis subsequently to operation. The operative procedure was as follows. An incision was carried from within outwards along the line of the eyebrow and the frontal sinus was laid open by means of a small trephine, the aperture being subsequently enlarged by means of gouge forceps. The diseased mucous membrane lining the sinus and its recesses was thoroughly removed with a curette. The entire anterior wall of the sinus was not removed, as was generally recommended in the text-books, in order that the scalp might recede and adhere to the posterior sinus wall, because, in his opinion, this step was unnecessary. Obliteration of the cavity could be brought about after removal of the mucous membrane by the growth of granulation tissue from its bony walls.—Mr. P. DEMPSEY alluded to the difficulty in the complete eradication of sinus infection. He said that nothing was easier than to alleviate the discharge and nothing was more difficult than to get it to cease altogether.

The report of the meeting of the Section of State Medicine published in THE LANCET of March 2nd, pp. 591 and 592, contains the full text of a resolution relative to the Poor-law medical service in Ireland adopted by the section. It is now announced that this resolution has been adopted by the General Council of the Royal Academy of Medicine in Ireland.

FORFARSHIRE MEDICAL ASSOCIATION.—A meeting of this society was held on March 7th, Mr. David M. Greig, Vice-President, being in the chair.—Dr. G. A. Pirie exhibited X Ray Photographs of Incipient and Advanced Pulmonary Tuberculosis, Hip-joint Disease, and several Injuries to Joints. He also showed a patient who had recovered from lupus of the face of many years' standing, after repeated application of the x rays.—Mr. Greig exhibited and explained Greville Anderson's Screws and Olamps and for the more perfect securing of the ends of unfractured fractures in the long bones.—Professor Alexander M. Stalker read a note on Palsus Bisferiens. The case was one of aortic stenosis and a striking clinical feature was the diastolic murmur, which was long, rasping, and squeaking in character, indicating great difficulty in the flow of blood from the ventricle and also in the backward flow. He stated

aged 28 years, who was shown at the meeting and was now in excellent health. Three months ago posterior gastro-jejunostomy was done for cicatrised gastric ulcer with hour-glass contraction of the stomach. After the operation vomiting increased and intestinal obstruction occurred, so that 11 days later an exploratory laparotomy had to be undertaken. The union of stomach and jejunum was found to be perfect, but in its neighbourhood the bowels had become glued together as the result of miliary tuberculosis occurring since the first operation. Separation of the collapsed and adherent coils with division of one band was sufficient to enable peristalsis to be resumed and the patient made a good recovery. There was now no suspicion of peritonitis. The second case was that of a man, aged 59 years, whose symptoms had long suggested ulcerative colitis. He was ultimately found to be the subject of an intussusception five inches long felt per rectum, of which the exciting cause was a papillomatous growth in the sigmoid region. A free excision of 17 inches of bowel as well as a considerable portion of mesocolon was carried out and four months later the resulting artificial anus was closed by a second operation. In the six months since then he had gained a stone in weight and when seen ten months after the first operation was in perfect health.—Dr. Hunter, Mr. A. R. Tweedie, Dr. C. H. Cattle, Mr. T. D. Pryce, Dr. M. Parry-Jones, and Dr. J. Watson discussed the cases.—Mr. A. R. Anderson read a paper on the Resistance of the Urinary Bladder to Infection. He alluded briefly to five cases where there had been a foul prostatic or a rectal or uterine cancer discharging septic material directly into the bladder, saying that it was remarkable how long this state of things might continue without causing actual cystitis. The conditions favouring the occurrence of cystitis were traumatism, congestion, and retention. The last was the most important, as by itself it produced every condition favourable to microbic invasion as well as congestion from the associated straining. The microbes concerned in cystitis were the bacillus coli, the urobacillus, and the pyogenic streptococcus and staphylococcus. Bacteriuria did not necessarily mean cystitis and occurred also in typhoid fever and septic osteomyelitis. The resistance of the mucous membrane was, however, such that the normal bladder was practically invulnerable.—The paper was discussed by Dr. Hunter, Dr. Watson, Dr. Cattle, Dr. F. H. Jacob, and Dr. Parry-Jones, it being pointed out that trophic lesions of the spinal cord greatly favoured the occurrence of cystitis, and Mr. Anderson replied.

DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 14th, Mr. Russell Oscombe being in the chair.—Dr. R. V. Solly showed a microscopic specimen of a Hair affected with *Microsporon Audouinii*, stained with the modified Gram staining method, where the decolourising was done by aniline oil containing a few drops of strong hydrochloric acid. The method was a very good one, but it took a long time to obtain a permanent specimen. For diagnostic purposes a satisfactory result could be obtained in a much shorter time.—Mr. A. C. Roper showed a specimen of the Femur which had undergone Spontaneous Fracture in the lower third of its shaft owing to tuberculous erosion.—Dr. Solly also showed a case of a child with Double Coloboma Iridis.—Dr. A. W. F. Sayres showed a specimen of Aortic Aneurysm obtained from a patient exhibited before the society nine months previously. The patient exhibited the following especially interesting symptoms: 1. Both radial pulses were absent. 2. He had suffered for four or five years from severe radiating pains around the shoulders, neck, and head, but these had ceased during the latter part of his illness. This probably indicated that the pressure on the nerves had ceased owing to the enlargement of the sac taking place in a different direction. 3. The patient died from dyspnoea, produced by direct pressure on the trachea, three months after being shown before the society. It was interesting to note that there were no symptoms pointing to pressure on the recurrent laryngeal or sympathetic nerves and that there was absence of oedema of the neck. The specimen showed an aneurysm of the size of a small coconut, which involved the ascending, transverse, and part of the descending arch of the thoracic aorta. The upper anterior segment was filled by a firm laminated clot which occupied about two thirds of the entire cavity. The aorta leading from the sac was extremely atheromatous. The innominate artery appeared to be incorporated in the sac and occluded. The right recurrent laryngeal could be traced, coming from beneath the innominate and not around it, but the left was apparently involved

so much in the sac that it could not be discovered and it would appear remarkable that it was not paralysed by stretching. The sternum was much eroded by the forward pressure of the tumour, the bone in places being completely divided. It seemed peculiar that there had been no pressure on the left innominate vein, as the sac had enlarged in a forward and upward direction.—Dr. G. P. D. Hawker read a paper on 100 cases of Appendicular Abscess, the record of which cases he had obtained from the notes of St. Mary's Hospital, London.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—A meeting of this society was held on Feb. 27th, Dr. Leslie Roberts, the President, being in the chair.—Dr. V. H. Rutherford showed a Case for Diagnosis. The patient was a young man, aged 18 years, with a large area of pigmentation over the right scapular region extending outwards and downwards over the shoulder-joint and back of the arm. The patch was covered with a few fine hairs. A smaller and less marked area was also present upon the back of the left arm. The condition had only been noticed for about one year, no history of a congenital origin being obtainable. No local irritants had been applied and the area did not itch. Microscopically, there was considerable acanthosis of the prickle-cell layer with an increased deposit of pigment. Various suggestions were put forward, among them being that it was really a congenital mole which had been latent for a long period, or that the condition was allied to acanthosis nigricans.—Mr. A. Shillitoe showed a case of Parapsoriasis of Brocq in a girl, aged 16 years, who had suffered from a scaly eruption "as long as she could remember." She had received antisyphilitic treatment without avail. The entire trunk was covered with a fawn-coloured, slightly scaly, non-infiltrated, patchy eruption.—Dr. A. Eddowes exhibited (1) a man, aged 42 years, with severe and extensive Lichen Planus who had three years previously had an acute general dermatitis; and (2) microscopic specimens from a case of Actinomycosis.—Dr. J. H. Stowers showed a little girl, aged eight years, with Multiple Warts of a most unusual type. Nearly all the growths were more or less symmetrical and of widespread distribution and the analogy to Ichthyosis hystrix was in many cases most marked, as some of the projections were conical and surmounted with hairs. No other member of the family had been similarly affected.—Dr. G. Norman Meachen showed a man, aged 67 years, with Syphilitic Lencoderma affecting the root and dorsum of the penis and also the scrotum. The hypogastric region and perineum was the site of a tertiary eruption of three months' duration, the primary affection being 49 years ago.—Dr. F. Meadows Turner exhibited a case of Long-standing Lichen Planus, the oral mucosa being also affected. Several of the papules presented a linear arrangement.—Mr. G. W. Dawson exhibited a young woman the subject of Acute Lupus Erythematosus, affecting the face and the backs of the hands and fingers, of 18 months' duration.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 1st, Dr. Leonard P. Mark, the President, being in the chair.—Mr. John R. Lunn read notes of a case of Retroversion of a Gravid Uterus simulating an Extra-uterine Pregnancy.—Dr. F. G. Crookshank read a paper on the Prognosis and Treatment of Diphtheria, based principally on six years' work at the Mortlake isolation hospital. He alluded to the various factors, knowledge of which was necessary to make an accurate forecast of the course of the disease, referring especially to age incidence and the study of associated cases. He discussed in some detail the general treatment of the disease and especially that of cases marked by evident toxæmia. In these cases he recommended the hypodermic injection of erythrine with-chloride of adrenalin and insisted on the advantage of differentiating clinically the cases in which the incidence of the poison was principally on the central nervous system (vagus nucleus), the heart muscle, or the kidneys.

DEATH OF A CENTENARIAN.—The *Times* of March 12th states that Mrs. Hastings Parker, lady of the manor of Swannington, Norfolk, died on March 8th in her 101st year at her residence, Dadwick House, Buxton Lammes, near Norwich. She was the only child of the late Major Charles Radball of Swannington Hall, and she married in 1853 Captain J. R. T. Hastings Parker who died in 1855.

Reviews and Notices of Books.

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Under auscultation is a good account of the structure of the different parts of the respiratory tract and the influence which they have on the sounds produced. The graphic records of the physical signs, which are given on pp. 118-119, do not seem to us to be of much value, except to the originator of them, and we feel sure that the student would waste more time in committing them to memory than their

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In the section headed Medicine are several interesting articles. For instance, Dr. W. Porter writes on the Care of Tuberculous Subjects. Here we notice that the author does not seem to have much faith in creosote or its substitutes and predicts that in another decade these remedies will be used very little, if at all, internally. Dr. J. E. Squire next writes on Pulmonary Tuberculosis in the Middle Aged and the Aged, an article which will repay perusal. Amongst other lectures in this section we may notice one by Dr. Arthur E. Elliott on Obscure Renal Hæmaturia, under which term he includes a loosely related group of cases which possess two features in common—viz., unilateral renal hæmaturia and an obscure pathology. Klemperer advocates for these cases a purely medical etiology and holds the theory that the hæmorrhage is due to vaso-motor causes, his hypothesis being that there is paralysis of the vaso-constrictor nerves of the kidney resulting in vaso-dilatation and consequent diapedesis of blood elements. Against this theory, however, is the fact that the bleeding has invariably been found to come from one kidney only in all cases in which proper local investigation has been undertaken. The writer of the paper directs attention to unilateral chronic nephritis as a cause. An interesting lecture on Myxœdematous Infantilism and Incomplete Myxœdema is contributed by Dr. R. S. Morris who treats of the

subject very fully. Dr. C. Dieulafoy writes on Syphilitic Aortitis and finally the medical section concludes with an interesting *résumé* by Dr. Leon Bernard of the Recent Progress in the Disorders of the Adrenals.

Amongst the surgical papers Dr. G. Ross writes on the Principles of Treatment of Fractures of the Lower Extremities, an article well illustrated by skilgrams; Dr. R. Hibbs on the Treatment of Hip-joint Disease; and Dr. J. Rinehart on Tuberculous Hip-joint Disease. Dr. David Wallace of the Royal Infirmary, Edinburgh, contributes an excellent article on Vesical Tumours, and then the surgical section concludes with the Treatment of Hæmorrhoids by Dr. G. Müller. In this comprehensive article the various methods of treatment by crushing, submucous ligation, Whitehead's operation, excision and suture of the wound, ligature, clamp and cautery, injection and division, are passed under review and the conclusions arrived at as regards the choice of operation are: (1) that a single pile may be excised and the mucous membrane sutured. (2) Several varicose piles are best treated by the clamp and cautery or lacking that equipment by the ligature. Where hæmorrhage has been a pronounced feature hæmorrhoids are best ligated and in all cases of doubt the clamp and cautery should be used.

The remaining portion of the volume contains articles on Obstetrics, Gynecology, Laryngology, and Otolaryngology. The present issue fully keeps up the reputation of its forerunners.

Physical Diagnosis. By E. LEFEVRE, M.D. Second edition, revised and enlarged. Illustrated. London: Hodder and Stoughton. 1906. Pp. 479. Price 10s. net.

THE present edition of this book has been enlarged and several fresh illustrations have been added. The plan of the book is good and should commend itself to the student. The first part, dealing with the anatomy of the trunk, contains some excellent diagrams. But while recognising the utility of the division of the abdomen into regions on a scheme familiarised by long use in anatomical works, we doubt if the author's treatment of the thorax by linear division will be of the same value. The student of physical signs, in England at any rate, will have learnt his thoracic anatomy in another way and will not, we think, be inclined to adopt this new style when he comes to the hospital ward and the out-patient room.

The usual rules regarding the examination of a chest are fully set out in Parts II. and III. and we are glad to see that the author lays great stress on the importance of inspection and palpation as aids to a diagnosis, for the student is too much inclined to resort at once to his stethoscope and to miss valuable signs which inspection and palpation, if first thoroughly conducted, would have taught him. Another point emphasised, and rightly so, is the necessity of becoming familiar with the phenomena of normal respiration. The author regards the use of the pleximeter as likely to mislead the student and gives minute instructions for the positions of the patient and examiner in percussion; and though it may be all very good we do not think that such very definite rules can be laid down for the art of percussion; for surely, where the tactile sense of the fingers and the mental reception and interpretation of the sounds produced play so prominent a part, the individuality of the examiner must form a large element. We like the description given of the difference between "dulness" and "flatness."

Under auscultation is a good account of the structure of the different parts of the respiratory tract and the influence which they have on the sounds produced. The graphic records of the physical signs, which are given on pp. 116-118, do not seem to us to be of much value, except to the originator of them, and we feel sure that the student would waste more time in committing them to memory than their

THE LANCET.

LONDON: SATURDAY, MARCH 16, 1907.

The Alleged Growth of Insanity.

ON Dec. 27th, 1906, the *Times* published a long article dealing with the problem of the growth of insanity. Earlier in 1906 the same correspondent had written in that newspaper two articles on the subject, each of which had been followed by letters from medical experts. Dr. DAVID NICOLSON summed up his view of the matter at that time in an excellent letter which appeared in THE LANCET of June 9th, 1906, p. 1635. In this letter he discussed the subject in a thoroughly judicial spirit, and in so far as it seeks to interpret the meaning to be put on the latest statistics of the Commissioners in Lunacy in this matter it was a valuable expression of opinion and will repay reading now, when the newspapers teem with allusions to the alleged growth of insanity.

The writer in the *Times* in his last communication summarised his propositions under six headings, of which the following are abstracts:—

(a) That in the last 60 years the proportion of certified insane persons to the sane population has grown from 1 in 760 in 1844 to 1 in 272 in 1905 and that in addition to this there is a large fringe of "borderland" cases.

(b) That insanity in all cases and in all its forms is probably largely brought about by physical changes "in the blood or in the fluids or tissues of the brain," and that these changes call for complete investigation by "exact methods of chemical and physical research," supplemented by the skill of "highly trained clinical physicians."

(c) That the commonly accepted "causes" of insanity, such as inheritance, &c., are conditions constantly affecting large numbers of people who do not become insane and that no "causation" in the proper sense of the word can be attributed to them. The *vera causa* in every case must be some changed condition of the blood or tissues of such a kind as to produce disturbance of function in the brain cells which are subservient to thought, and also, if sufficiently severe or long continued, to produce degeneration of their structure.

(d) That the common jargon about so-called "psychology," "mind," "mental disease," and so forth, is a mere incubus upon science.

(e) That the organisation of asylums is not calculated either to attract or to encourage young medical men whose tendencies are in the direction of research.

(f) That the insane being secluded from the outside world and from general medical observation have been practically untouched by the general progress of medical science along other lines and that there has been no substantial advance of knowledge with regard either to the causation of insanity, to the recognition of warnings that it may be impending, or to the discovery of means by which it may be prevented or cured.

We propose to criticise some of these propositions briefly, especially as we find them accepted as proved in some of our lay contemporaries. Figures are often very misleading, and there is little doubt that the real increase of insanity is by no means so alarming as the writer in the *Times* and his nervous followers would have us believe; and further, there are well-recognised causes of the increase, which should tend to allay public apprehension. The public have

greater confidence in the treatment that the insane receive and relatives of patients more readily place them under care. Again, many of those infirm and aged persons whose mental failure is rather one of decay than actual disease are now removed to asylums, whereas in former times they were treated in their own homes or in the infirmaries and escaped official notification as insane. We do not consider that Dr. NICOLSON's differentiation between the "actually" insane and the "potentially" insane, which he drew in the letter to which we have already referred, pretends to do more than to afford an explanation of the large increase in the number of pauper or rate-paid lunatics, seeing that there has been practically no increase in the proportionate number of the *private* class of lunatics. For although it is true that there are many of the "potentially" insane in asylums who for the moment might be liberated, nevertheless if this were done the stress of life would soon make them "actually" insane, and therefore it is clear that they are of more value to society if they remain as workers in asylums. The real question that we have to ask ourselves is, What proportion of the "potentially" insane in our pauper asylums ought never to have been sent there from workhouses or elsewhere? And in this relation the influence of the four-shilling capitation grant must necessarily be a serious item for consideration.

We cordially agree that the time has come when the country and the legislature should realise that some endeavour should be made to face the problem of insanity. For, without disputing over misleading statistics, it is certain that much might be accomplished even with the knowledge which we already possess and which is admitted by all authorities. We do not agree with the *Times* correspondent in his sweeping condemnation regarding the progress of psychological medicine, for much real advance has been made. To have banished many of the old ignorant ideas and to have laid a sound foundation for future knowledge is work which is not easily accomplished. Every man believes that he understands and is capable of discussing this problem of insanity but the solution is by no means so simple as some would have us believe. Even the *Times* correspondent, excellent though some of his propositions would seem to be, falls into the grievous error of urging that "psychology" should be banished as "a mere incubus upon science." It is this ignorance of what a normal mind should be that has hampered progress in the past, for of what value is the study of pathology apart from physiology? If the writer in the *Times* refers to arm-chair theorising when he speaks of psychology his criticism to a certain extent might be accepted, nevertheless the fact remains that the normal mind must be understood before we can hope to interpret correctly its indications of disease. In THE LANCET of Dec. 1st, 1906, p. 1625, we urged the importance of providing wards in general hospitals for the treatment of early cases of mental disorder, as this would supply a double want. Such wards would benefit the individual by saving him from a serious breakdown and they would benefit the community by supplying material to physicians and pathologists whose training has especially fitted them for the investigation of disease. Work, and excellent work, is being accomplished by many medical officers to asylums, but the

that the education of the primary schools would be conducted upon the same lines of direct utility for a purpose definitely in view which will evidently govern the work of the great school for which Mr. GODLEE is the spokesman. The students who come there will come with minds in tune, and they will receive just the instruction fitted to prepare them for the duties in life which they intend to discharge. This definite and practical aim is what is so difficult to obtain in the primary schools of the people.

The rulers of University College and of its attached hospital, like those of some other centres of medical education in the metropolis, have determined to surrender the preliminary subjects forming part of that education to the newly constituted University of London and to reserve their own forces for the conduct of the advanced teaching only; that is to say, for the conversion of students of science into practitioners of medicine. As our readers know, we believe that such a separation of the preliminary from the advanced subjects is likely to improve the teaching of both, and, especially perhaps, of the former which after all form the foundation upon which must depend the safety of the superstructure. In the schools as they were until lately organised the preliminary subjects were necessarily committed to teachers in whose ultimate hopes and aspirations they could fill but a subordinate place, and who, in many cases, would look forward with some eagerness to escape from them. In such conditions the consequent want of enthusiasm would sometimes be liable to extend from the teacher to the class, and the studies in question were in some danger of being regarded as impediments to the learning which the student most desired to receive and which the teacher would have been better pleased to impart. The individual schools, moreover, were only in a few instances large enough to afford to the teachers of preliminary subjects a class either sufficiently numerous to be stimulating or sufficiently remunerative to afford strong inducements to exertion. We believe that most of the London medical schools will be well advised to surrender instruction in the preliminary subjects, and it may reasonably be hoped that under a new régime the teachers of such subjects will hold more distinguished positions and will receive larger payments than have hitherto usually fallen to their share, and that a new sense of the importance of their duties will tend to a general enhancement of their dignity and usefulness.

The Martyrs of Science.

WE published last week an obituary notice of the late Dr. ALLAN MACFADYEN, whose valuable life was cut short at the age of 46 years from Malta fever, the infection being contracted during his bacteriological research work. The trite observation that "every pearl has its price" can have no more forcible illustration than those which may be gleaned from the story of scientific progress. Every step that knowledge takes is over the forms of those who have fought and have fallen in order that it may be taken, and there is no advance perhaps in any direction of scientific progress which has not required its pioneer victims to pave the way. There is little glamour about the fate of the silent martyrs offered to the relentless god of

Progress; no rites or ceremonies attend the sacrifices that he demands. Here and there perhaps one of the martyrs of science, by the great results achieved in his lifetime, attracts the attention and the applause of his fellow men. For every such one though there are a hundred quietly following the path of their duty, unregarded, unrewarded, and, save for the little upward step that their toil has helped, to the end unknown. Such workers there are in every branch of scientific endeavour, be it in the factory, the engineering shop, the cable ship, the chemical laboratory, or the hospital ward. No poet devotes his strains to this army, and the ubiquitous orator of the public press is prone to belittle its work. Yet mankind owns no finer heroes than some who have fallen from the ranks of this student army overwhelmed, by the weight of the physical and spiritual obstacles against which they struggled. It is a strange thing that the applause of men greets only those who fight with men. They who battle with the enemies of man, with disease, with accident, with unknown forces and unknown seas and lands, these men must fight and, if necessary, die almost unnoticed by their fellows. The soldier or the sailor, fine though the patriotism may be that animates his breast and glorious the courage that bears him through, owns no such noble purpose as belongs to him who battles on the side of all human kind.

THACKERAY wondered whether men were naturally cowards at heart that they give such admiration to physical bravery over all other qualities; indeed, it leaves the mind puzzled if we seek to understand how it is that spiritual valour has comparatively so little appreciation amongst us. Perhaps the belief that spiritual valour alone supports the army of workers in the battle of scientific progress keeps public sympathy so cool where scientific work is concerned; but if this is so better knowledge of the facts should dissipate the belief. There is no real difference between the risk of death taken in the battlefield and that taken in the laboratory. In each case death is possibly part of the programme, though in one the risk is met in hot blood and the other in cold. And in each case the courage required is moral as well as physical, though in scientific work the moral side is more obvious. It is only the man who has himself felt the need for courage who realises the fortitude of those who labour on when the end seems more and more doubtful, when hope seems faint and ill-supported; and when the help of companions understanding or encouragement is lacking. In such circumstances as these it is spiritual valour that keeps the worker in scientific fields still steadfast to his task. This is the valour that upholds the explorer, the chemist, the bacteriologist, and it is by courage of this kind that these men, unfortunately only too often, are brought to fill a grave that may well be termed a martyr's. The names of some such martyrs will come readily to the minds of our readers, although no roll of honour commemorates them. They gave their lives, often away from their native country, fighting the foes of their countrymen. Those foes were foul diseases and pestilential conditions of life and soil. Thousands of human lives have been saved already by their endeavours, and we look forward confidently to the time when vast countries devastated now by malarial scourges will be

peopled by healthy and prosperous populations. The time must soon come when the conquests of science will cease to rank low beside the martial acquisitions of war. At the present time a town sacked brings more credit to the operator than a huge area redeemed by sanitation in the strife between science and uncontrolled natural forces. Certainly one modern statesman has pointed out the nation's enormous indebtedness to scientific workers in our possessions beyond the seas, but Mr. CHAMBERLAIN'S words were striking because they were so rare. It will be some time before the public, at any rate in this country, learns to appreciate scientific work.

Annotations.

"No quid nimis."

THE NOTIFICATION OF CEREBRO-SPINAL FEVER.

THE notification of epidemic cerebro-spinal meningitis has been introduced into the county of London, as we said last week. The county of London has a population of nearly 5,000,000 and the departure affords an opportunity to the sanitary service of the metropolis of accumulating data and experience on a scale which could not easily be obtained elsewhere in the world. If the medical profession in London coöperates cordially and conscientiously in this experiment with the medical officers of health and if these officers in turn afford to Sir Shirley F. Murphy and his staff every possible assistance in filling up accurately the tables which have been circulated, material progress in our knowledge of this still mysterious malady should be made. Great responsibility will rest with the officers of the London County Council in grouping the somewhat miscellaneous data which will doubtless reach them and upon discrimination in this grouping will depend the value of the data for educational purposes. To the vast majority of medical practitioners in this country cerebro-spinal fever, so far as practical experience goes, is a closed book, and thus reliance will have for the most part to be placed upon diagnosis from book knowledge and by the method of exclusion, together with such assistance as can be afforded by those who have had opportunities of seeing cases of the disease. But, as we are told in the memorandum which has been circulated by Mr. W. H. Power, the medical officer of the Local Government Board, although typical cases may prove easy of diagnosis departures from the type are so common that the malady has at one or another time been mistaken for sunstroke, enteric fever, pneumonia, sore-throat, or influenza. It is in these circumstances that notification may be likely materially to aid diagnosis by bringing to the knowledge of medical officers of health such groupings of anomalous cases as to lead to the suspicion that cerebro-spinal fever may be the disease in question. Furthermore, we are likely by carefully recorded information to ascertain somewhat more definitely whether or not the disease is communicable from person to person and, if so, what is the degree of such infectivity. It will be well in this connexion if a healthy scepticism be observed with regard to the evidence, more especially lest any group of cases evincing apparent infectivity may eventually be proved to be cases not of cerebro-spinal fever but of influenza or enteric fever. If the forms which have been circulated by the London County Council are properly filled up and the number of persons exposed in each invaded home are recorded the combined statistics should afford as much information not only as to the question of infectivity but also as to the fatality-rate and

period of incubation of the disease. Doubtless, too, facilities will be afforded either by the borough councils or the London County Council for the examination, when desirable, of the nasal and oral mucus, as also, in cases where lumbar puncture can be conveniently and safely performed, of the cerebro-spinal fluid. It will be of interest to learn to what extent cases of meningitis other than cerebro-spinal are notified and what at the end of the six months has been the cost of the experiment. The County Council has certainly been well advised to undertake this work and we have no doubt that it will present the data procured in a thoroughly scientific aspect. It may eventually be found both helpful and instructive if the results obtained in London, Glasgow, and Belfast are put together for comparative purposes.

HARD WATER-SUPPLIES.

It is a popular but probably wrong impression that hard drinking waters are prejudicial to the health and, moreover, are injurious to delicate skins when used regularly for ablutionary purposes. Gout, kidney disease, and dyspepsia by an interesting line of reasoning have been supposed to be due to, or aggravated by, the drinking of excessively hard water. Some mysterious connexion between the chalk of the water and the formation of "stone" in the kidney or of "chalk" in the joints in gout is a favourite speculation with many, but in the history of the world's water-supplies there is no trustworthy evidence that the drinking of hard water influences for worse these diseases. The idea is, in fact, chimerical, especially when we bear in mind that many waters of repute in gout and kidney disease contain as their principal constituents lime salts. The chalk of "chalky gout" is, of course, due to urates and not to lime. Some years ago a commission of experts in France came to the conclusion on considerable evidence brought before them that a moderately hard water was the best and that persons residing in districts supplied with such water had a better physique than those living in districts in which soft water was used. Similar conclusions were expressed by a committee appointed in Vienna to investigate the same question. In our own country the Royal Commission on Rivers Pollution in 1876 concluded on this subject after a long inquiry that where the chief sanitary conditions prevail with tolerable uniformity the rate of mortality is practically uninfluenced by the softness or hardness of the water supplied to different towns, and the average rate of mortality in the different water divisions varies far less than the actual mortality in the different towns of the same division. It has further been stated that the very soft water supplied to Glasgow from Loch Katrine has led to an increased prevalence of rickets but there is not a particle of evidence in the health returns of the city that such is the case. A change of drinking water does, however, affect occasionally some persons in the form of a disturbance of the gastric organs. Thus symptoms of common dyspepsia have been remarked in persons who have had occasion to adopt temporarily a soft drinking water-supply after being accustomed to drinking hard water and *vice versa*. Pure distilled water is known to cause gastric catarrh by reason of its power of penetrating the tissue cells, which then swell. Obviously such a process in the stomach may lead to gastric catarrh. On the whole, therefore, there does not appear to have been any serious count sustained against the use of hard waters on the score of their affecting unfavourably the health of the drinker. The innumerable inconveniences experienced by every householder who is provided with an excessively hard water-supply form another question, and withal a serious one. The constant blocking of the hot-water pipes with lime salts entailing the frequent cleaning of the boiler and the pipes, the

latter sometimes having to be removed altogether, is a real hardship to householders served by a very hard water-supply. There can be little doubt that such being the case the risk of an explosion occurring in the kitchen boiler is immensely increased. We have seen pipes which were taken out of a house in the district supplied by the Kent Company and which had only been in use a few months so thickly lined with chalk as hardly to permit of the passage of a pen-holder through them. The waste caused by hard water is enormous, the life of utensils and pipes is considerably shortened, and the loss of heat is very great. The deposition of lime salts practically destroys the conducting power of the metal of cooking vessels, kitchen boilers, and pipes. For cooking purposes, also, hard water is objectionable; it hardens the tissues of vegetables and meat and thus tends to make them indigestible. These facts furnish ample reason for giving serious consideration to the proposal to soften, or partly to soften, certain of the very hard water-supplies in England. If it can be done in some places, of which the Colne Valley is an example, with economy and with great advantages to the consumers it can be done in all.

HATPINS IN PUBLIC VEHICLES.

A FREQUENT correspondent writes: "Most men, even those least acquainted with the details of feminine attire, are aware that women who wear hats retain them in position by transfixing them with two or more 'hatpins,' or fine steel skewers, about eight inches in length, having more or less ornamental knobs or buttons at one end and tapering to sharp points at the other. These pins now and again figure in the accounts of proceedings at the police courts as weapons used by women of violent temper either in attacking an enemy or in defending themselves against arrest by the police. I consider that they are besides a source of danger to the general public through the negligence rather than the malevolence of their wearers. In the headdress of a well-dressed woman they are useful for the purpose for which they are intended and are not conspicuous except as ornaments, the button or knob alone being exposed to view, the point either concealed or only slightly projecting. Slatternly and untidy women, however, not exclusively of the poorer classes, wear them in such a manner that two or three inches, or even more, of their sharp ends project beyond the hat or protrude themselves through the coils of hair which the hats surmount. When the wearers are nursemaids mistresses will do well to see that their children's eyes and features are not exposed to danger through the slovenliness of their servants, but, of course, when the mistresses are slovenly also no such supervision is to be expected. The adult public, including the sex to which hatpins are not a necessity, are principally concerned with those worn by persons with whom they are, literally, thrown in contact when travelling in omnibuses, tramway cars, and trains. In all these means of conveyance the tendency is towards increased speed and rapid stopping and starting, so that we frequently see those entering or leaving a carriage stagger against one another, or against those seated, and scarcely less often a sudden jerk causes a row of seated passengers to sway more or less violently according to their individual weight and stability. It may be suggested that if all sway in unison, actuated by the same impulse, their heads will remain at unchanged distances from one another; but, in fact, all are not affected alike, and a man who remains tolerably rigid may have the head of a less stalwart neighbour brought into very close proximity with his own. I speak from personal experience and hence this letter. He may receive nothing more serious than a blow from a well-padded skull, but if there is a spear as sharp as a needle to accentuate such a blow, a

needle, moreover, which has certainly not been sterilised in the ill-kept hair through which it has passed, he may quite conceivably be hurt." We have drawn attention to the dangerous contingency before in our columns and the risk has not decreased with the advent of motor omnibuses, the passengers of which are more liable to be rolled against one another than are those in any other class of public vehicle. As a matter of fact, no serious accident has, so far as we know, yet happened, but as motor omnibuses are increasing we may some day hear of a traveller summoning up courage to remonstrate with a dangerous neighbour. On such an occasion he might fittingly point out to her that her hatpin is but a means to an end and is no more intended for exhibition, so far as its mechanical details are concerned, than the other apparatus by which she and her masculine fellow travellers retain their garments generally *in situ*. More often, however, bashfulness will prevail and the threatened person, after an apprehensive glance or two at the danger, will either resign himself to his fate, hoping for the best, or will take an early opportunity of changing his seat. Some day—it will not be till after an accident has occurred—we may see a negligent lady figuring as a defendant in a court of law, and in this connexion we may remind married men of their own liability to pay damages incurred by their wives. Pins are obtainable, we believe, having counter-knobs to screw on to their points, but they are unpopular because they are difficult to use and also more expensive, although, on the other hand, they afford a double opportunity for the display of ornament. In the absence of any more ingenious device than these the careful adjustment of pins of a suitable length would appear to be the only remedy possible.

INTRACTABLE HICCOUGH DUE TO LATENT TUBERCULOSIS OF THE PONS AND MEDULLA.

At a meeting of the Société Médicale des Hôpitaux of Paris on Jan. 18th M. Henri Lamy and M. Maurice Cleret reported the following interesting case. A man, aged 43 years, was admitted into hospital on Oct. 28th, 1906. He had enjoyed good health until four years previously when he had left pleurisy. Subsequently he suffered from cough and grew thin. On admission he was emaciated and coughed and expectorated considerably. The sputum was purulent. Examination of the chest showed dulness at the left apex in front and behind and at the right base. The respiration was cavernous at the left apex and there were numerous moist râles at the right apex. At the right base there were pleural friction and diminished vesicular murmur. The case ran the ordinary one of fatal pulmonary tuberculosis, but about a fortnight before death, which occurred on Dec. 28th, the patient complained of persistent hiccough. This continued until the last two days of life, when delirium and vomiting appeared. Coma followed and Kernig's sign was obtained. Thus there were typical symptoms of meningitis on these days. The necropsy showed extensive pulmonary tuberculosis and no other visceral lesions. There was recent miliary tuberculosis of the cerebral membranes. A large tubercle of the size of a small pea was found on the posterior surface of the inferior part of the left inferior cerebellar peduncle. It had hollowed out a cavity by pressing aside the fibres of the peduncle. Its internal and superior extremity was in contact with the floor of the fourth ventricle. Sections of the brain showed no other lesions except a tubercle of the size of a hazel-nut at the lower part of the pons. It is noteworthy that these tumours remained quite latent until a fortnight before death when the intractable hiccough occurred. At the following meeting of the society M. O. Gandy and M. Lévy-Valensi reported a similar case in a man of the same age, who

was admitted into hospital on Dec. 13th, 1906. He had had sero-fibrinous pleurisy five months previously. After this he suffered from cough and loss of flesh. Eight or ten days before admission continuous headache began. In the streets the patient forgot his way. Three days before admission hiccough began. Five, six, or eight times a minute violent contractions of the diaphragm occurred accompanied by characteristic closure of the glottis and quivering of the whole abdominal wall and lower part of the thorax. The patient was apathetic and with difficulty could be made to answer "yes" or "no" to questions. He muttered more or less incomprehensible words. At night he was delirious. There was slight tremor of the upper limbs. The temperature was a little raised and the pulse was rapid and regular. There was no stiffness of the neck and the pupils were regular. On the following day Kernig's sign was obtained. The patient became torpid and died comatose on Dec. 19th. Intractable vomiting persisted by day and by night until the end. Hiccough is evidently a rare variety of the disturbances of the respiratory rhythm which may occur in meningitis, such as pauses, polypnoea, and Cheyne-Stokes respiration.

FEBRUARY AT HOME AND ABROAD.

	Highest temperature.	Lowest temperature.	Mean maximum temperature.	Mean minimum temperature.	Mean temperature for month.	Range of temperature.	Days with rain.	Total fall of rain in month.
	Dega.	Dega.	Dega.	Dega.	Dega.	*		Ins.
Scilly	52	35	47	40	43.6	7	13	1.65
Jersey	52	27	44	35	40.2	8	8	1.25
Torquay	53	25	45	35	39.9	10	8	1.53
Bournemouth ...	53	23	45	34	39.1	11	7	1.31
Bournemouth, I.W. ...	52	26	45	35	39.6	10	8	1.48
Bath	53	17	44	30	37.2	14	8	1.25
Manchester	54	21	43	33	38.2	10	11	2.04
Birmingham ...	53	20	42	32	36.8	10	8	1.11
Nottingham	54	18	44	31	37.3	13	8	1.33
London	53	26	43	34	38.4	9	5	0.99
Paris	55	15	41	29	34.9	12	8	1.12
Berlin	48	10	35	26	30.4	9	13	1.58
Nice	61	28	52	35	43.5	17	3	1.30
Florence	60	26	48	35	41.4	13	3	2.01
Rome	58	32	52	39	45.6	13	8	3.56
Naples	57	34	51	41	45.8	10	10	2.17
Palermo	62	32	59	41	48.6	15	13	2.95
Malta	63	39	56	46	50.8	10	14	3.74
Algiers	70	34	58	45	51.6	13	17	4.89
Blarritz	63	25	49	37	42.8	12	10	3.03
Lisbon	64	36	55	44	49.9	11	5	0.67

* A day on which at least 0.04 in. has fallen.

The above figures represent the temperature and rainfall for last month at certain selected places in this country and abroad. If they are compared with the corresponding figures for January which were published in THE LANCET¹ it will be seen that at all the foreign stations except Berlin, Paris, Palermo, and Algiers there was a rise of temperature, while in this country a fall was experienced. As is invariably the case in winter, the nights at the Scilly Isles were much milder than in any other part of this country and, as can be seen by the mean minimum temperatures, they were also considerably milder than those at Nice, Florence, and Blarritz, and only a little cooler than those at Naples and Palermo. Visitors to Malta and Algiers, however, enjoyed a night temperature as mild as, or milder than, that of the afternoons at nearly every in this country,

¹ THE LANCET, Feb. 16th, 1

and visitors to Lisbon experienced the same temperature at night as that prevailing during the day-time at Bath, Nottingham, and Jersey. The days at Nice and Florence were several degrees warmer than they were at Bournemouth, Sandown, and Torquay but after sunset the English resorts retained their warmth to a much greater extent, so that the nights were no cooler than those of their southern rivals. The average diurnal range of temperature was in nearly every instance less at our own southern and south-western resorts than abroad, but the range of only ten degrees at Naples and Malta was no larger than that at Sandown and Torquay and a degree less than it was at Bournemouth. At all the foreign resorts except Naples, Malta, Algiers, and Lisbon the sheltered thermometer touched, or fell below, the freezing-point, and the only place in the whole of the United Kingdom that escaped the frost was Scilly. At Nice and Blarritz there were nine frosty nights and at Florence 12. Except at Algiers the month was nowhere very rainy; the driest spots abroad were the Riviera, Northern Italy, and the coast of Portugal, while in this country London was amongst the driest. The sunshine is not recorded at the foreign stations, but in this country, especially along the south and south-west coasts, the month was particularly bright, most places registering an average of about three and a half hours per day. It is, however, probable that most of the Mediterranean resorts enjoyed a longer duration considering that the sun in that latitude was above the horizon for a much longer period.

MEDICINE AND THE UNIVERSITY OF OXFORD.

As will be seen by particulars given in another column, "the Master and Fellows of the College of the Great Hall of the University, commonly called University College in the University of Oxford," have decided to endow a prize for research in any medical science. It is to be called the Radcliffe Prize in memory of that Dr. John Radcliffe who was so bright an ornament of the society in question and who gave so generously towards the funds thereof. This endowment from University College is one more instance of the desire lately shown by various colleges to do something to facilitate the study of medicine so far as their respective finances will allow. The University itself is poor but many of the colleges which may be called constituents of the University are rich, and such as can afford to do so help in many ways those members of the University who are not members of their own society. Research is perhaps more needed in the science of medicine than in any other, for in no other science are there more problems awaiting solution or problems the solution of which would more powerfully affect human happiness, and it is fitting that University College, which was traditionally founded by King Alfred, should try to increase the sum of human knowledge, for, as Alfred himself said, "Though we think upon many things, we have but little perfect understanding free from doubt."

SILVERED SILK SUTURES.

In the *Centralblatt für Chirurgie*, 1906, No. 35, Herr Witzel and Herr Wederhake describe the properties and the mode of preparation of silk sutures impregnated with silver. Silver wire is smooth, unabsorbable, non-absorbent, and easily sterilised, but its stiffness is disadvantageous. Silk impregnated with silver and afterwards treated with an antiseptic and made waterproof with caoutchouc is cheaply and easily prepared; it is one-third stronger than ordinary silk, it is flexible, antiseptic, easily sterilised, and non-absorbent. It is said, in a word, to combine the advantages of silk and silver wire without possessing their disadvantages. The silk is silvered in the following way. The silk is wound

on glass plates and soaked successively for 12 hours in ether, to remove fat, for 12 hours in absolute alcohol, and then for 20 minutes in a 10 per cent. solution of hydrogen peroxide. The silk is then transferred to the silver solution, which is prepared by precipitating a 1 per cent. solution of silver nitrate by the addition of sodium hydroxide and dissolving the washed precipitate with a minimum of ammonia solution. Next the suture is dried in an oven at 100° C., soaked in chloroform for two hours, and then in a 16 per cent. solution of caoutchouc for 12 hours. It is washed quickly in chloroform and dried, and finally the silvered silk is boiled for ten minutes in a 1 per cent. solution of mercuric chloride, and kept permanently in this solution. The suture requires to remain about one hour in the silver solution in order to become perfectly black, showing no white spots in transverse section.

THE LATE DR. ORONHYATEKHA.*

LIKE Hiawatha, the legendary saviour of his people, Dr. Oronhyatekha, whose death was recently reported at Georgia, prayed—

"Not for greater skill in hunting,
Not for greater craft in fishing,
Not for triumph in the battle,
Nor renown among the warriors,
But for profit of the people."

and in his nature formed a remarkable contrast to the general proclivities of the picturesque race to which he belonged. He was of the Mohawk tribe of the Six Nations and was born in 1841 on the tribal reserve near Brantford, Ontario. After receiving some elementary education under great difficulties he became a schoolmaster in his native reserve and subsequently entered Toronto University, where his intelligence and complete grasp of civilised life attracted the attention of his teachers. When the King, then Prince of Wales, visited Canada in 1860 Oronhyatekha was chosen by the chiefs of the Six Nations to present an address to his Royal Highness who, charmed with the intelligence and manner of the young Indian, offered to pay the expense of his further education at Oxford. The offer being accepted, the first, and probably the only, Red Indian Oxonian was placed under the care of Dr. Henry Acland, Regius Professor of Medicine, and on his return to Canada he entered the medical profession there and was well known as an excellent organiser. He was the first secretary of the Hastings County Medical Association and for the last 26 years of his life was Chief Supreme Ranger of the Independent Order of Foresters, a society in which he took a keen and active interest. Dr. Oronhyatekha married in 1863 a woman of his own blood, a great-grand-daughter of the chief Thayendaneagea who in his day was famous for his enlightened outlook upon life, his humanitarian qualities, and his loyalty of purpose. Dr. Oronhyatekha was a Freemason, an Orangeman, and a Good Templar. The son of the deceased Indian chief, William Acland Heywood Oronhyatekha, is an M.D. of Toronto University.

AN IMPROVED METHOD OF DETERMINING MORPHINE.

AN ingenious method of determining small or large quantities of morphine has been suggested by Mr. Thomas Tickle, F.I.O., in the *Pharmaceutical Journal* of Feb. 16th. It presents many points of originality and promises to be of value in toxicological examinations for morphine. The essential point in the process consists in the employment of metacresol in addition to amyl alcohol as a solvent of the alkaloid. Metacresol is a far better solvent of morphine than is amyl alcohol, but it is partly soluble in water, a difficulty which is surmounted by employing a mixture of these solvents in the proportion of 2 to 1. The outline of the process, full particulars of which

will be found in the original paper, is as follows: The alkaloid is liberated with sodium bicarbonate and agitated with a mixture of metacresol and amyl alcohol, and after observing certain precautions the alkaloid is extracted from the mixed solvents by agitation with acetic acid. The solution of morphine acetate obtained in this manner is placed in contact with the vapour of ammonia, whereby the alkaloid is deposited in a crystalline form. The crystals of morphine are then dried and weighed. This process is serviceable for dilute solutions of morphine and is especially useful in toxicological examinations, as the metacresol fixes and eliminates the albuminoid extractive material which often occasions considerable difficulty when working with the methods hitherto employed. The paper contains full experimental proof of the excellence of the method, showing its undoubted superiority over methods based on the use of amyl alcohol alone as a solvent which have hitherto given the best results.

THE MILK QUESTION IN NEW YORK.

THE *New York Medical Record* of Feb. 23rd states that the board of aldermen of that city has taken up the milk question and an ordinance has been proposed providing that all milk sold at retail shall be either sterilised or pasteurised, unless the milk has been bottled in dairies under the supervision of inspectors of the health department and each bottle bears the health department's seal placed on it by one of the department's inspectors. The milk question is arousing the attention of health authorities in many parts of the United States. In Illinois the State pure food authorities have found that only from 30 to 35 per cent. of the milk sold in the various towns of Illinois which they visited was in a satisfactory condition owing to defective sanitary arrangements in collecting and handling it. The lay papers of New York have been urging for some time that all milk furnished to the city should be pasteurised. The medical journals for the most part uphold the New York Health Commissioner in his contention that municipal pasteurisation is not nearly so effective a system for insuring an unpolluted milk-supply as is inspection of the sources of supply. The *New York Medical Record*, in a previous reference to the question in its issue of Feb. 16th, a leading article, points out that inspection alone would be insufficient owing to the fact that the New York milk-supply is drawn from some 30,000 farms scattered through several States, and that to inspect the milk at these farms properly a larger force of inspectors would be needed than the city would care to pay for. Inspection to be of real value must be fairly frequent and thorough. Therefore it is claimed that both inspection and pasteurisation should be employed. It is a healthy sign, at any rate, that in Great Britain and in the United States interest is being gradually excited in the quality of the milk-supply.

NATURAL INCREASE IN THE ENGLISH POPULATION.

THE persistent decline during the last 30 years, both in the birth-rate and death-rate in England and Wales, and the consequent result on the natural increase of the population, are dealt with in an interesting table in the recently issued annual report of the Registrar-General relating to the year 1905. The annual birth-rate, which was equal to 35.4 per 1000 in the five years 1878-80, showed a marked decline in each of the five succeeding quinquennial periods and had fallen to 23.1 in 1901-05. The effect on the population of this decline in the birth-rate was to a considerable extent counterbalanced by the persistent decline in the annual death-rate which steadily fell during the six five-year periods under notice, from 20.8 per 1000 in 1878-80, to 16.0 in 1901-05.

The average annual rate of natural increase of population, by excess of births over deaths, which was equal to 14.6 per 1000 in 1876-80, showed, however, a steady decline in the four following five-year periods to 11.6 in 1896-1900; but it recovered to 12.1 per 1000 in 1901-05, during which period the decline in the death-rate was proportionately greater than the decline in the birth-rate. The actual increase of the English population is, of course, influenced by the balance between immigration and emigration as well as by the balance between births and deaths; but the effect of this factor was so slight during the ten years 1891-1901 that the difference between the number of the population enumerated in 1901 and the estimate based solely on the excess of births over deaths in the ten years was only equal to 2.3 per 1000. Failing complete record of immigration and emigration, the estimate of the English population in the middle of 1905, adopted by the Registrar-General in his last annual report, is based on the assumption that the rate of increase that prevailed in the last intercensal period has since been maintained. The result of this estimate assumes that the loss to the English population between the date of the last census and the middle of 1905 by excess of emigration over immigration was 105,442, or nearly 25,000 per annum.

HAIR-BRUSHING BY MACHINERY.

THE machine brush, especially if it be driven by electrical means, is one of the proud acquisitions of the modern barber. It is commonly looked upon as a sign that the business of the hairdresser is conducted upon principles abreast of the times. A machine brush electrically propelled, together with some attempt at an aseptic or antiseptic practice in connexion with hair-cutting, shaving, and shampooing, serves to bring the proprietor of such an establishment into some sort of scientific reputation from the point of view of his patrons. Cleanliness is almost as great a *sine qua non* in the conduct of the affairs of a barber's shop as in that of the operating theatre, and therefore the man most deserves success who most endeavours to secure as far as possible the scientific cleanliness of his person and of the instruments used in his business. There is not wanting evidence that the barber's shop has been the means of spreading disease and it is not difficult to suggest the conditions under which such a distribution of pathogenic materials may take place. The sterilisation of razors, combs, brushes, and the hands of the operator may, however, avail much but it is conceivable that the good which this may do may be undone by the revolving brush scattering dust, scurf and so forth from the dry scalp. Thus all the care taken to insure antiseptic conditions may be negated by the whirlwind of particulate matters raised by the machine brush. It should be remembered that the function of the machine brush is not to dress or to arrange the hair but merely to drive out dust and hair-cuttings. The hand brush, of course, plays quite another part; it is used to adjust the hair and very frequently during this process the hair is wetted or oil is applied to it. It is a pity that the machine brush presents this objectionable feature, for apart from its usefulness as a remover of dust and hair clippings it undoubtedly exercises a healthy stimulus to the scalp and may even promote, when reasonably used, the nutrition of the hair. For these reasons the apparatus finds a wide circle of patrons. To preach its abolition may be justifiable on strictly hygienic grounds, but that would mean the banishment of a really useful, if not indispensable, instrument connected with the dressing and treatment of the hair. Its application would be rendered futile by moistening the hair and so the suggestion remains that the objection might be met, perhaps, by conducting the machine-brushing operation in such a manner that dust,

hairs, and scurf would be directed, for the most part, up an exhaust ventilating shaft situated immediately opposite the head of the person who is under operation. Such a measure, too, would secure a supply of fresh air in general in the room.

EPIDEMIC CEREBRO-SPINAL FEVER.

DURING the last six or seven days epidemic cerebro-spinal fever has made its appearance in several fresh localities. In London on March 7th an inquest was held on a girl, aged five months, who had died at Kensal Rise. The medical evidence was to the effect that death was due to cerebro-spinal meningitis and the jury returned a verdict accordingly. The medical officer of health of Poplar reported on March 7th that a fatal case had occurred on the Isle of Dogs. Cases are also said to have occurred at Wealdstone, near Harrow, Middlesex, at Langley Green, near Oldbury, Worcestershire, at the village of Elson in Shropshire, and at Warrington. An alleged case in St. Helens, near Liverpool, was at the necropsy found to be tuberculous meningitis. Two fatal cases are reported from Liverpool. In Glasgow the daily announcement of the cases notified and the deaths has been discontinued since March 4th and in future only a weekly official report will be issued on Fridays. The report for March 8th stated that only 101 cases were under observation. There had then been notified in Glasgow a total of 340 cases with 174 deaths. Since the beginning of March there have been eight or nine deaths from the disease in Leith. In Greenock three patients have recovered and three remain in the hospital. In Paisley there have been 13 cases with nine deaths, and in Govan a total of 26 cases with 14 deaths. In Dundee there have been several cases, some of which are described on p. 739 of our present issue, and there has been a case in Dunfermline. In Belfast nine fresh cases and one death were announced on March 12th. There had then been in that city a total of 177 cases and 96 deaths. In Dublin there has been a total of nine deaths but no fresh case has been notified since March 5th.

THE THERAPEUTIC VALUE OF CACTUS GRANDIFLORUS.

THE therapeutic value of *Cactus grandiflorus*, the night-blooming cereus, in functional disorders of the heart has been considered by some physicians to be such as to warrant the inclusion of the drug in the current edition of the United States Pharmacopœia. The subcommittee on pharmacognosy investigated the question and its results have been published by Professor L. E. Sayre in a recent number of the *Therapeutic Gazette* (1906, No. 12, pp. 812-16). It was found difficult to obtain a supply of trustworthy material, as the greenhouse varieties were not considered to be of value and the plants growing wild in tropical countries occur in many species and varieties. Alcoholic tinctures were made from the fresh stems of authentic material and examined physiologically, with the result that the action of the drug on the heart was found to be slight and uncertain, if not practically nil, as shown by tracings taken from the right ventricle and carotid artery of dogs anaesthetised by chloroform and morphine. The subcommittee came to the conclusion that the drug should not be made official, as it is difficult to obtain and to identify; moreover, it rapidly deteriorates, owing to the presence of an enormous quantity of water, 95 per cent., in the fresh stem, together with mucilage and other easily decomposed bodies. No alkaloid or other definite principle has yet been discovered in the drug; indeed, if one be present there is reason to suppose that its percentage yield would be remarkably low, amounting to no more than 0.00078 in the tincture. For the present, therefore,

the therapeutic value of *Cactus grandiflorus* is open to considerable doubt, in spite of many favourable opinions expressed by clinicians.

THE Department of Public Health of Queensland in a bulletin dated Jan. 28th states that 6 more cases of plague had occurred and been notified. Of these (the numbering follows the cases reported in the bulletin of Jan. 19th) Case 10, a boy, aged 14 years, was removed to hospital on Jan. 20th and died on the 25th. Case 11, a woman, aged 75 years, was the grandmother of Case 10 and had been nursing him. She was attacked on Jan. 19th and died on the 21st, being too ill to be moved to hospital. Case 12, a boy, aged eight years, was attacked on Jan. 19th, and the case was only reported after death. Cases 13 and 14 respectively, a boy aged eight years and a girl aged nine years, came, as did all the other cases, from the New Farm infected area and had been in constant association with the other cases reported. The boy was attacked on Jan. 19th and the girl on Jan. 23rd. Case 15, a male, aged 40 years, was the father of Cases 6 and 7. He was attacked on Jan. 22nd. A plan is attached to the bulletin showed that the outbreak is a typical example of local infection. All the cases are associated with the general and produce stores known as Garnett's, in James-street, New Farm. Dead rats were found in and near these stores previously to the outbreak and all the boys had been playing recently in the stores. With regard to Cases 8 and 9 (the suspect cases) they are convalescent. Bacteriological investigation was negative in both. With regard to Port Douglas, 31 cases have been reported and 1 has proved fatal. They all come from a sugar mill eight miles outside the town.

AN ordinary meeting of the Royal Meteorological Society will be held at the Institution of Civil Engineers, Great George-street, Westminster, S.W., on Wednesday, March 20th, at 7.30 P.M., when a lecture will be delivered on the Exploration of the Air, by Major B. F. S. Baden-Powell. The lecture will be illustrated by models and lantern-slides. The annual dinner will be held at the Trocadero Restaurant, Piccadilly-circus, W., on Tuesday, June 18th, at 7 P.M.

A MEETING will be held at the Mansion House on Wednesday, March 20th, at 3 P.M., with the permission of the Lord Mayor, to promote the interests of the Second International Congress on School Hygiene to be held in London in August next. The following are announced as speakers: Sir Lauder Brunton, Sir John Cockburn, Dr. T. J. Macnamara, M.P., Sir Richard Martin, and Sir Edward Brabrook.

Dr. L. E. Hill and Dr. H. A. Caley have been nominated as candidates for the two vacancies upon the Senate of the University of London. The election will resolve itself into a contest between those who do and those who do not believe in the necessity for the erection and foundation of an Institute of Medical Sciences in connexion with the University of London.

THE death is announced, on March 10th, at Bournemouth, of Dr. A. E. Sansom, consulting physician to the London Hospital. Dr. Sansom had written much upon diseases of the heart. We hope to give details of his career in a future issue.

A PAPER by Mr. Noel A. Humphreys, I.S.O., entitled "The Alleged Increase of Insanity," will be read before the Royal Statistical Society at 9, Adelphi Terrace, Strand, London, W.C., on Tuesday, March 19th, at 5 P.M.

THE RÔLE OF THE BLOOD PLASMA IN DISEASE.

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IV.¹

INFLUENCE OF THE PLASMIC ENVIRONMENT ON THE DEVELOPMENT OF THE ORGANISM.

THE fact that the evolution of the individual cell is so greatly under the control of its environment prepares us for the conclusion that the development of the organism as a whole is in great measure determined by the environmental influences operating on its constituent cells and by no means solely by a developmental impulse inherent in these cells. How far this is true of embryonic development cannot here be discussed, but that it is true of post-partum life there can be no shadow of doubt. It is safe to predict that were the individual cell environments to remain, during the entire post-partum life, the same as on the last day of intra-uterine life—were the plasmic environment to remain the same, the nervous system never to be stimulated by external agencies, nor the muscle and gland cells energised through their nerves—supposing life were possible under such conditions, it is, I say, safe to predict that little or no development would take place. Growth there would doubtless be, but it would be growth without development—a mere magnification of the infantile type; some glimmering of mind there might evolve, but the mental personality would be built up of visceral sensations alone, rising to no higher level than that of the proverbial oyster.

The structural changes which characterise the various stages in the vital cycle—infancy, childhood, puberty, adolescence, maturity, and old age—are all in large measure determined by the plasma, as also are the changes which take place in the pregnant woman. The composition of the plasma varies with each of these vital stages. As each is reached a particular spring is as it were touched, and the plasma changed in such wise as to induce the structural changes characteristic of the stage attained; during the developmental period the tissues are urged by specific plasmic stimuli to develop along definite lines, in the absence of which stimuli they tend to remain *in statu quo*; while in the final stage they suffer senile decay not so much because they wear out as because decay is deliberately thrust upon them by specific plasmic influences, which thus check that tendency to corporeal immortality which is innate in all living things, and set a definite term to the length of life: the organism commits, in fact, slow suicide through the plasma.² That the various stages of post-partum development are brought about by specific plasmic stimuli is proved by the fact that development may cease at any one of them, if the needed hormonal stimulus be wanting, and by the further fact that in some cases, at all events, it may be made to proceed normally by supplying the plasma with the ingredient which it lacks. Thus in certain cases of infantilism the administration of pancreatic extract is known to have this remarkable influence, and there can be little doubt that the pancreatic hormone which produces this effect is only one among many similar hormones operating during early life. Absence of the thyroid implies, as we know, impeded development, which can to some extent be advanced by the administration of thyroid extract, and the fact that the thymus gland atrophies soon after birth strongly suggests that it also plays a necessary part in development, especially during its earlier phases. Its persistence in cases of Graves's disease is of interest in this connexion.

The influence of the plasma on development is also shown by the phenomena of puberty. It is now known that the secondary sexual characters, both mental and physical, are induced by the presence in the blood of specific hormones derived from the ovaries and testes. Possibly these or kindred hormones begin to be formed in small quantities quite early in life and are responsible for such secondary sexual characters as are observed before puberty, for the boy

¹ Articles I., II., and III. were published in THE LANCET of Feb. 2nd (p. 313), 9th (p. 375), and 23rd (p. 535), 1907, respectively.

² I have elsewhere given my reasons for concluding that senility is essentially a process of slow suicide, committed through the medium of the plasma. See THE LANCET of August 5th, 1905, p. 403.

and the girl show mental and physical differences from quite an early age. When, however, puberty is reached the ovaries and testes are stirred—how we know not, but possibly through the instrumentality of the adrenal glands, the cortical portions of which have been found to be hypertrophied in cases of premature puberty—into increased activity, and begin to pour their hormones plentifully into the blood. As a result of this the entire organism is stirred to its depths; the metabolism of its every cell is altered, development is pushed forward along specific lines, the bodily conformation changes, new feelings arise, and the individual looks out upon the world with altogether other eyes. And all this at the prompting of a subtle essence yielded by two small glands. Surely no magic spell of fable ever wrought change more wonderful.

This mechanism generally becomes effective at about the fourteenth year, but sometimes it comes into premature operation, as early, it may be, as the second year, as in a patient of my own; sometimes, on the other hand, its action may be delayed for a few years, or even remain in permanent abeyance.

Among the hormones which determine growth and development must be reckoned those which are formed in connection with menstruation and pregnancy. Menstruation, as Marshall and Jolly have shown, is excited by an ovarian hormone; and these observers have also demonstrated that the uterine changes which bring about the fixation of the impregnated ovum are likewise induced by an ovarian hormone, apparently derived from the corpus luteum, which, as is well known, undergoes considerable enlargement during the first three months of pregnancy. The remarkable transformation which the pregnant woman undergoes is due, wholly or in part, to the absorption of foetal hormones. Among the changes thus brought about is the active mammary development, as the striking experiments of Starling and Lane-Clayton have so admirably demonstrated. The metabolic changes induced by the alteration which the plasma of the menstruating and pregnant woman undergoes, interesting and important though they be, are too numerous to be entered into here. I will merely refer to the influence of pregnancy in removing anæmia and improving nutrition. I have seen a slender anæmic girl increase so rapidly in weight during the first three months of pregnancy that her friends have failed to recognise her in the street.

In order that we may fully appreciate the influence of the plasma on development it is necessary to take due account of the fact, already insisted on, that every new form of functional activity is attended by structural change, and when we consider the many successive changes which the plasma undergoes during the years of development, and the numerous new forms of activity which are in this way called forth, we are better able to realise how it is that the plasma comes to influence development so profoundly. Nor does the influence of the plasma in determining the normal vital cycle end with the attainment of maturity: it continues throughout life; and just as the changes which this fluid undergoes before maturity determine in large measure the developmental changes which lead up to that epoch, so do the plasmic changes which take place during maturity and senescence largely determine the structural changes which then occur. Even during the stage of maturity the individual does not remain stationary; each day he grows structurally older; each day he makes some advance towards senility. With the exception of the highest nerve centres which may continue to evolve some time after the tissues in general have matured, these changes are for the most part in the direction of degeneration, and such degenerative changes are due, not so much to a wearing out of the cells of the body, or to an innate tendency to degeneration at a certain period of their career, as to specific agencies operating on them through the plasma. These agencies probably begin their work of destruction soon after maturity is reached, remaining, however, in partial abeyance until the age of 60, or thereabouts, when they may come into more active operation; and just as puberty may begin prematurely or postmaturely, according to the time at which the plasma becomes pubescent, so may senile degeneration occur earlier or later, according to the time at which it grows senescent. On the one hand senility may begin in childhood, with the characteristic phenomena of blanching of the hair, wrinkling of the skin, and hardening of the arteries; and, on the other hand, it may be delayed, even as late as the ninth decade, as in the case of one of my patients who in many respects is as young as the average man of 50.

In those who live to a great age senility generally comes on late and advances slowly. When it begins early it is apt to appear suddenly and to advance rapidly.

We do not yet know what constitute the special characteristics of senile plasma. It is probable that most of the plasmic constituents undergo some alteration with advancing years, but there are good grounds for concluding that the most characteristic changes, and those having the greatest influence in producing senile degeneration, pertain to the hormones. What causes these hormonal changes has yet to be discovered; it seems not improbable that they result in large measure from atrophy of certain hormone-yielding tissues, such as the thyroid. Such an assumption must not be taken to imply, as some might argue, that senility is, after all, due in the last resort to a primary atrophy, or decay, of some part of the organism; it is not necessary that the assumed atrophy should be a primary one; it might occur secondarily to some specific environmental influence. The atrophy of the thymus gland at an early period of life is assuredly not due to senile decay of its component cells; it is comparable to the atrophy and disappearance of other foetal structures and is evidently due to some such process as vascular shrinkage, or the presence in the blood of a substance destructive to the cells of the gland—at any rate, to an environmental influence of some kind; and it would be possible for the atrophy of the thyroid gland, which we have assumed to be one of the causes of senile degeneration, to be induced in a similar way. In short, the process which starts senile degeneration need not of itself be of a primary, spontaneous, degenerative kind. It is, indeed, possible for heightened functional activity in one tissue to set up degenerative changes in others; thus it has been shown that atheroma may be induced in rabbits by injecting them with adrenalin, and it is conceivable that that heightened activity of the adrenal glands may be one of the causes of atheroma—that such heightened activity may constitute, in fact, one of the mechanisms by which senility is induced. Be this as it may, the phenomenon of experimental atheroma clearly shows that senile degeneration may be initiated in other ways than by a wearing out, or spontaneous decay.

I have said that the changes which in due course take place in the hormonal constituents of the plasma may be partly responsible for senile decay, but it must not be thought that the plasmic changes which senile blood undergoes and which induce the degenerations characteristic of senility are simple in nature. Like the kindred changes which occur during, and which are largely responsible for, development, they are of a highly complex kind. We must remember that any alteration in plasmic composition leads to modified metabolism, that this modified metabolism itself reacts on the composition of the plasma, that this plasmic alteration again causes a further modification of metabolism, and so on indefinitely. In this way the plasma is prevented from remaining stationary in composition, and is made to undergo a series of changes which are continually bringing new forms of activity into operation, with their attendant structural changes; those structural changes which accompany the new activities excited by the successive plasmic changes occurring during developmental life being evolutionary, and those which attend the activities excited by the successive changes which senile blood undergoes dissolutionary.

THE PART PLAYED BY THE PLASMA IN DETERMINING THE ANATOMICAL CHARACTERISTICS OF RACE.

I have already pointed out that the composition of the plasma is peculiar for each race, and since plasma influences structure we are now confronted with the question whether the anatomical characteristics of race may not in some measure be due to racial differences in plasmic composition. That many undiscoverable differences are thus induced is certain, as also others more obvious—e.g., the tendency to leanness or obesity, but the question arises whether some of the more obtrusive anatomical features of race may not have a similar origin. Many considerations suggest that they may. Consider, for example, the effect of disease in rendering individuals alike. We may place two men suffering from the same disease side by side, and though they may never have seen each other before they might be taken for brothers. This likeness between individuals suffering from the same disease may be observed almost every day in the case of such diseases as granular kidney, myxœdema, paralysis agitans, and acromegaly, in each of which the individual is moulded

—and perhaps even tinted—in a peculiar way by a peculiar condition of plasma. Acromegaly is especially interesting in this connexion on account of the remarkable anatomical changes which take place in it. Possibly the condition of the plasma inducing them is connected with the hormonal function of the pituitary body, but whether or not such is the case, it is certain that the changes in question are induced through the plasma, for there is no other medium through which they can be brought about. I have in another place³ attempted to show that most of the anatomical features of this disease are to be observed in the anthropoid apes, and that the acromegalous man resembles the latter in the following particulars:—“The possession of cranial crests, huge supra-orbital ridges, prominent molars, long nasal bones, massive prognathic jaws, and greatly developed cranial sinuses; in the prominence of the eyes, wrinkling of the lids, furlrowing of the forehead, breadth and fleshiness of the nose, thickness of the lips, shape of the ears; in the shortness and thickness of the neck; in the forward bend of the spine and consequent stoop; in the straightness of the sacrum and coccyx and length of the cervico-dorsal spinal processes; in the shape of the thorax, sternum, and pelvis; in the formation of the hands and feet, especially as regards the existence of pads, separated by deep furrows, on the palms and soles, and in the longitudinal striation of the nails; in the bowing of the legs, the massiveness of the skeleton generally, and the great development of the muscular system, especially of certain muscles—to wit, the trapezius and tensor vaginæ femoris; in the coarseness and looseness of the skin, the excessive growth of hairs, and the tendency to pigmentation; in the scanty adipose deposit in the mammae, and the great size of the clitoris; in the depth of the voice, the abdominal character of the breathing, the great susceptibility to cold, the excessive activity of the cutaneous glands, and the keenness of the sense of smell.”⁴

INFLUENCE OF THE PLASMIC ENVIRONMENT IN CAUSING DISSOLUTION.

We have next to consider the influence of the plasmic environment in causing structural dissolution other than that due to spontaneous senile degeneration of the cell. In so doing I shall again refer to the individual cells rather than to the tissues which they form, but it is obvious that when several of the cells constituting a tissue degenerate we have to do with tissue as well as cell degeneration. It is necessary to observe here that the degenerations cover a much wider field than those discoverable by the microscope. It is only when the dissolution has advanced to a certain depth, as when, for example, the dendrites of a neuron or the transverse striæ of a muscle fibre have disappeared, that its existence can be demonstrated by the microscope, but it must not be forgotten that such *obvious dissolution is always preceded by undiscoverable dissolution, of which there are many stages, at any one of which the degenerative process may stop, and the existence of which has to be sought for in the functional sphere.* All organic diseases are, in fact, preceded by a phase—shorter or longer in duration—which may be described as “functional” in the sense that the cell dissolution underlying it cannot be microscopically demonstrated. This may be observed in the early stages of such diseases as tabes dorsalis and progressive muscular atrophy. Sometimes, indeed, a disease proceeds to a fatal termination without any lesion being discoverable post mortem to account for it, as may happen in myasthenia gravis; just as, contrariwise, marked structural degenerations, for example, in the brain, may often be observed post mortem without having given evidence of their presence during life.

In tracing the vital cycle of an individual cell, as exemplified by the neuron, we saw reason to believe that it rarely degenerates spontaneously—i.e., independently of specific environmental influence, and that even senile degeneration and such disorders as the family palsies, in which the case for spontaneous degeneration is *primâ facie* so strong, may be largely extrinsic in origin. Certain cells of the body normally degenerate and die after a given term

of existence, their place being taken by other similar cells. Such is the case with the chromocytes and some gland cells, and also, according to Pavy, with the lymphocytes which he believes to play an important part in the conveyance of protoid and carbohydrate from the intestines to the tissues.⁵ How far such degeneration occurs spontaneously, and how far as the result of extrinsic causes, is not easy to determine, though what has recently come to light regarding pathological hæmatolysins makes one wonder whether the normal decay of chromocytes may not be due to the action of physiological hæmatolysins—i.e., to the operation of an extrinsic agency. Excluding, however, such possible instances of spontaneous dissolution and those of genuine senile degeneration (in which some degree of inherent causation may be admitted), we may say that *degeneration never occurs spontaneously in a normally evolved cell.* I say in a “normally evolved” cell. One which has not evolved normally—the evolution of which, that is, has either stopped short of the normal goal or proceeded on abnormal lines—is doubtless predisposed to degeneration and may conceivably degenerate spontaneously—i.e., even though it be subjected to normal environmental influences. But it has to be remembered that defective cell evolution is itself often due to environmental fault, and if a cell the normal evolution of which has been thus prevented should subsequently degenerate, even though normally environed, we should not be justified in altogether exonerating the environment from a share in the causation of that degeneration. Whenever, therefore, we meet with cell degeneration we must—with the reservation given—conclude either that its environment is faulty or that it has not undergone normal evolution. Now often our only means of ascertaining during life whether a cell or system of cells has or has not evolved normally is by reference to functional activity; we must, namely, regard functional efficiency as the chief indication of structural efficiency. If, therefore, a system of cells—e.g., neurons in the case of Friedreich's disease or muscle cells in the case of amyotrophies—has for years carried on its functions aright, one may legitimately doubt whether the cells are structurally defective or, at least, whether they are themselves wholly responsible for the premature degeneration which they undergo.

In this connexion I may refer to the observations of Sir William Gowers on what he terms abiotrophy, i.e., a primary cell-atrophy due to an inherent weakness of zygotic origin. Among the instances he adduces are: (a) the baldness which so frequently comes on in men after adult life, a form of atrophy he attributes to a primary “failure of vitality in the follicles”; (b) the idiopathic muscular atrophies, in which he assumes “a defect of vital endurance”; (c) a rare form of atrophy of the spinal motor neurons, which commences about the end of the first year of life; (d) those family palsies which result from degeneration in the pyramidal tracts; (e) those other family palsies in which the posterior and lateral columns degenerate (Friedreich's disease); (f) cases of optic atrophy in which several members of the same family go blind; and (g) cases of progressive muscular atrophy and bulbar paralysis which “often come on without apparent cause simply because the term of life for these structures is reached sooner than for the vital organs.”⁶

Now I admit that these cases are among the most likely instances of genuine spontaneous cell atrophy, but I am not satisfied that even they are wholly spontaneous and to be explained by assuming an inherent lack of cell vitality. The atrophy of the hair follicles which causes ordinary crown baldness in men is surely secondary—the result, i.e., of defect in the local plasmic supply, due to strangulation of the scalp vessels by pressure of the hard-rimmed hat against the resisting skull; and as regards the neural atrophies Sir William Gowers himself admits some degree of plasmic causation in certain of them—e.g., the optic atrophy which may be initiated by tobacco poisoning. The more one reflects upon the potency of the plasma to pick out, and initiate degeneration in, definite groups of cells, the less need does there appear to assume the existence of primary cell degeneration.

The environmental influences capable of causing degeneration may, like those involved in evolution, be classed under two heads—the plasmic and the non-plasmic. Regarding the latter it will suffice to recall the

³ The Scalpel, 1896.
⁴ Do not these resemblances suggest that in acromegaly the blood takes on some characters belonging to that of man's anthropoid ancestors? Be this as it may, we have in it a disease in which not only the soft parts but the very bones are profoundly altered, and there can be no doubt that acromegalic changes may occur within physiological limits. One not infrequently sees perfectly normal individuals with massive features, prominent supra-orbital ridges, heavy mandible, large hands and feet, deep voice, and other acromegalic characters.

⁵ On Carbohydrate Metabolism, 1906.

⁶ Lectures on Diseases of the Nervous System, second series, 1904 p. 96 et seq.

fact, already insisted on, that most of the cells in the body—all the neurons and muscle cells and probably many of the gland cells also—need for their normal vitality, the continual influx of nerve impulses, any interference with which tends to cause them to degenerate. With regard to the plasmic influences the conditions of the plasma capable of setting up degeneration pertain (1) to defective composition; and (2) to defective circulation.

1. *Degeneration from defective composition of the plasma.*—The varieties of morbid plasma which may cause degeneration are innumerable, and when we reflect that each variety affects the tissues in a way peculiar to itself, that every form of disturbed activity thus resulting is, according to the principle already laid down, attended by a structural change, and that such structural change must necessarily be of a degenerative kind, it follows that the degenerations are not, as we are wont to think, limited to the few forms, such as the fatty and the amyloid, which are easily identifiable, but that they must be well-nigh as numerous as the varieties of morbid plasma causing them.

It is not possible in this place to do more than touch very briefly on the subject of plasmically induced degenerations. Regarding those arising from defects in the nutrient ingredients of the plasma we know little. Starvation, leading as it does to impoverishment of the plasma, produces atrophy which may proceed to fatty degeneration; excess of sugar in the blood (or some morbid state of the plasma attendant upon that excess) may cause degeneration, as shown, e.g., by the frequent occurrence of cataract in diabetes; deficiency of hæmoglobin predisposes to fatty degeneration; and other kinds of degeneration, including sclerosis of the spinal cord, are also met with in the graver forms of anæmia, though how far they are due to the anæmia and how far to the associated toxæmia we cannot at present say.

That defects relating to the hormonal constituents of the plasma may cause degeneration is shown by the tissue changes met with in such diseases as myxœdema and acromegaly, and by the occurrence of atheroma in animals as the result of injecting adrenalin. As yet, however, we know but little regarding the nature of the degenerations arising from this cause. But by far the most important among the innumerable defects of the plasma capable of setting up degeneration are those pertaining to its excretory constituents—i.e., substances which, be they normal or abnormal constituents of the blood, demand elimination. Some of these excreta may—at all events when kept within proper limits—be innocuous; when, however, any of them interfere in the slightest degree with the normal vitality of the cell they must be regarded as poisons and as producing some degree of degeneration. This is true of all the poisonous excreta, whether products of normal metabolism occurring in poisonous quantities, poisons formed as the result of morbid metabolism, poisons (e.g., drugs) introduced from without, or, finally, the endless varieties of bacterial poisons. As instances of degeneration from one or other of these classes of poisons we may cite the peripheral neuritis of diabetes, the fatty degeneration of metallic poisoning, and the Zenke's degeneration of typhoid fever. The truth that in the process of cell degeneration dissolution may proceed to any conceivable depth, down to the absolute destruction of the cell, is well illustrated by the action of these various poisons. Sometimes the dissolution they produce is so slight as to be undiscoverable; at other times it results in gross structural change; sometimes it takes many years for the poison to produce such change; in other cases its action may be so virulent as to destroy the cell within a few days. In this latter case we speak of the poison as a cytolytic or cell dissolver, but one may well question whether there is any essential difference between the action of such a poison and one which takes a long time to produce gross change, between the most virulent cytolytic causing rapid solution of the cell and the blandest poison serving but temporarily to disturb its functions.

The production of cytolytics is one of the many marvels of antibody formation; it is found, for example, that if the renal cells of one kind of animal are injected into another kind of animal the plasma of the latter may acquire the property of destroying the renal cells of the former; and similarly in regard to spermatozoa, hepatic, and other cells. Whence the question arises whether kindred substances may not be formed in, or gain entrance to, the animal body, either as the result of morbid metabolism or microbic agency. There

is at present no evidence that the organism is capable of developing cytotoxins as the result of the disintegration and absorption of its own parenchymatous cells.¹ Be this as it may, it is certain that, whenever a certain type of cell is picked out, to the exclusion of other cells, and rapidly destroyed, it must be from the action of some such substance. It does not seem possible, however, to distinguish sharply between such highly virulent poisons and those causing more gradual destruction. It appears to be more convenient to group all the poisons capable of effecting cell destruction under one head, and to arrange them according to the rate at which they accomplish the destruction. Such a procedure enables us to group together a large number of widely divergent affections, some of which may now be considered.

Acute yellow atrophy of the liver is certainly caused by a chemical substance having a destructive action on the liver cells. But this disease is not the only one in which epithelial cells undergo rapid degeneration; the same thing may happen with other glands—e.g., the pancreas—when we must assume the operation of some substance which has a selective action on the pancreatic cells. In other cases—e.g., granular kidney—the epithelial degeneration is more gradual, and, as already observed, the difference between poisons producing such gradual destruction and the more virulent cytolytics is one of degree only.

The symmetrical degenerations of the nervous system are produced by the action of similar poisons. It is indeed probable that, excluding perhaps the primary senile degenerations and certain of Sir William Gowers's abiotrophies, all the so-called primary degenerations of the nervous system are plasmically induced. Sometimes the poison causes rapid destruction of the neurons, as in infantile paralysis, while in other cases—e.g., tabes dorsalis—years may elapse before the affected neurons are completely destroyed.

Among the degenerative changes which result from poisoned plasma are those which occur secondarily to inflammation, such as gangrene, abscess, and fibrosis. How large a part inflammation occupies in the domain of disease is well shown by a cursory reference to any text-book on medicine, in which a large proportion of the space will be found devoted to a description of inflammatory affections, including, amongst many others, bronchitis, pleurisy, pneumonia, pericarditis, gastritis, enteritis, appendicitis, neuritis, myelitis, encephalitis, and nephritis. Now, poisoned plasma is *par excellence* the cause of inflammation; it may, indeed, for all practical purposes be regarded as the sole cause of it, although there may be other contributory factors at work, such as the lowered vitality resulting from sluggish circulation or disturbed nervous action. Many different kinds of blood poisoning may set up inflammation, but the most common are those due to bacterial agency; indeed, the essential purport of inflammation is the destruction of the bacteria, which by the poisons they engender give rise to it. When inflammation occurs independently of bacterial agency, as in gouty bronchitis or the pleurisy of Bright's disease, may it not be because the tissues falsely attribute, as it were, the poisons to a bacterial source?

2. *Degeneration from defective circulation of the plasma.*—Defective circulation of the plasma may be due to central or to local causes. The former include failure of the central pump, and of pulmonary suction which steadily diminishes with advancing years and is therefore largely responsible for the sluggish circulation of the aged. Among the local causes may be mentioned arterial spasm, as in Raynaud's disease, rigidity, narrowing, and blocking of the vessels, inflammation, and disuse leading to lowered functional activity. A good instance of this latter is afforded by the fatty degeneration which takes place in disused muscles: rhythmic contraction of a muscle greatly accelerates the local circulation of blood and lymph, causing the individual muscle cells to be flushed with plasma; on the other hand, when a muscle is at rest the plasma tends to stagnate, and it is not surprising that in these circumstances the muscle fibres should degenerate, the more so that they lack their wonted nerve stimuli.

When a cell is entirely bereft of its plasmic supply it disintegrates and dies, as in the case of the cells poured out into the alveoli in pneumonia, or those forming the contents of an abscess cavity. When, however, the supply of plasma is not entirely cut off but is merely deficient, the cells may

¹ See "Collected Studies of Immunity," by Professor Paul Ehrlich. Translated by Dr. Ch. Boldman. New York, 1906, p. 383.

go on living, for a time at least, but the more highly complex of them tend to degenerate, the amount of degeneration among the different types being in direct proportion to their structural complexity; there takes place, in fact, a struggle for existence among the cells, the more lowly, such as those belonging to the connective tissue, surviving at the expense of the more highly endowed, such as the neurons and the gland cells. This truth is well exemplified by the structural changes observed in passive congestion and in the aged. Chronic passive congestion, as from mitral disease, leads to "brown induration" of the heart, lungs, liver (nutmeg), and other organs and tissues. The tissue plasma in this condition not only stagnates but is altered in composition, owing to the fact that the nutrition of the capillary wall suffers from the sluggishness of the capillary circulation, and this interferes with the proper exudation of the lymph. This altered state of the capillary wall, moreover, allows the formed elements of the blood to pass out in undue quantity. The effect of all this is to cause a considerable alteration in the environment of the individual cells of the tissues, in consequence of which the more highly endowed cells degenerate, some of them dying outright, while the connective tissue hypertrophies, in this way causing considerable induration of the part. Much the same kind of thing happens in the tissues of the aged in whom the plasma is both poor in quality and sluggish in movement. Owing to the unfavourable conditions of nutrition resulting the inferior tissue elements thrive at the expense of the superior; muscle, gland, and nerve cells atrophy and decay and are replaced by the harder connective tissue elements. Hence the tissues lose the softness and succulence of youth.

The time factor in environmental moulding.—In considering the influence of the environment in moulding structure we have to take into consideration the factor of time. Its influence may be thus stated. The longer the moulding agency is in operation the more likely is the resulting structural change to endure—the less likely, i.e., is the cell to revert to the *status quo ante* upon cessation of the moulding influence. This is true both of (a) the changes which are undiscoverable by the microscope and manifest themselves in the functional sphere alone; and (b) of the grosser discoverable changes.

(a) As an instance of undiscoverable modification of cell structure wrought through the environment, that which underlies psychic memory may be cited—e.g., the memory of sounds; the more frequently a tune is heard the better it is remembered, the more enduring, i.e., is the undiscoverable structural change underlying the memory of it. The same truth is exemplified in the case of nervous habits, vicious or otherwise—e.g., the longer a habit spasm persists the more tenacious does it become, the underlying structural basis becoming with every repetition of the habit more and more ingrained. The like is also true of all the functional nervous disorders; thus it is probable that every additional epileptic fit tends to increase the liability to recurrence. And not only nervous but non-nervous habits also tend to get fixed by repetition. When, e.g., through the operation of a specific environmental influence upon it the metabolism of a gland cell has been modified in a certain way, it tends to go on metabolising in the same way after the removal of that influence, and the tendency to do so will be the greater the longer the specific influence has been in operation. It is clear that the basis of this altered metabolic habit is an undiscoverable structural change wrought through the cell environment.

(b) As might be expected, structural alterations sufficiently pronounced to be visible are, as a rule, more likely to persist upon withdrawal of the moulding agency than are undiscoverable changes of structure. The longer the noxious agency has been in operation the more pronounced will the resulting structural change be, and the less the tendency to recovery upon cessation of the noxious influence. This truth is well exemplified in the case of the structural change induced by inflammation. In the slighter and transient forms complete recovery may ensue, the inflamed tissue reverting to the *status quo ante*, but in protracted inflammation, no matter how slight, some permanent structural change is always left.

Though gross structural change in a cell is apt to be permanent, it is surprising to what an extent it may be recovered from. Thus granular, fatty, amyloid, and Zenke's degeneration may all be recovered from, the tendency to recovery being in inverse proportion to the length of time

which the noxious environment causing it has been in operation. Nerve cells may recover from a considerable degree of gross structural change. Thus a nerve cell in which chromatolysis has occurred (e.g., in strychnine poisoning, botulism, or pellagra) may recover entirely; so also may one which has undergone the profound degenerative changes met with in such an affection as diphtheritic neuritis. This is remarkable in view of the extraordinary permanence of those undiscoverable alterations in neuron structure which underlie memory. Not only may these structural changes be far more indelible than the gross structural changes referred to, but they may actually persist in a cell which has undergone gross structural change. Thus, to take a single example, an individual who has recovered from a severe encephalitis may retain the memory of an object seen but once many years before: the single presentation of the object to his organs of vision has left in the cortical cells an impression which has not been effaced by the gross structural changes wrought in the cortex by encephalitis, an impression, too, which has persisted long after those gross changes have disappeared. In respect of this kind of undiscoverable structure nerve cells, indeed, like sex cells, display an extraordinary tenacity, one which may actually resist the influence of environmental agencies capable of effecting gross structural changes in them.

The time factor, then, applies both to discoverable and undiscoverable mouldings. It is necessary to keep this truth in mind in considering the influence of the individual cell environments on growth, development, and decay. The specific plasmic influences which operate upon the component cells of the organism and play such a large part in determining normal development, as well as senile decay, last for years, and the structural changes which they induce are correspondingly deep and enduring. Morbid influences, too, may likewise extend over a long period and produce lasting structural perversions, and if this happens during the years of development it will produce an evil effect which no amount of after care will efface. A delicate boy, though he may under favourable circumstances "grow up into a strong man," cannot attain to that standard which a healthy childman would have rendered possible. Long years of delicacy during the epoch of development inevitably leave an evil impress. These considerations emphasise the importance of impress, promptly checking any morbid environmental influence, plasmic or other, that may be present. It is important to do this at all stages of life, but especially during the developmental period. It is not a matter of indifference whether the error be rectified now or some time hence; we should, if possible, correct it at once, so that no vicious impress be left upon the organism. The principle of *principiis obsta* is an important one for the physician.

We are, I think, too apt to overlook the permanent evil which may result from the less malignant forms of morbid cell environment, such, for example, as that induced by indigestion toxæmia. If this condition is pronounced and if it lasts, as it often does, for many years, how can it fail to impress the tissues permanently, notably such impressionable tissues as the nervous? Suppose the toxæmia to be of a kind apt to produce irritability, depression, and muddle-headedness; then on the principle that functional change implies structural change, does it not follow that a long-continued toxæmia of this kind must necessarily impress the cortical neurons structurally, and that too in an injurious way? Apart from such *a priori* considerations, I am convinced from actual observations that intellectual development may in this way be greatly hampered, and that of two individuals with exactly the same mental potentialities and educated in exactly the same way, the one having a sound digestion, and the other being the victim of chronic indigestion toxæmia causing the mental symptoms in question, the former will far outstrip the latter in mental development.

Summary.—The composition of the plasma varies with every phase of life—infancy, childhood, adolescence, maturity, and old age, and in large measure determines the anatomical changes characteristic of these epochs. Probably many of the grosser anatomical characteristics of race have their origin in the plasma. Excluding short-lived cells, like the chromocytes, and genuine senile degeneration, degeneration never occurs spontaneously in a normally evolved cell, but is always traceable to specific environmental influence.

(To be continued.)

THE REGISTRAR-GENERAL'S SIXTY-EIGHTH ANNUAL REPORT.

III.¹

FURTHER continuing our review of this report we notice that in the course of his final remarks Sir William Dunbar speaks appreciatively of the completion by the Royal College of Physicians of London of the third revision of its Nomenclature of Diseases. This document, the preparation of which has occupied three years, will be welcomed by all who are interested in the progress of scientific medicine and will doubtlessly be serviceable to medical practitioners in their duties under the Registration Acts.

A feature in these reports, which in each successive year since 1901 has attained fuller development, is the collection of vital statistics from our colonies and from the principal foreign countries and their reduction to a common standard for comparison with those of our own country. To these statistics further reference is made when the mortality of particular diseases is dealt with.

Among new departures in the latest revision of the Nomenclature we notice that the great group of general diseases—the *morbi corporis universi* of a previous revision—has been subdivided, the “infections” being distinguished from the “intoxications,” and the other general diseases the nature of which is still uncertain being arranged in lists by themselves. At an early stage of its labours the Royal College of Physicians of London appears to have determined this question of classification, for it was adopted in the new official list of causes of death compiled for the Registrar-General's report for 1901 by Dr. Tatham who availed himself of the information at his disposal as a member of a special committee of the College in order to bring the official list of causes of death into harmony with the authorised classification. Now that the new revision of the Nomenclature has been published it is satisfactory to find that no modification is required of the official list of causes of death in use in the English reports since the beginning of the present century and adopted for their reports by the Registrars-General of Scotland and Ireland.

In this country the mean proportion of deaths registered without attestation by medical men appears to be nearly constant from year to year; but in 1905 this proportion in several of the English and Welsh counties was unduly high, reaching in one county as much as 7.6 per cent. of the total deaths. According, we believe, to ancient custom the causes of deaths certified by coroners after inquest are regarded for registration purposes as sufficiently attested, but it would surely be absurd to contend that the coroner's certificate based on after-death appearances alone is in any sense of equal value with that of a medical man actually in attendance on the patient during life. We are therefore of opinion that in all inquest cases where a medical certificate as to cause of death is attainable that document should accompany the certificate of the coroner for the consideration of the Registrar-General.

Among “general diseases” that are exceptionally destructive to life Dr. Tatham has selected for particular comment three—pneumonia, tuberculosis, and cancer. These diseases in the aggregate are responsible for fully one quarter of the mortality from all causes, and the last two of them are now fortunately under investigation by competent authorities, with the view of discovering, in the one case, the exact nature of the morbid processes involved and, in the other case, the best means for controlling its ravages. Taking one year with another, each million of the English population loses annually about 1300 of its number by pneumonia. The disease is everywhere more fatal to males than to females and much more fatal in the towns than in the country. The age incidence of the several types of pneumonia varies considerably; lobar or croupous pneumonia appears to be especially fatal at ages after the forty-fifth year, whereas catarrhal or broncho-pneumonia, whilst also very fatal after mid-life, is enormously more so among young children to whom it is by far the most fatal form of the malady.

To tuberculosis in one or another of its forms nearly 11 per cent. of the total mortality was referred in the year 1905, the death-rate being equal to 1632 per 1,000,000 of the

population of both sexes. Of the deaths at all ages, one-fifth part took place at ages below five years, the disease being somewhat more destructive to boys than to girls and much more destructive in the towns than in the country.

Of the 1632 deaths from tuberculosis occurring in each million of the English population, as many as 1140 were caused by pulmonary tuberculosis. Presumably because of the havoc made by this malady amongst the bread-winners of the working classes, it is against pulmonary tuberculosis for the most part that hitherto preventive measures have been directed. Even if sanatoriums were more nearly adequate than at present for the needs of the community, it is as yet too early to form an estimate of their influence in reducing the prevalence of this disease. But there is no doubt that, short of actual hospital isolation of the sufferers, the general preventive measures taken by sanitary authorities have powerfully operated in this direction. At any rate, the returns show that the mortality from the disease in question is steadily and not slowly decreasing as one year succeeds another. As in other recent years the present report shows excessive incidence on the male portion of the community, the mortality in 1905 having been higher in males at all ages than in females by fully 40 per cent. In that year, too, the disease showed the usual excess of fatality in the urban over the rural portions of England.

In recent years inordinate mortality from pulmonary tuberculosis has been recorded in parts of Wales. Thus, in the year under notice it appears that of the 12 registration counties constituting the principality there were seven in which the male death-rate from this disease exceeded the average for England and Wales, and ten in which the female death-rate was in excess. Among these counties the highest death-rates were, among males, 2158 per 1,000,000 in Merionethshire and 2075 in Cardiganshire, and among females, 2141 in Cardiganshire and 1659 in Anglesey. As regards the age of maximum mortality from this disease, it is interesting to note that it occurs much earlier in the country than in the towns. In the urban group of counties pulmonary tuberculosis showed in 1905 the greatest fatality at the age 45–55 in men and at 35–45 in women, whilst in the rural county group the maximum age was 25–35 in both sexes.

In attempting to compare English mortality from pulmonary tuberculosis with that of our colonies or of other countries we are met by the difficulty that in some of these the deaths from this disease are not separated in the returns from those due to other forms of tuberculosis. Taking the figures as they stand in the report it would appear that out of the 24 countries therein mentioned 14 show a higher average mortality than our own, the remaining countries, including our Australian colonies and Italy, showing a rate considerably below that of England and Wales.

From cancer or malignant disease the loss of life in England and Wales still continues to show an increase, the deaths of males in 1905 exceeding the decennial average by 13 per cent and that of females by 5 per cent. If the deaths from cancer in 1905 be calculated on the aggregate population of the respective sexes without reference to age the disease will be found to have destroyed 756 per 1,000,000 males living in that year, which is the highest rate hitherto recorded, and to have destroyed 1005 females per 1,000,000 living, a rate which is only a trifle below the rate of 1904, which had been the highest on record. The statistics of 1905 confirm those of previous years in showing that cancer is more destructive to women than to men. This difference may, however, be accounted for by the well-known tendency of the disease to invade quite exceptionally the mammary and generative organs of females. In the last five years the male deaths from cancer, less those in which the mammary and generative systems were involved, corresponded to a rate of 712 per million living, whilst the female rate with the same limitations did not exceed 584 per million.

Among ordinary infectious diseases Dr. Tatham selects two for particular notice, diphtheria and enteric fever, both of which diseases were attended by less than the average fatality in the year under notice. The statistics of fatal diphtheria are still vitiated by the practice unfortunately persisting in some parts of using the terms croup and membranous laryngitis as equivalents for diphtheria, although in respect of the latter term this practice has been forbidden by the Royal College of Physicians of London. Taking diphtheria and croup together, the disease would appear to have shown in 1905 the greatest prevalence in South Wales and

¹ Previous notices of this report appeared in THE LANCET of Feb. 15th, p. 450, and March 2nd, p. 606.

in Lincolnshire, Worcestershire and Rutlandshire showing a favourable record in this respect. The mortality from enteric (or typhoid) fever was lower in 1905 than in any other year on record. Compared with the decennial average the mortality of England and Wales from this disease was lower by 31 per cent. The behaviour of enteric fever in 1905 is, however, remarkable in this respect, that whilst, on the one hand, the urban group of counties experienced a considerable decrease as compared with the average, on the other hand the rural group of counties experienced an increase. This abnormal difference may, however, be explained by the circumstance that a severe outburst of enteric fever occurred in Lincolnshire in the early part of the year.

MEDICINE AND THE LAW.

Water Rates for Medical Men.

AT Watford Dr. S. I. Lightfoot was summoned recently for the non-payment of part of the water rate levied upon him by the Watford urban district council. In addition to the rate of 1s. in the £ for water for domestic use he had been charged 5s. for water used in his garden and 10s. for water used in his dispensary. No agreement as to the water supplied for the two latter purposes had been entered into and Dr. Lightfoot had paid the 5s. rate but had declined to pay the 10s. The Bench decided that in the absence of an agreement to pay the special rate the summons must be dismissed, so that the defendant was successful in resisting the prosecution but was not able to obtain a decision as to whether the water used by him in his dispensary should be covered by the payment made for water supplied for domestic purposes only.

Bill to Abolish the View of the Body at Coroners' Inquests.

Mr. Luke White, who is the coroner for North-East Yorkshire, has just introduced a Bill in Parliament "to dispense with the compulsory viewing of bodies on the holding of coroners' inquests." The Bill is supported among others by Mr. Bramsdon, the coroner for Portsmouth. So far back as 1879 a Coroners Bill was being considered by a Select Committee of the House of Commons which (Clause 5) would have given this relief. Later, in 1898 and 1899, circulars were sent out by the Home Secretary to coroners and their deputies inquiring if the proposed change was in their opinion desirable. In March, 1900, it was elicited from Sir Matthew White Ridley, then Home Secretary, by Mr. John Wilson that a majority of replies to the circular favoured the suggested reform and a very large majority desired some change, but the nature of such change was the cause of a very great difference of opinion. At present "an inquest on the death of man" is void unless the body has been viewed by the coroner, by the identifying witness, and by the inquest jury. The last should not view the body until they have been sworn in, as prior to that they are not a jury. This rule is very often ignored by coroners. In the absence of an identifying witness and where charges of negligence or violence precedent to the death are preferred the inquest jury have little need nowadays to view the body of what in our modern congested civilisation must in most cases be that of an entire stranger. A summary of the history of this ancient custom was given in THE LANCET of Nov. 18th, 1905, p. 1501.

The Overlying and Accidental Burning of Children.

A Bill to amend the Prevention of Cruelty to Children Act, 1904, has been introduced in the House of Commons by Mr. Bramsdon, M.P., and has among its "backers" Mr. T. P. O'Connor, M.P., and Mr. Rufus Isaacs, K.C., M.P. The object of the proposed law is to prevent the overlying of young children by adults sleeping with them in the same bed and also the accidental burnings and scaldings which so frequently result from the absence of a fireguard. It will be remembered that a conference was held towards the end of last summer by some members of the executive committee of the National Society for the Prevention of Cruelty to Children and a deputation of members of the Coroners' Society and of the British Medical Association, at which this subject was discussed and at which the forms which preventive legislation might take were suggested. These were described and commented upon in a leading article in THE LANCET of Sept. 15th, 1906, p. 749.

When the Act of 1904, the amendment of which is now proposed, was first introduced the Rev. Benjamin Waugh tried to get included in it clauses making it "exposure" of a child to leave it alone with an unprotected fire and also the "perilous overcrowding of any infant in bed or the going to bed drunk with any infant." These proposed additions to the law were, however, struck out and the new Bill embodies the proposals made by Mr. C. L. Rothera, the coroner for Nottingham, at the conference referred to, by which the law shall be invoked whenever it shall be proved that death has taken place owing to the causes under discussion. In other words, it is not proposed that the act of taking a child to bed with grown-up persons shall in itself be punishable or the act of leaving a child alone in a room with an unguarded fire, even when injury to the child results, but that if the death of a child shall be proved to have been due to these causes then the neglect involved shall become an offence within the meaning of the Prevention of Cruelty to Children Act, 1904. It has no doubt been felt that the suggestion of possible inquisitorial supervision of the homes of the poor would injure the prospects of a useful measure in Parliament but that none could object to a Bill designed on the face of it to protect lives by punishing those responsible for unnecessary deaths. We can only repeat what we have said before—that industrious, kind-hearted, and sober parents are not likely to be injuriously affected by such a law and that the ingenuity of parents and of manufacturers called upon to meet a new demand should soon provide at a low cost such apparatus as the cots and fireguards required. The amendment of the law is urgently needed in order that it may be possible to punish (with such severity as may be appropriate to the individual case) parents who are not sober, not kind-hearted, and not hard-working, who recklessly fail to provide for the safety of their offspring, and through whose neglect poor little children die premature and painful deaths. There is no fear that our judges, magistrates, or juries will allow undeserved punishment to fall upon fathers and mothers whose children's deaths are due to unavoidable circumstances. All parents and persons having the custody of children, however, will have to consider the risks involved and to take precautions which will diminish not only the number of deaths that now take place but injury, suffering, and ill-health not resulting in actual loss of life. The extent of this suffering may be judged from the fact that in recent years the deaths from the causes indicated have amounted to between 3000 and 4000 per annum.

Looking Back.

FROM

THE LANCET, SATURDAY, March 14th, 1829.

DOUBLE PUPIL IN ONE EYE.

A remarkable case of double pupil was observed by Professor Pacini, of Lucca, in a young man who, in his childhood, had, from an unknown external cause, been affected with chronic inflammation of the left eye, which had left it in the following state:—The external parts of the eye are healthy, the cornea is perfectly transparent, except at its external part, where there is a small pterygium; the pupil is elliptic, the fourth part of a line in height, and one line in breadth, and immoveable even in the strongest light. The upper eye-lid being raised, another pupil, three lines and a half in its largest, and one line in its smallest diameter, is discovered at the upper portion of the iris; it is somewhat directed towards the internal angle of the eye, and likewise insensible to light. The parts behind it are perfectly transparent. The young man is long sighted, and squints, the left eye being constantly turned towards the nose; whenever he looks at an object with both eyes, he sees it simple and distinct; if the healthy eye be closed, and the accessory pupil covered, the object appears confused, but if seen with the superior pupil only, it appears simple and distinct. Whenever he looks with the morbid eye at an object placed before him, he sees its right half only, and that double; in order to see it simple, he is forced to direct the eye towards the external angle, and even then the right half is seen more distinctly and somewhat higher than the other. Objects appear of the same

size, whether seen with the morbid or healthy eye; and continued exertion of the former produces a disagreeable sensation in the interior of the globe, so that he is obliged repeatedly to close the eyelids.—*Journ. des Progr.*

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8236 births and 5605 deaths were registered during the week ending March 9th. The annual rate of mortality, which had been equal to 17·1 and 18·4 per 1000 in the two preceding weeks, declined again to 18·2 in the week under notice. During the first ten weeks of the current quarter the death-rate in these towns averaged 19·5 per 1000, the rate during the same period in London being 19·7. The lowest death-rates in the 76 towns during the week were 8·1 in Hornsey, 10·2 in Wallasey, 10·4 in Northampton, and 10·7 in Ipswich; the rates in the other towns ranged upwards to 25·8 in Norwich, 28·4 in Huddersfield, 28·8 in Merthyr Tydfil, and 30·1 in Bury. The 5605 deaths in the 76 towns showed a decline of 47 from the number returned in the previous week, and included 470 which were referred to the principal epidemic diseases, against 390 and 440 in the two preceding weeks; of these, 205 resulted from measles, 105 from whooping-cough, 69 from diphtheria, 35 from scarlet fever, 33 from diarrhoea, 23 from "fever" (principally enteric), and not one from small-pox. The deaths from these epidemic diseases were equal to an annual rate of 1·5 per 1000 in the 76 towns, the rate from the same diseases being also 1·5 in London. No death from any of these epidemic diseases was registered in Oldham, Huddersfield, Hornsey, Coventry, or in four other of the 76 towns; the annual rate therefrom, however, ranged upwards to 5·2 in Grimsby, 5·3 in West Bromwich, 5·4 in East Ham, and 6·2 in St. Helens. The 205 fatal cases of measles showed a marked further increase upon recent weekly numbers and caused an annual rate of 3·4 per 1000 in East Ham, 4·4 in Grimsby, 5·1 in St. Helens, and 5·3 in West Bromwich. The 105 deaths from whooping-cough were fewer by 12 than those in the previous week, the highest annual rates therefrom being 1·2 in York, 1·4 in Nottingham and in South Shields, and 1·9 in East Ham. The 69 deaths referred to diphtheria showed an increase of nine, and were proportionally most numerous in Derby. Scarlet fever was most fatal in Newport (Mon.), and diarrhoea in Rhondda and Bourne-mouth. The deaths from "fever" showed no marked excess in any of the towns. Cerebro-spinal meningitis caused one death in St. Helens. No case of small-pox has been under treatment in the Metropolitan Asylums Hospitals since the end of June last. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had steadily declined in the ten preceding weeks from 3846 to 2878, was again 2878 in the week under notice; 306 new cases of this disease were admitted to these hospitals during the week, against 363, 322, and 326 in the three previous weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 379 and 432 in the two preceding weeks, declined again to 405 in the week under notice, but were eight above the corrected average number in the corresponding week of the last five years. The causes of 55, or 1·0 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, West Ham, Bradford, Newcastle-on-Tyne, and in 44 other of the 76 towns; the proportion of uncertified deaths, however, showed a marked excess in Preston, Sheffield, Hull, Middlesbrough, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 18·8 and 20·3 in the two preceding weeks, further rose to 20·6 in the week ending March 9th, and exceeded the mean rate in the 76 English towns by 2·4. The rates in the eight Scotch towns ranged from 13·2 and 18·5 in Greenock and Perth to 22·4 in Aberdeen and 23·5 in Leith. The 716 deaths in the eight towns showed an increase of ten upon the number in the previous week, and included 112

which were referred to the principal epidemic diseases, against 71 and 98 in the two preceding weeks. These 112 deaths were equal to an annual rate of 3·2 per 1000, which exceeded by 1·7 the rate from the same diseases in the 76 English towns; they included 52 which were referred to "fever," 26 to whooping-cough, 15 to diphtheria, 13 to diarrhoea, six to measles, and not one either to scarlet fever or small-pox. The deaths referred to "fever," which had been 49, 25, and 47 in the three previous weeks, further rose to 52 in the week under notice, and included 32 in Glasgow, ten in Leith, nine in Edinburgh, and one in Dundee; 28 of the 32 deaths from "fever" in Glasgow, seven of the nine in Edinburgh, all the ten in Leith, and the death in Dundee were certified as cerebro-spinal meningitis. The 26 fatal cases of whooping-cough, against 27 and 25 in the two previous weeks, included 21 in Glasgow and three in Paisley. The 15 deaths referred to diphtheria showed a considerable increase upon recent weekly numbers; seven occurred in Glasgow, three in Dundee, and three in Paisley. The fatal cases of diarrhoea were also more numerous, including six in Glasgow, three in Edinburgh, and two in Aberdeen. Measles caused three deaths in Aberdeen and two in Glasgow. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had declined from 178 to 124 in the four preceding weeks, rose again to 149 in the week under notice, and exceeded the number in the corresponding week of last year by 24. The causes of 22, or 3·1 per cent., of the deaths registered in the eight towns during the week were not certified or not stated; the mean proportion of uncertified deaths in the 76 English towns during the same week did not exceed 1·0 per cent.

HEALTH OF DUBLIN.

The annual death-rate in Dublin, which had been equal to 31·4, 27·1, and 28·6 per 1000 in the three preceding weeks, declined to 25·2 in the week ending March 9th. During the first ten weeks of the current quarter the death-rate in the city averaged 28·3 per 1000; the mean rate during the same period did not exceed 19·5 in London and 20·0 in Edinburgh. The 189 deaths of Dublin residents registered in the week under notice showed a decline of 25 from the number in the previous week, and included ten which were referred to the principal epidemic diseases, showing a slight increase upon recent weekly numbers. These ten deaths were equal to an annual rate of 1·3 per 1000, and included seven from whooping-cough, one each from measles, diphtheria, and diarrhoea, and not one either from small-pox, scarlet fever, or "fever." The fatal cases of whooping-cough corresponded with the number in the previous week. Four deaths were also referred to cerebro-spinal fever. The deaths in the city included 29 of infants under one year of age and 51 of persons aged upwards of 60 years; both these numbers showed a marked decline from the numbers in the previous week. Three deaths from violence and seven inquest cases were registered; and 73, or 38·6 per cent., of the deaths occurred in public institutions. The causes of four, or 2·2 per cent., of the deaths registered during the week were not certified; the percentage of uncertified deaths in the week under notice was equal to 4·5 in Edinburgh, while it did not exceed 0·2 in London. The 167 deaths registered in Belfast during the week ending March 9th included 21 certified as due to cerebro-spinal meningitis or cerebro-spinal fever.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff Surgeon: T. W. Philip, to the *Tyagar*.

ROYAL HORSE GUARDS.

Captain Percival J. Bodington, from the Royal Army Medical Corps, to be Surgeon-Captain, vice St. John B. Killery, who exchanges (dated March 1st, 1907).

ROYAL ARMY MEDICAL CORPS.

Captain J. S. Bostock has arrived at Portsmouth for duty. Major T. B. Beach, from Chatham, has been appointed to the Royal Arsenal, Woolwich, for duty.

Surgeon-Captain St. John B. Killery, from the Royal Horse Guards, to be Captain, vice Percival J. Bodington, who exchanges (dated March 1st, 1907). Captain St. John B. Killery to be Major (dated March 1st, 1907).

Captain F. A. Stephens has been appointed Recruiting Medical Officer at Edinburgh.

ROYAL ARMY MEDICAL CORPS IN INDIA.

The following appointments have been made:—Lieutenant-Colonel T. P. Woodhouse, on being relieved of his present appointment, to command of the Station Hospital, Kasauli. Lieutenant-Colonel R. Holyoake to command of the Station Hospital, Dagshai. Major W. G. Beyts to command of the Station Hospital, Subathu. Lieutenant-Colonel F. J. O'Donnell has returned to Quetta from privilege leave. Lieutenant-Colonel S. Westcott has arrived at Mhow and assumed command Station Hospital there. Captain E. W. Powell has arrived at Poona. Captain T. F. Ritchie has arrived at Aden from the Northern Command. Captain J. P. J. Murphy sailed for England (tour expired) on Feb. 8th. Lieutenant W. Benson, nominated for duty in the Northern Command, has, on arrival in India, been posted to Rawal Pindi. Lieutenant-Colonel H. B. Mathias, D.S.O., has been transferred to Simla for duty at army head-quarters. Lieutenant M. D. Ahern has been transferred from 1st (Peshawar) to the 3rd (Lahore) Division. Leave out of India to following officers has been granted—namely: Major H. W. K. Read, six months; Captain E. S. Worthington, seven months; Captain W. F. Tyndale, six months; Captain D. O. Hyde, six months; and Lieutenant F. H. Noke, six months.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Alexander Macdonald to be Surgeon-Major (dated Feb. 27th, 1907).

SIR JOHN HARRY KER INNES, K.O.B., SURGEON-GENERAL, A.M.D. (RETIRED).

We regret to announce that this veteran army surgeon, whose record includes distinguished service in the Crimea, the Indian Mutiny, and on the British Sanitary Commission at the German headquarters during the war of 1870-71, is seriously ill from double pneumonia at his residence in Florence. Till lately, in spite of his 87 years, he was one of the most active members of the English-speaking colony in the Tuscan capital, but the influenza, which has been epidemic for the last three months on the Italian Riviera and in the chief inland towns, attacked him early last week and, now that the pulmonary complication has supervened, leaves little hope of recovery.

Correspondence.

"Audi alteram partem."

THE SURGEON'S POWER OF LIFE AND DEATH.

To the Editors of THE LANCET.

SIRS,—I read with interest Dr. J. A. Rigby's verbose and effusive epistle published in *THE LANCET* of Feb. 16th in reply to a leading article which had appeared some weeks previously in your paper. I had not the pleasure or otherwise of reading Dr. Rigby's original contribution to the *Independent Review* so that I am not in a position to criticise it, but many of the statements in his letter appear to me open to criticism. He states "as soon as a man has obtained any medical qualification he is at once given the power of deciding whether a person consulting him shall be submitted to an operation which may cost him his life." Literally that statement is true enough, but practically such a thing seldom occurs. Speaking generally, one finds that a newly qualified man either goes as an assistant in private practice or takes a resident hospital appointment. Now, I venture to assert that few principals will permit their assistants to operate in serious cases, and house surgeons are not, as a rule, allowed to undertake serious major operations. If a man just qualified starts practice for himself, he will not at first have many opportunities of deciding this momentous question. Thus Dr. Rigby raises an alarm in a matter that, practically speaking, never occurs.

I cannot pass Dr. Rigby's remarks on appendicitis without

comment. I think his experience in such cases must be unique, for only to have seen two cases in over 30 years of medical work is remarkable and the people of Preston and district are to be congratulated on their singular immunity from that complaint. He appears to argue that operative interference has not reduced the mortality and that the mortality has been increased by cases unnecessarily operated upon. I do not agree with him. Personally I have seen at least two cases in which death ensued owing to operative interference being delayed too long. Does he advise medical treatment for gangrenous appendicitis with secondary peritonitis? Perhaps such would come under his cases "suitable" for operation, although, in my opinion, the risk is far greater when operation is delayed so long. The mortality in this condition is to a large extent due to cases being handed over to the surgeon when the patients have been poisoned by the toxæmia and when they are in an almost moribund condition. I do not assert that all cases require operation—far from it, for I believe that a large percentage of cases will get well under medical treatment.

Dr. Rigby's bitter tirade against modern surgery is unjust and unfair. I do not agree with everything brought forward by the "advanced" surgeon, but I think his wholesale condemnation of modern methods quite untenable. There is not the least doubt that rapid and progressive development of modern surgery has done much to alleviate human suffering and to save many lives. Dr. Rigby's unjustifiable attack on Dr. Russell has been ably answered by that gentleman himself. I am in perfect agreement with Dr. Russell's remark about the part the physician must play in cases where the surgeon's help may be necessary. The physician should strive to become a skilled diagnostician, but he should take note of surgical advancement, so that he may be able to advise in the interest of his patient, should the assistance of his surgical colleague be necessary. I should like to know if Dr. Rigby advises his patients suffering from cancer to bear up bravely and patiently await death. Or are Preston residents immune from it also? I am not aware of any medicine that will check the progress of cancer, and I believe that the surgeon's knife is the best remedy. If taken early such a procedure affords a means of relief, if not of cure. The skilled physician should endeavour to make his diagnosis early, so that early operation should give the patient a chance of cure. And if relief (as generally happens) only is obtained, is not that worth while?

Dr. Rigby quotes a case in which a gentleman doing an ovariectomy for the first time required some assistance to complete the operation. Truly a most unfortunate spectacle for Dr. Rigby to witness. I should like to know who are to operate in the future if the younger men are not to operate now. Does Dr. Rigby imagine that anyone without experience can do as well as the skilled operator? "Practice makes perfection" is an old saying, and it is only by practice that younger men will attain the requisite skill of their seniors.

Before concluding Dr. Rigby quotes a case from your journal which is irrelevant and immaterial to the discussion and sneers at your journal in publishing such without comment. He evidently believes that your "silence meant consent." I do not think editors as a rule hold themselves responsible for the statements of their contributors and you open your columns for the discussion of that with which you do not agree, as is evidenced by your publication of Dr. Rigby's letter. Everyone is entitled to his own opinion, but I do not think Dr. Rigby will get many of the profession to support him in the majority of his statements.

I am, Sirs, yours faithfully,

J. ALLAN.

March 1st, 1907.

ON THE CONDITION OF THE BLOOD-VESSELS DURING SHOCK.

To the Editors of THE LANCET.

SIRS,—This question is giving rise to a somewhat complicated discussion and I should like to be allowed to endeavour to define some of the points at issue and if possible to throw light upon them. My position with regard to Dr. Crile's views is this. His experiments appear to me to have been arranged and carried out with the greatest skill, ingenuity, and precision. As far as I can judge, all his statements of facts have been proved. He has, however, formulated a theory which I believe to be a mistaken one, and I hold that it can find no secure basis on his facts. I

are propounded a view offering, in my opinion, a better interpretation of all the circumstances, and I have pointed out certain phenomena which I consider to be irreconcilable with Dr. Crile's theory but to be fully accounted for by mine. (satisfactory explanation of any of these difficulties except 17 one has been given. On the other hand, when my theory has been adversely discussed some point concerning facts upon which I fully agree with Dr. Crile has, almost invariably, been selected for criticism.

The letter addressed to you by my friend Dr. Alexander Morison illustrates the state of affairs very well. He holds that I fix my attention too much upon the peripheral circulation. In his view "the cardio-vascular state in shock is one of abased central force accompanied by a simultaneous depression in the neuro-muscular activity of the peripheral circulation."¹ If I had not wished to shorten as much as possible the paper which you were good enough to publish² I would have directed attention, as I did on a former occasion,³ to the fact that I omitted to discuss the important point raised by Dr. Morison because I had no difference of opinion upon it with Dr. Crile. The second statement in Dr. Crile's argument is that the heart muscle is not necessarily enfeebled during shock. He wrote that: "The amount of evidence at hand leads to the conclusion that the heart's action is the last of the great vital functions to fail."⁴ In exact harmony with this I stated six years earlier that "there is reason to believe that death from traumatic fever, from shock, or from pseudo-typhus following laparotomy usually begins elsewhere and not at the heart."⁵ Dr. Crile showed that when the heart's action had been arrested by asphyxia artificial respiration caused it again to act "after a quiescence of as much as 50 seconds in one case."⁶ If blood is adequately supplied to, and taken away from, the heart, the muscular activity of that organ is to a great extent independent and exceedingly persistent. I have myself seen a human heart contracting when all its connexions with the body were severed by a railway injury.⁷

I have examined clinically a number of cases in which the removal of large ovarian tumours caused deep shock, the pulse being hardly perceptible, or quite imperceptible, at the wrist, whilst the heart did not beat quicker than 80 or 90 to the minute, and in one instance was as slow as 48. In this particular patient there was no question of hæmorrhage, the operation being a simple ovariectomy, and in none of these cases was hæmorrhage a marked feature. In such circumstances the immense power of the heart was obvious on feeling the carotids and the heart sounds were loud and distinct. The most definite of these cases were seen when very large, old-standing ovarian tumours were more common than they are now and when the chilling effects of a carbolic spray were added to the depressing influences of the anæsthetic and of the operation. I am quite unable to see any adequate explanation of the phenomena described other than that the vessels were contracted from the periphery up to and including the radials. This view is in accordance with the teaching of every physiologist that stimulation of a sensory nerve causes a contraction of the arteries. I attributed the unusually strong heart action, in part at least, to a cardiac hypertrophy caused by the presence of the tumours and comparable to that found in pregnant women. The condition of some of these patients was so alarming that I am quite sure that neither cardiac acceleration, cardiac excitement, nor cardiac enfeeblement is a necessary accompaniment of severe shock. This view is confirmed by Dr. Crile's observation that "in the experiments in which the cardiac branches of the stellate ganglia had been severed previous to making tests, the heart beat on slowly, and, although death was delayed, it occurred while the heart was beating slowly and regularly."⁸ Such positive evidence may fairly be opposed to Dr. Morison's statement that he has never observed peripheral loss of tension with normal central impulse except in cases of hæmorrhage. Dr. Morison's refutation of one of Dr. Crile's statements of fact, if substantiated, would, of course, cut the ground from under that gentleman's feet as well as from under mine. To

use Dr. Morison's own metaphor, however, I think he will find it possible to shiver a good many lances without making an impression on the facts as Dr. Crile has stated them. Dr. Morison frankly wrote that he had not read Dr. Crile's work.

Dr. Leonard Williams takes up a position exactly comparable to that of Dr. Morison. He wrote in your issue of March 2nd that I had brought forward "nothing of any real importance" to oppose the arguments of Crile, Leonard Hill, E. H. Starling, Lockhart Mummery, and others, who, in his opinion, had made it abundantly clear that "the blood-vessels in shock are dilated and not contracted."⁹ If Dr. Williams had read my paper more carefully and also your report of the discussion at the Royal Medical and Chirurgical Society¹⁰ he would have seen that I quoted Dr. Crile as definitely stating that in deep shock "the arteries were quite empty, the tissues pale, but the venous trunks everywhere were full,"¹¹ whilst Mr. Mummery asserted that as shock developed "all the small arteries could be seen to relax and fill with blood. When surgical shock had been fully established all the arteries, arterioles, and veins could be seen to be relaxed fully."¹² If Dr. Williams had noted these directly contradictory passages I do not think he would have felt justified in asserting that such differences were of no real importance in a discussion on the condition of the blood-vessels during shock. Neither could he have quoted Dr. Crile and Mr. Mummery as holding identical views on this question, for there can be no doubt that in combating my views Mr. Mummery ran a full tilt against those of Dr. Crile. Unless there is some explanation which I cannot now see it is impossible to avoid the conclusion that either Dr. Crile or Mr. Mummery has fallen into an error of observation. When taken together their statements illustrate the extreme difficulty of obtaining facts and prove to demonstration that even experimental work may lead to erroneous teaching.

In the course of abdominal operations I have never seen any sign of a general relaxation of the vessels unless peritonitis or some interference with the circulation existed. Here I would point out that, in his lectures at the Royal College of Surgeons of England, Mr. Mummery said that shock might be induced by exposure of the abdominal viscera.¹³ Such an exposure, if sufficiently prolonged to induce shock, would certainly excite also a peritonitis, in which case exactly those vascular conditions described by Mr. Mummery as characteristic of shock would necessarily be found in the peritoneum. The removal of coils of intestine from the abdominal cavity also frequently involves an interference with the mesenteric vessels and a consequent congestion in the affected coils. But in uncomplicated cases of shock I have always observed, in accordance with the statements of Dr. Crile, that the deeper the shock the more pale and bloodless the tissues became.

I think that in the foregoing remarks I may claim to have shown that my critics are not altogether happy in their arguments if they are to be regarded as supporters of Dr. Crile's teaching. As I understand them they would uphold his theory but will none of his facts. And without doubt the belief that the vessels are fully relaxed during shock is in accord with the conditions which most of us would expect if the vaso-motor centres should break down. Thus the arguments of my opponents seem to me to be strongly in favour of my contention that Dr. Crile's theory can have no sound foundation on his own statements. If it is authoritatively decided that I am in the wrong as regards the points discussed above, some of the most important assertions made by Dr. Crile must also be considered erroneous. His theory if still accepted would then rest on a foundation which is irreconcilable with his expressed views. Surely there is here sufficient evidence to justify my urging the necessity for a reconsideration of this question. I would suggest that if Dr. Crile's view is to be maintained he, or one of his supporters, should categorically explain its relationship to the rise of the specific gravity of the blood and the other phenomena which I have pointed out¹⁴ as being at least difficult to reconcile with it. Failing such explanation, I submit that the physiology and pathology of the condition of the blood-vessels during shock cannot be

¹ THE LANCET, March 5th, 1907, p. 666.

² THE LANCET, Feb. 23rd, 1907, p. 497.

³ THE LANCET, August 26th, 1905, p. 573.

⁴ Surgical Shock, p. 143, by George W. Crile, Philadelphia, 1899.

⁵ The Physiology of Death from Traumatic Fever, p. 62, J. and A. Churchill, 1893.

⁶ Surgical Shock, p. 143.

⁷ A note of this observation was published over a pseudonym in THE LANCET, August 25th, 1905, p. 523.

⁸ Surgical Shock, p. 143.

⁹ THE LANCET, March 2nd, 1907, p. 611.

¹⁰ THE LANCET, Feb. 23rd, 1907, p. 497.

¹¹ THE LANCET, Feb. 23rd, 1907, p. 497, and Surgical Shock, p. 143.

¹² THE LANCET, Feb. 23rd, 1907, p. 507.

¹³ THE LANCET, March 18th, 1905, p. 639.

¹⁴ THE LANCET, Feb. 23rd, 1907, pp. 497, 499.

satisfactorily founded on Dr. Orile's theory and I would again urge that all the phenomena may be fully accounted for by my view—namely, that the small vessels become tensely contracted as a consequence of traumatism. As the injury increases or is repeated the contraction of the vessels extends from the periphery towards the heart. The superficial vessels are more affected than the deeper ones and thus, as the state of shock becomes profound, the bulk of the blood is transferred from the superficial to the central areas in which the medium-sized and larger vessels yield partly to superior force and partly because of the physiological necessity for conserving heat. As a consequence the blood pressure in the somatic areas is lowered, whilst that in the splanchnic area is raised, exactly as in the process of digestion. A general and extending contraction of all the smaller vessels can in no way hinder a transference of the bulk of the blood from the surface to the centre, nor can it interfere with the relative changes in the blood pressure which necessarily follow. This interpretation removes all the difficulties which I have raised in connexion with Dr. Orile's theory and is in perfect harmony with every statement of fact made by him.

I am, Sirs, yours faithfully,
Portman-street, W., March 8th, 1907. JOHN D. MALCOLM.

HENRY VIII'S BARBER.

To the Editors of THE LANCET.

SIRS,—My attention has been called to a paragraph on p. 604 in your issue of March 2nd entitled "Henry VIII's Barber." Permit me to say that though I did quote the standing order referred to (Harl. MS., 642) as applying probably to Edward IV. or an earlier king I made no reference whatever to Henry VIII. performing "partial ablations on occasional Saturday evenings" or of John Pen being "present at these august ceremonies." The order was undoubtedly obsolete in Henry's time and the mistake has probably arisen through my having stated that Pen held the office of "King's Barber."

I am, Sirs, yours faithfully,
March 7th, 1907. SIDNEY YOUNG.

MEDICAL CANDIDATES FOR THE MASONIC SCHOOLS.

To the Editors of THE LANCET.

SIRS,—May I once again through the medium of your widely read columns appeal to medical Freemasons for their votes and assistance on behalf of the medical candidates up for election to the Masonic schools? At the forthcoming elections there is no medical candidate for the Royal Masonic Institution for Boys, but there are two candidates for the Royal Masonic Institution for Girls (election on April 11th)—namely:

PHILLIS KERSHAW, daughter of the late John Cawthron Kershaw, M.R.C.S. Eng., of Ivy House, 41, Tongue-road, Leeds.
ELIZABETH EDITH SMART, daughter of the late William Pachey Smart, M.R.C.S. Eng., of 270, Monument road, Edgbaston, Birmingham.

In again appealing for votes I would point out that boys' votes are as valuable as those for the girls, because an exchange can always be effected. All votes, either for the girls or the boys, sent to me will be gratefully received and acknowledged by me.

I am, Sirs, yours faithfully,
HAROLD S. SINGTON,

Secretary, the St. Luke's Medical Lodge of Instruction.
Hospital for Sick Children, Great Ormond-street, W.C., March 10th, 1907.

THE MEDICAL PROFESSION AND COMPULSORY MILITARY SERVICE.

To the Editors of THE LANCET.

SIRS,—It is remarkable that Surgeon-General Evatt does not see that compulsory military service of the Swiss type is just what is needed to put an end to the evils the existence of which in our army he so justly denounces. It is obvious that the chief cause of those evils is that the great majority of our soldiers are drawn from classes whose standard of life is not high and which have extremely little social and political influence. If we adopt the Swiss system and all youths, who are physically fit for service, are compelled to

serve together and to receive in their first year of service military training for about three months, the conditions which last year caused 4000 soldiers to go into hospital with itch and 15,000 with ague will at once be changed. Under the new system there would always be some sons and nephews of Members of the two Houses of Parliament serving in the ranks, and, if preventable evils were allowed to injure the health of our soldiers, the Government would hear a great deal more about the matter than it has heard about such evils in the past or hears to-day. And army doctors would find far more intelligent aid in their efforts to improve health in the army from the officers under the new system than they can receive now, when the old taunt, that our army consists of the dregs of the population officered by the froth, has not lost the whole of its point, though happily it is far less applicable than it used to be. The effect on the health of young Englishmen of three months of good physical training, good food, and steady life, in their twentieth year would surely be welcome to Surgeon-General Evatt as well as to all other medical men. The influence of military training on health and strength is so good in Germany and Switzerland that in both those countries the army has been called the Giant Doctor. Far from tightening "the chains of militarism with deadly force on the medical profession," as Surgeon-General Evatt believes it would do, compulsory military service could not fail to make the community as a whole realise, as it has never yet done, that its military system must be brought under the life-preserving influence of the medical profession.

I am, Sirs, yours faithfully,
T. C. HORSFALL,
A Vice-President of the National Service League.
Swanscoe Park, near Macclesfield.

THE FEES OF PUBLIC VACCINATORS.

To the Editors of THE LANCET.

SIRS,—As it appears quite certain that the President of the Local Government Board intends to reduce the fees of public vaccinators I would suggest to any man holding that office that he should write to his Member of Parliament on the subject and say that if the *minimum* fee is to be lowered the work connected therewith should be lessened.

I am, Sirs, yours faithfully,
Cardiff, March 11th, 1907. T. GARRETT HOBDRER.

THE SLAUGHTER-HOUSES AT GIBRALTAR.

To the Editors of THE LANCET.

SIRS,—Will you allow me a little space to make a few remarks on your Special Sanitary Commissioner's report on the slaughter-houses at Gibraltar appearing in your issue of Feb. 23rd, p. 547? Your commissioner in describing the slaughter-houses says that "these consist of a group of low masonry huts that may well have been built a century or more ago." It is evident that there has been some confusion in your commissioner's mind between the low range of buildings in which some of the "offensive trades" are carried on and the slaughter-house itself. This, rather, is a comparatively lofty building of modern construction, well lighted and ventilated, and, as the report states, divided into two parts, used by the civil and military authorities respectively.

I may also add that since your commissioner's visit the military side has been improved by the addition of a well-constructed room for the purpose of storing carcasses of beef, &c. The general sanitary conditions of the slaughter-house at Gibraltar compare very favourably with other establishments of the same size both at home and abroad. No exception can be taken to other portions of your commissioner's article pointing out certain obvious defects of structure and arrangement, but the authorities concerned are not neglectful of these matters and remedial measures are to be carried out this year, the necessary funds having been provided. I trust therefore that it will be seen that some portions of your commissioner's report fail to do full justice to the condition of a building on which the local authorities have spent considerable care and money. My excuse for troubling you with this letter lies in the fact that having recently acted as health officer of Gibraltar for some months

may claim to have a somewhat intimate knowledge of local nity conditions.

I am, Sirs, yours faithfully,

OLIVER L. ROBINSON,
Major R.A.M.C.

Gibraltar, March 7th, 1907.

THE ELECTIONS OF GUARDIANS.

To the Editors of THE LANCET.

SIRS,—In a few days there will be an election of guardians. I impress upon your readers the importance of securing nomination and election of candidates who are in favour of outdoor relief of deserving aged poor where practicable, and of making such out-relief adequate? The local Government Board itself issued a circular to this effect in August, 1900 (which may be bought for 2½d.), and until old age pensions can be obtained this is far better than offering to the veterans of industry a painful choice between the workhouse and starvation or at least great destitution. Also, it is most important to elect guardians who will give outdoor medical relief (in the first instance) to all poor persons unable to pay a medical man, without placing obstacles in the way such as making the relief a loan, or requiring the patient (or in the case of a child, a parent) to appear before the guardians. Of course, when the medical man has seen the patient he can decide whether it is a case to be treated at home or in the Poor-law or some other infirmary or hospital. The great point (for the public health) is to take care that cases of illness come before the medical man at a very early stage. By this means we may check infectious diseases such as measles, whooping-cough, fevers of various descriptions, and phthisis. Cutting down medical relief is dangerous to the public health.

I am, Sirs, yours faithfully,

J. THEODORE DODD,

A Guardian and Councillor of the City of Oxford.

March 12th, 1907.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Victoria University.

THE acceptance of the office of Chancellor of the Victoria University by the Duke of Devonshire in succession to Earl Spencer, who retired on account of ill-health, has been received with general satisfaction. It may not be remembered by all that the present Duke's father was Chancellor of the University, so that the Devonshire family has taken an active interest in its progress from very early days.

Medical Degrees at the Victoria University.

At a meeting of Convocation on March 6th a communication was received from the registrar relating to the proposed conditions of award of degree of Doctor of Medicine, which had been approved of by the Senate and Council. They had still to be drafted as ordinances and regulations. It was provided, among other things, that—

(1) No candidate will be admitted to the degree of Doctor of Medicine unless he has previously received the degree of Bachelor of Medicine and Bachelor of Surgery; (2) candidates shall produce evidence of having, subsequently to having received the degrees of M.B. and Ch.B., been engaged for at least one year in attendance on the medical practice of a general hospital or on the practice of special hospital or lunatic asylum, or in scientific work bearing directly on his profession such as is conducted in the medical departments of the University, or alternatively of his having been engaged for at least two years in practice other than practice restricted to surgery; and (3) candidates may elect either (1.) to present an original dissertation or (2.) to undergo an examination.

This was accepted and approved.

A Descendant of Hugh Oldham.

Manchester has a strong feeling of regard for its Grammar School, founded in 1515 by Hugh Oldham, Bishop of Exeter, and is interested in the public bequests of the late Mr. Charles James Oldham, F.R.C.S., of Brighton, a descendant of the bishop, chiefly perhaps because he left £3000 to the Grammar School, together with half the residue of his estate, which may amount to from £7000 to £10,000. The legacy of £3000 is "to be applied for the advancement of learning as the authorities may think fit." Another clause in the will suggests that he may not have been altogether free from the prejudices which we sometimes call insular. He "peremptorily requested and desired that no person be appointed as an additional trustee or executor of his will

who shall be either a solicitor, a Jew, or a German, although he may be a British subject, but that he desired rather that a competent business man in a responsible position, such as a bank manager, shall be appointed to such post."

Emergency Cases at Poor-law Hospitals.

At a recent inquest by the city coroner it was stated that a woman was kept waiting in a cab outside the Withington workhouse hospital for 35 minutes when suffering from severe burns from which she died. The jury suggested that provision should be made for the speedy admission of such cases. The clerk to the guardians said that no one could regret more than they did that there should have been such delay, but that the workhouse hospital was under the Poor-law and was purely a pauper establishment for the admission of paupers and not an emergency hospital, such as the Manchester Infirmary and the Ancoats Hospital. In this particular case the medical officer was at the very farthest possible point from the porter's lodge attending to a serious case, and if found at once he would have been some time in getting to the lodge. It must be remembered that the workhouse is a very large establishment. The board has decided to establish a special ward where emergency cases can be admitted at once. It is, no doubt, against the Poor-law theory that non-pauper cases should be admitted but it can easily be understood that the friends of a patient would seek the nearest place where treatment could be obtained.

The New Asylum at Whalley.

The block plan of the asylum at Whalley has received the approval of the Home Secretary and of the Commissioners in Lunacy. The latter body says that the scheme generally commends itself as having advantages in concentration and economy of working. The estimate of the funds required from April, 1907, to March, 1908, amounts to £142,517, and the finance committee of the Lancashire Asylums Board, having regard to the fact that the average weekly cost of maintenance was more than the present charge to the unions, does not think it at present advisable to make any reduction.

March 12th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

Appointments at the General Infirmary.

ACTING on the recommendation of the Faculty, the board of the infirmary has appointed Mr. J. A. Coupland surgical registrar in succession to Mr. H. Collinson who was recently elected assistant surgeon in charge of the convalescent hospitals. Mr. Coupland has during the last two years held the position of resident surgical officer at the infirmary and at a meeting of the Faculty held on March 8th Dr. L. R. Braithwaite was elected his successor. Dr. Braithwaite, like Mr. Collinson and Mr. Coupland, had a distinguished career at the Leeds School of Medicine.

The University.

The written examinations for the second M.B., Ch.B. degrees will begin on Monday, March 18th, and that for the first part of the final examination on the same day. In accordance with recent regulations, which direct that Part II. of the final examination shall be held in July and December, there will be no examination in the subjects included in this part of the examination at the end of this term. In future it has been arranged that the examination in Part I. of the final shall also be held in July and December. The *vitæ-vocæ* and practical examinations will follow immediately on the written examinations and the results will be announced on the evening of March 22nd. The work of the term will not end until March 27th and the summer term will begin on April 22nd.

The Association for the Prevention and Cure of Tuberculosis.

A perusal of the seventh annual report of the Association for the Prevention and Cure of Tuberculosis shows that the useful work of this charity is being carried on with continued success and that it is increasing. The total number of patients under treatment during the past year at the sanatorium at Gateforth and at the country hospital amounted to 278, which is an increase of 112 as compared with the previous year. The results of the treatment have been encouraging in many ways. A very useful addition to the accommodation has been made by the provision at Armley Hospital of a Doerker barrack which provides

for the treatment of eight patients. In appealing for an increase in the financial support of the institutions the committee calls attention to the present sources of income. This income amounted during 1906 to only £4097, and this includes a sum of £2000 received under an agreement with the city council whereby the society undertakes the treatment of a certain number of cases. Annual subscriptions are represented by the sum of £1595. The Bradford guardians contribute £122 in respect of the treatment of patients from their union, and the rent, £120, of Arnley House, which is used for the acute cases, is generously contributed by Mr. Henry Barran, a member of the committee. The association possesses no invested funds, and being a charity which deals with a disease which claims in the city almost as large a mortality as all the acute fevers added together—namely, 570 as against 587 deaths respectively for the year 1906—it deserves an amount of support which as yet has not been extended to it.

March 12th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Presentation to Sir Henry D. Littlejohn.

ON March 8th Sir Henry D. Littlejohn, medical officer of health of the city of Edinburgh, was presented with his portrait, painted by Sir George Reid. The movement was initiated when Sir Henry Littlejohn resigned the chair of forensic medicine in the University. The presentation took place in the Royal College of Surgeons, the President of the College occupying the chair. There was a large gathering of representatives of the legal and medical professions, several of the lords of session being present. The presentation was made by Lord Stormonth-Darling who spoke both as an old friend and pupil in appreciative terms of Sir Henry Littlejohn's powers as a teacher and as a medical jurist. Dr. John Smith spoke as his oldest medical friend. Sir Henry Littlejohn in a racy and humorous speech acknowledged the honour which had been conferred upon him.

Admission of Women Dentists.

At the annual general meeting of the Odonto-Chirurgical Society of Scotland it was stated that a new departure had been made in connexion with the society by the admission of lady members. The rules of the society had been modified in order to enable it to welcome them.

Inspection of Imported Meat.

The public health committee of the town council of Glasgow has been considering this week the whole question of the inspection of meat imported into the city from other countries. The question has been raised by the corporation veterinary surgeon, who reported that in the course of his duties on Feb. 18th and again on the 20th he seized as unfit for human food a foreleg of chilled beef deposited in the meat market on the stance of the agent of one of the largest meat exporters in the United States. Each foreleg was marked "U.S. Inspected and passed. 3." On examination each foreleg was found to have the costal pleura stripped from the ribs but at places distinct tuberculous nodules remained and on incision glandular invasion was manifest. These forelegs were parts of carcasses which in accordance with the regulations issued by the Bureau of Animal Industry to the Government meat inspectors detailed for duty in the packing establishments of the United States ought to have been rejected as unfit for human food and to have been used for the manufacture of tallow after the diseased parts had been removed. These two cases seen to indicate that meat inspection in the United States is not so trustworthy as it ought to be. In the report of the Bureau of Animal Industry for 1905 it is stated in dealing with this subject that during the year there were slaughtered in the United States 2,333,879 cattle, 3,346,451 sheep, 6,051,836 swine, or a total of 11,732,165—making the average for each working day 37,482. The number of inspectors is given as 40. It therefore follows that, to overtake the examination of 37,482 animals, each inspector will require to examine the carcasses and viscera of not less than 937 animals each day. This calculation, however, does not allow for holidays or illness, otherwise the number of animals which would fall to be inspected by each inspector would be materially increased.

Another aspect of this subject of meat inspection which has for some time engaged the attention of the Glasgow authorities is the need for a uniform standard of meat inspection throughout the country. In Glasgow the Public Health Act of 1897 dealing with meat inspection is carried out with considerable stringency, but unfortunately authorities outside the city area do not exercise the same thoroughness. The result of this is that many doubtful animals, more especially pigs, rather than be allowed to run the risk of being condemned on reaching Glasgow, are consigned to areas outside the city where they are cured into hams and no doubt ultimately find their way by rail into the city. The only way for the Local Government Board to deal with such a state of matters is to demand a uniform standard of inspection and no doubt the expediency of such a step will come to be recognised in time.

The Girgenti Home for Inebriates.

The corporation of Glasgow has decided to cease taking into the Girgenti reformatory any new inmates; to ask the Secretary for Scotland to arrange for the early removal of all the present inmates to some other inebriate reformatory or to the State reformatory at Perth; and to discontinue at the earliest possible date the use of Girgenti Home as an inebriate reformatory. The institution was started in 1900 at the invitation of the Government to experiment with the new Act dealing with inebriates. A sum of about £3000 was spent in acquiring an estate under the assurance that the Government would practically give the corporation a free hand. No sooner had the property been acquired than the Government interfered and placed a considerable number of difficulties in its way before it was able to open the institution, and after the institution was opened it was found that the Act which it was asked to administer was sadly defective. The Secretary for Scotland could give it no help, as he acknowledged that in the meantime there was no prospect of legislation on the subject. Also, in addition, notice had been received that the Government grant for patients would from April 1st be reduced from 10s. 6d. to 7s. per head. The experiment has cost the ratepayers of Glasgow about £1300 a year, and, although not entirely a failure as many women have been reclaimed, yet it is not sufficiently a success to encourage the ratepayers to carry it on without more support, financial and otherwise, from the Government.

March 12th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Epidemic Cerebro-spinal Fever in Dublin.

Up to March 12th no additional case of epidemic cerebro-spinal fever has been reported to the public health authorities in Dublin.

Royal National Hospital for Consumption.

The annual meeting in connexion with the Royal National Hospital for Consumption for Ireland was held at the Royal College of Physicians, Dublin, on March 8th. The annual report stated that there had been no further extension of the hospital at Newcastle during the past year. The number of beds is now 100, which was the number originally contemplated when the hospital was founded; they have been fully occupied during the year. The Registrar-General said, in reference to the mortality from tuberculosis in Ireland, that the number of deaths in 1905 was 11,882, representing a rate of 2.71 per 1000 of the population, which means, taking the mortality from the disease in relation to the deaths from all causes, that in every 100 deaths 16 were victims of the malady. As regards tuberculous disease in the Dublin registration area, for 1906 it caused 1694 deaths, representing an annual rate of 4.47 per 1000 of the population. In the registration area the deaths from the pulmonary form of the disease were 1152 in number and represented an annual rate of 3.64 per 1000. Sir Charles Cameron, C.B., said that one of the most potent means of resisting the spread of tuberculosis was the improvement in the dwellings of the working classes. He regretted that out of nine or ten sanitary authorities in the Dublin only three or four expressed agreement with the proposed establishment of a sanatorium. He stated, however, that a sanatorium would be erected in Dublin by the

corporation and the three or four sanitary authorities, even if the others did not join.

The Health Commission in Belfast.

The Belfast Health Commission, which opened its session, as recorded last week, on March 5th, has, in addition to hearing evidence, been personally examining many parts of the city. The members wisely decided at the outset to do all the examining of witnesses themselves, but counsel representing the corporation, the Water Board, and certain of the citizens may, if they wish, put questions to witnesses through the commissioners. The citizens' health committee, which asked for the commission, stated through Sir Charles Brett that it did not require counsel. Its object was to get at the facts in the interests of the health of the city and it would through witnesses help the commission in every way. All those examined so far have been official; they include the Irish Registrar-General, Mr. R. E. Matheson, Dr. J. King Kerr, chairman of the health committee, Mr. H. W. Baillie, superintendent medical officer of health, the chief clerk of the corporation, and the borough surveyor. The members of the commission have impressed the public as a body of able men with special knowledge who are determined to get at the facts, while the revelations that have been made indicate a truly appalling state of affairs in a great city. The chairman of the public health committee preferred to the statistics of the Registrar-General of Ireland deductions of his own, but the official ones will probably be adopted. Those who listened to this evidence and that of the superintendent medical officer of health, and of the city surveyor (who said that not 1 per cent. of the houses in Belfast are separated from the subsoil by concrete or other wholly impervious material) must admit that such things alone proved the necessity for the inquiry. No one—even those asking for the inquiry—imagined that the public health administration of Belfast was in such a deplorable condition. At an official dinner given by the Lord Mayor (the Earl of Shaftesbury) on March 9th, in proposing the toast of "Prosperity to Our City, the City of Belfast," the chief magistrate said, "would that, however, in conjunction with her prosperity she was able to receive a clean bill of health. He could only compare the position of the citizens at that moment, he thought, to a family who had determined to give up an old home and were ready to embark on a new house with all the advantages and conveniences that modern invention could provide. Expert help and advice had been called in and the family, having realised the highest ideal of hygienic surroundings, were satisfied they would adopt and live up to the highest standard of health and order that could be attained."

Epidemic Cerebro-spinal Fever in Belfast.

The "spotted" fever epidemic is increasing in Belfast. On March 11th eight fresh cases were notified in Belfast and the numbers to-day (March 12th) are: notified, 173; and deaths, 94.

The Belfast Samaritan Hospital.

The annual meeting of the friends and supporters of the above hospital was held on March 4th, the Lord Mayor (the Earl of Shaftesbury) presiding. From the medical report it appears that during the year 526 patients were treated in the extern department and 176 patients in the wards. Of the latter, 144 required surgical operation. There were seven deaths, six after operation and one from advanced cancer which was inoperable. Owing to the efforts of the ladies' committee most useful improvements have been made in the hospital which have greatly contributed to the success of the surgical work done in it. Financially the hospital is in debt to the extent of £195, but against this is the fact that at a cost of £356, collected by the ladies' committee, the hospital has been completely renovated, the entire building having been newly painted, new linoleum and furnishing supplied, and the lavatories arranged with the most modern fittings. 310 patients were treated in the extern department with no maternal deaths. There was a large class of students from the Belfast and other schools. Financially, the expenses were nearly £300 in excess of the income of the hospital, but owing to the success of the annual bazaar and other donations, the management had only encroached on the balance in the bank to the extent of £20.

March 12th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Trypanosomiasis in White Men.

ON Feb. 26th M. Laveran read a paper at the Academy of Medicine founded on a report on some researches undertaken by M. Martin. The sufferers from trypanosomiasis had been treated by M. Martin at the Pasteur Hospital and they all came from the French Congo. It is evident from the cases in question that Europeans cannot be considered immune to this serious disease which was formerly considered to affect only the black races. The treatment employed consisted in giving arsenious acid, trypanoth, and, above all, atoxyl. This last drug was given in the form of a one-tenth solution by hypodermic injection. As a rule, a dose of one gramme was given but sometimes 1.50 grammes were given without ill results. Under its influence the trypanosomata disappeared rapidly from the blood but they very soon reappeared if the medicine were not continued. The glandular enlargements and the rashes disappeared as well as the oedema. Despite the great improvement which four of the cases showed and despite the long duration of the treatment M. Martin did not feel at all certain as to a definite cure. On many occasions the treatment was interrupted and all the various troubles, together with the trypanosomata, reappeared. It would seem, then, that atoxyl has a very real efficacy in sleeping sickness, although it cannot be said to be an absolute cure. The best way of administration appears to be by hypodermic injection, and injection into the cerebro-spinal canal does not seem to have any advantage over the hypodermic method. Not more than 0.5 of a gramme should be given to start with, but it may be rapidly increased to one gramme. Injection should be repeated every five days at first and then once in eight days. The action of the atoxyl seems to be directly upon the trypanosomata which can be seen in microscopic preparations as deformed, swollen up, and sometimes in course of investment by the leucocytes. The solutions must not be sterilised at a higher temperature, for this renders the atoxyl less powerful.

The "Oregogenic" Function of the Thyroid Body.

M. Leopold Levi and M. Henri de Rothschild at a meeting of the Society of Biology held on Feb. 16th drew the attention of the society to a function of the thyroid body which they proposed to call "oregogenic"—that is to say, a function of improving the various "appetites." The two observers had already noted 21 cases in which under the influence of an extract of the thyroid body the appetite for food had considerably increased. Since the period of these observations they have been able to collect a number of confirmatory facts. Thyroid extract, besides improving the appetite for food, appeared to them to increase the cerebral activity. Curiosity, power for work, and the desire for study all appeared to be increased. In the following case sexual desire seemed also to be restored. The patient was 37 years of age and suffered from chronic rheumatism with ankylosis and muscular atrophy. He had congenital cataract and suffered from incontinence of urine, chilliness, fatigue, and arterial sclerosis. Administration of thyroid extract ameliorated the rheumatism, increased the appetite for food, and diminished the feeling of chilliness. Sexual desire, which had been absent since 1901, when the patient suffered from exacerbation of his rheumatism, also reappeared. This reappearance corresponds with the favourable influence exercised by the thyroid treatment upon infantilism.

The Purification of Sewage.

At a meeting of the Academy of Sciences held on March 4th M. Muntz gave an account of some researches which he had made together with M. Lainé on the action of peat in purifying sewage. After having ascertained that peat strongly encourages the development of nitrifying bacteria they thought of applying it to the purification of sewage, which really depends upon nitrification. The sewage of large towns and of big industrial establishments is a very real danger to the public health and the system of spreading it on the land gives rise to ill-tasting crops (*c. donné des déboires*). Bacteria beds succeed much better. M. Muntz and M. Lainé have found that peat is extraordinarily active as a nitrifying medium, and that the sewage is purified in a very short time, even in the case of

the most foul examples of the sewage of Paris. Peat, of which there are extensive beds in many departments of France, can thus be considered as an active factor in the war against infection and insanitation.

Hospital Abuse in Paris.

The directors of the Assistance Publique have just issued a poster in the following terms: Advice at hospitals and dispensaries is exclusively intended for the really poor and necessitous. Everyone applying at a hospital must be prepared to prove his identity, to give his domicile in Paris, and to show that he is really poor by a certificate from a *bureau de bienfaisance*, as well as a receipt for his rent. Except in the matter of urgent cases all the medical staff and the other employees of the administration of the Assistance are forbidden to give treatment to anyone whose calling or the amount paid by him in rent appears to make it probable that he is not a fitting subject for hospital treatment. The Assistance will make inquiry into the truth of the statements of patients and if they are found to be abusing the charity the expenses incurred by their treatment will be recoverable by law.

March 11th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Milk supply.

THE full-dress debate on this subject in the Aula della Reale Accademia di Medicina di Turin brought two facts into prominence—namely, the uncleanness with which the cows are milked and the milk itself stored and distributed, and, even more important, the widespread propagation of tuberculosis through the milk of diseased cows. As to the first—the uncleanness—there was evidence given, which the representatives of the dairy interest who intervened in the debate tried vainly to rebut or to minimise, evidence which the English-speaking consumer in Italy may be excused for regarding as a strong deterrent against the use of Italian milk even after every precaution, beginning with boiling, has been put in practice. The methods universal in Italian dairies are little better than mediæval—no insistence on the hands of the milking staff, male or female, being previously cleaned, no washing of the cows' udders, and little or no attention paid to the stalling of the cows themselves, couching as they generally do among their own faecal droppings, amid surrounding conditions offensive to every sense. "Take," said one of the participants in the discussion, "the milk which has been brought to your own house, put it in a flat-bottomed white glass bottle, let it stand for an hour, and then examine the sediment invariably deposited. This, by the usual tests, will be found to be mainly, if not entirely, composed of the faecal droppings in which the cow has been lying, which have accumulated on the udders, and which no attempt at washing the said udders, much less the hands of the milkers, has even partially removed." That fact alone, typical as it is of Italian methods, which are generally more uncleanly the farther south you go, may absolve me from dwelling longer or in minuter detail on the gruesome theme. As to the second fact—the propagation of tuberculosis through the milk of diseased cows—the most striking contribution to the debate was that of Dr. Giovanni Mazzini, professor of sanitary police and veterinary jurisprudence in the Turinese Scuola Superiore di Medicina Veterinaria. Accepting fully the findings of British bacteriologists as to the communicability of the bovine bacillus of tuberculosis to the human subject, Dr. Mazzini proceeded, on the strength of personal investigation, to reinforce the generally received induction that in the majority of cases tuberculosis is transmitted from the cow to man by contagion through the digestive apparatus—transmission by inhalation through the respiratory organs being rare. Infection is most commonly brought about in "prima infanzia," (first infancy) by the bacilli contained in the cow's milk, which, after being swallowed, arrive, through the digestive apparatus, at the lymphatics and so find their way, in due course, through the circulation into the lungs. Sometimes these bacilli are active enough to induce tuberculosis at the infantile stage or at that of puberty; sometimes their pernicious action, thanks to the patient's resisting power, is delayed till much later in life. As to the prevention of

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March 9th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

The Study of Medicine by Women.

It was in 1896 that the Minister of Education allowed women to enter the universities of Hungary for the purpose of studying medicine, pharmacy, and law—in fact, everything except theology and technical science. Since that time the number of female students has increased from two to year, so that while in 1896 there were only two female medical students in 1906 their number exceeded 100. The professorial board of the University of Budapest, taking into consideration the small incomes of the male members of the different professions, does not sympathise with the steady increase of the number of female students, and last session Professor Kmety proposed that limitations to the number of female students should be resolved upon. This suggestion, of course, evoked a reply on behalf of the women students, and Dr. Ajtay, professor of legal medicine, will endeavour to smooth away the differences which have arisen.

Vital Statistics.

The Hungarian Academy of Science offers a prize of 1500 kronen (£60) for the best compilation of the statistical data of the last ten years on the subject of fertility as shown by the birth-rate and death-rate.

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The Past and Future of Marriage.

Dr. Bólog Somló, the youngest professor of the University of Kolozsvár, recently delivered an interesting address in Nagyvárad on the subject of the Past and Future of Marriage. He spoke of matrimonial life in prehistoric times and followed the various stages as marriage developed from its most primitive form to the present one. He said that once upon a time men captured their wives by force and later they purchased them. Matrimonial life has always had its economic background. He was optimistic with regard to the future of marriage, and thought that the marriages of the future would be much more idealistic than they are to-day.

March 7th.

NEW ZEALAND.

(FROM OUR OWN CORRESPONDENT.)

Working-Class Dwellings.

It would seem that the average colonial idea of the old world workman's conservatism has found its echo here. Quite recently the Government bought land close to each of the large centres—Wellington, Auckland, Christchurch, and Dunedin—and thereon erected dainty dwellings for the working men. Although the architects employed were all of the first rank there has been a great hanging back on the part of the *bonâ fide* workmen. The applications have been few and in some instances have come from the wrong people. While utility and ease of running the house have been conserved, the settlements present a most artistic appearance, because in none of them are all the houses of the same type or pattern. The serried ranks of self-same buildings have been avoided, and for this very reason it would seem that the workman has fought shy of them, more especially in Wellington. Some of the reluctance may have been due to the very elaborate schedule of "don'ts" which were issued, but it cannot be all attributed to this. The new Minister for Labour, the Honourable J. Millar, has gone very carefully into the whole matter and he has in a measure relaxed the regulations with the result that applications have been more numerous. Old fashions die hard and democrats are just as much the slaves of tradition as those whose rule they so desire to alter.

Private Hospitals.

A Bill was passed in the later days of the session dealing with the important matter of private hospitals. Under 1903 no power to regulate such institutions existed. An amendment to the Public Health Act was made and in virtue of this enactment regulations were issued. The control has now been transferred to the hospitals department and the regulations as to the qualifications necessary in the holder of the licence are to be made more severe. The new Act requires that the licensee must be either (1) a medical man; (2) a registered nurse; or (3) a registered midwife.

Regulations affecting Nurses.

It may be well to draw the attention of British nurses to some parts of the law which control the registration of nurses in New Zealand. Very often considerable disappointment is experienced by a nurse arriving from the old country when she finds that, although she may have had hospital training and may have been in practice for some years, she cannot get on the register here. It would seem, judging from the number of applications made, that there are many capable nurses practising in Britain who have not put in three years' training at one individual hospital. They have spent, say, two years at one and perhaps one or more at another, but the Act which is now in force here requires them to have spent *three years at one hospital*. It would be well for all nurses intending to come out to New Zealand to consider carefully whether their educational course has been such as to permit them to register in the colony. The resignation of the assistant Inspector-General of hospitals—Mrs. Grace Neill—marks the close of a departmental career which has been justly termed "excellent." Mrs. Neill was the first lady appointed to this position and since then she

has done a large amount of excellent work. "The Nurses Registration Act" was largely the result of her efforts and the establishment of the State maternity homes may also be credited to her.

New Zealand Branch of the British Medical Association.

A general meeting of the New Zealand branch of the British Medical Association was held in Christchurch on Nov. 29th, 1906, to consider the advisability of registering it under the Unclassified Societies Act. In view of the fact that the parent society is applying for a Royal Charter it was decided to hold over the matter. The next meeting of the branch will be held in March at Dunedin.

Obituary.

The death of Dr. D. MacGregor, Inspector-General of Hospitals and Asylums, removes from New Zealand medical circles one of their most scholarly members. A graduate of the University of Aberdeen and an ardent disciple of Professor Bain he came out to this colony to take up the duties of professor of mental philosophy at the University of Dunedin. During Sir Robert Stout's rule as Premier he was appointed to the charge of the hospitals. He did bold and excellent work with respect to the asylums. Great reforms were necessary but it required a strong man to make them. Dr. MacGregor amply justified the trust reposed in him. He was a scholar, a philosopher, and a most honest man. His fine leonine head, his stalwart figure, and his horror of humbug and hypocrisy in all its forms were the things one remembered after a conversation with him.—Mr. James Martin of Middlemarch was thrown out of his trap between McKae's and Moonlight on Dec. 19th, 1906, and received injuries from which he died. The deceased, who was unmarried and about 54 years of age, was in practice in Dunedin with his brother, Mr. Robert Martin, before he took up his practice at Middlemarch a little over two years ago. The deceased was for some time in West Australia.

The Exclusion of Tuberculous Patients.

Attention has already been drawn to the fact that pulmonary tuberculosis is a notifiable disease here and that also it is one of the diseases which may justify exclusion. That the medical men in Great Britain are unaware of this is evidenced by the fact that nearly every week passengers arrive in Auckland or Wellington and are refused admittance by the health department. Only this week two poor souls arrived by the *Rimutaka* and were refused a permit. To send a man in the last stage of consumption upon a long sea voyage is bad, but to send him to a colony which refuses to undertake his keep and that of those dependent upon him amounts to carelessness bordering on inhumanity. It is unfair to expect that this colony should be made the dumping ground of all the indigent incurables and yet the hardship to the patient is great. No persons in the later stages of the disease are allowed to land, unless they be returning New Zealanders. Only those in the earlier stages who can enter into a satisfactory bond that they can provide for attendance in a private sanatorium are allowed to obtain a footing in the colony.

The Inter-colonial Medical Conference.

Dr. J. M. Mason, chief health officer of the colony, has been appointed president of the sanitary division of the next Inter-colonial Medical Conference which is to be held in Melbourne in 1908.

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the most foul examples of the sewage of Paris. Peat, of which there are extensive beds in many departments of France, can thus be considered as an active factor in the war against infection and insanitation.

Hospital Abuse in Paris.

The directors of the Assistance Publique have just issued a poster in the following terms: Advice at hospitals and dispensaries is exclusively intended for the really poor and necessitous. Everyone applying at a hospital must be prepared to prove his identity, to give his domicile in Paris, and to show that he is really poor by a certificate from a *bureau de bienfaisance*, as well as a receipt for his rent. Except in the matter of urgent cases all the medical staff and the other employees of the administration of the Assistance are forbidden to give treatment to anyone whose calling or the amount paid by him in rent appears to make it probable that he is not a fitting subject for hospital treatment. The Assistance will make inquiry into the truth of the statements of patients and if they are found to be abusing the charity the expenses incurred by their treatment will be recoverable by law.

March 11th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Milk-supply.

THE full-dress debate on this subject in the Aula della Reale Accademia di Medicina of Turin brought two facts into prominence—namely, the uncleanness with which the cows are milked and the milk itself stored and distributed, and, even more important, the widespread propagation of tuberculosis through the milk of diseased cows. As to the first—the uncleanness—there was evidence given which the representatives of the dairy interest who intervened in the debate tried vainly to rebut or to minimise, evidence which the English-speaking consumer in Italy may be excused for regarding as a strong deterrent against the use of Italian milk even after every precaution, beginning with boiling, has been put in practice. The methods universal in Italian dairies are little better than mediæval—no insistence on the hands of the milking staff, male or female, being previously cleansed, no washing of the cows' udders, and little or no attention paid to the stalling of the cows themselves, couching as they generally do among their own faecal droppings, amid surrounding conditions offensive to every sense. "Take," said one of the participants in the discussion, "the milk which has been brought to your own house, put it in a flat-bottomed white glass bottle, let it stand for an hour, and then examine the sediment invariably deposited. This, by the usual tests, will be found to be mainly, if not entirely, composed of the faecal droppings in which the cow has been lying, which have accumulated on the udder, and which no attempt at washing the said udders, much less the hands of the milkers, has even partially removed." That fact alone, typical as it is of Italian methods, which are generally more uncleanly the farther south you go, may absolve me from dwelling longer or in minuter detail on the gruesome theme. As to the second fact—the propagation of tuberculosis through the milk of diseased cows—the most striking contribution to the debate was that of Dr. Giovanni Mazzini, professor of sanitary police and veterinary jurisprudence in the Turinese Scuola Superiore di Medicina Veterinaria. Accepting fully the findings of British bacteriologists as to the communicability of the bovine bacillus of tuberculosis to the human subject, Dr. Mazzini proceeded, on the strength of personal investigation, to reinforce the generally received induction that in the majority of cases tuberculosis is transmitted from the cow to man by contagion through the digestive apparatus—transmission by inhalation through the respiratory organs being rare. Infection is most commonly brought about in "prima infanzia," (first infancy) by the bacilli contained in the cow's milk, which, after being swallowed, arrive, through the digestive apparatus, at the lymphatics and so find their way, in due course, through the circulation into the lungs. Sometimes these bacilli are active enough to induce tuberculosis at the infantile stage or at that of puberty; sometimes their pernicious action, thanks to the patient's resisting power, is delayed till much later in life. As to the prevention of

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Obituary.

SIR WILLIAM HALES HINGSTON, M.D., LL.D., D.C.L.,
F.R.O.S. ENG.

Sir William H. Hingston, an acknowledged leader of surgery in the Dominion of Canada, died at Ottawa on Feb. 19th, as already mentioned in THE LANCET of Feb. 23rd. He was descended from the original Hingston stock of south Devon and east Cornwall, where "Hingston (Hengist) Down" is a memorial of the victory of King Egbert over the Danes, about A.D. 833. The family has had numerous medical members, especially at Plymouth and Liskeard. An Irish branch of the family was founded by Major James Hingston, who was Commissary-General under Cromwell, and received a large tract of land in the south of Ireland for his services. His descendant, Sir William Hingston's father, was an officer in the old 109th Regiment which was raised in Dublin in the latter part of the eighteenth century and sent out to the American war. Here he saw much service and was wounded in two battles. He died in 1831, leaving a widow with six children, one of whom, then an infant, was the future surgeon, having been born at Hinchinbrook, in the province of Quebec, in June, 1829. His childhood was passed in a wild part of Canada, where hunting and fishing were the chief occupations. Young Hingston was educated at Montreal College and later at McGill College. He came to Europe about 1852 and studied at Edinburgh as well as at Berlin, Paris, and other continental cities, taking the degree of M.D. and obtaining the Fellowship of the Royal College of Surgeons of England. Returning to his native country he devoted himself to surgery, being on the staff of the Hôtel Dieu Hospital, Montreal, of which he eventually became surgeon-in-chief. He was also professor of clinical surgery at the University of Laval and was president of the provincial board of health in 1876 and 1877. He married in 1876 Margaret, daughter of the Hon. D. A. Macdonald, formerly Lieutenant-Governor of Ontario. He took a keen interest in public affairs and was mayor of the city of Montreal from 1875 to 1878. In 1875 he was appointed a Commander of the Roman Order of St. Gregory; he received the honour of knighthood from Queen Victoria in 1895; and was made a Senator of the Dominion of Canada in 1896. In 1895 he published a treatise on the "Climate of Canada and its Relations to Life and Health." When the British Association for the Advancement of Science met in Canada some years ago he was appointed vice-president. He was also successively secretary and president of the Canadian Medical Association.

Personally, Sir William Hingston was tall and handsome and his manner was genial and kindly. He was a Roman Catholic and was highly respected throughout the province. He had several children, one son entering the medical profession.

THE HON. ALAN PERCY HARTY MOLYNEUX
HERBERT, M.D. PARIS.

MANY readers of THE LANCET at home and abroad will learn with regret of the death of Dr. the Hon. Alan Herbert at his residence, 18, Rue Duphot, on March 8th. Dr. Herbert had been ill for a few weeks, having had a cerebral hæmorrhage followed by hemiplegia about a month ago. He was attended throughout by his comrade in the internat of the Paris hospitals, Dr. Labadie-Lagrave. Dr. Herbert was the *doyen* of English practitioners in Paris and on the Continent, and was appealed to by them on many occasions for counsel and assistance. At his death-bed were his sisters, the Dowager Countess of Carnarvon and Lady Gwendolen Herbert, who went to Paris a few days previously. He was 71 years of age. In 1901, when the Hertford British Hospital was made over to the British Government by deed of covenant, Dr. Herbert resigned his position of visiting physician, although up to that date he had faithfully attended the wards and the out-patients since its inauguration in 1871—30 years' service.

The Hon. Alan Percy Harty Molyneux Herbert was a son of the third Earl of Carnarvon and was educated at Harrow and Oxford. He then went to Paris, studied medicine, and in 1865 was appointed to the coveted post of *Internes des Hôpitaux*. He took an apartment to begin practice in the Rue Chauveau-Lagarde, but on the declaration of the Franco-German war a few months later he offered his services once

more as *internes* to help to replace those who had left for the front. His whole professional life was associated with the Hertford British Hospital founded by Sir Richard Wallace. The *Anglo-American Annual* gives the following interesting account of its inception:—

It grew up, so to speak, during the two sieges of Paris, in 1870 and 1871. In its origin, it was an appendage to an ambulance; within a year, it became a distinct and permanent institution. Early in January, 1871, during the most distressing period of the German siege, Sir Richard Wallace opened, for the reception of the sick British poor shut up in Paris, two wards immediately adjoining his hospital for the wounded, in the Rue d'Aguesseau; and at the same place a dispensary where outpatients daily received gratuitously medicine and advice. On the 1st of August, the patients, civil and military, were transferred to a commodious house, fitted up for their reception, at Levallois Perret, where, on the 15th of November, there remained only one wounded soldier under treatment; since his discharge, the Hertford British Hospital has been an institution exclusively for British subjects.

On the 2nd of October, Sir Richard Wallace invited to meet him, at his residence, Falconer Atlee, Esq., H. B. M. Consul; Sir John Ross Cormack, M.D., and the Hon. Alan Herbert, M.D., to receive from him in a more formal manner a communication to the effect that he had resolved to build and endow in Paris a hospital for the medical and surgical treatment of poor British subjects to be called the "Hertford British Hospital" in memory of the late Marquis of Hertford. Sir Richard intimated that as a considerable time might elapse before a suitable site could be obtained and permanent buildings be constructed he had taken as a temporary installation the house, garden and dependencies, No. 5, Route de la Bérole. Sir Richard Wallace at the same time intimated his desire to give the management of the hospital and the appointment of its officers to a committee, consisting of himself, Mr. Atlee, Sir John R. Cormack, and Dr. Herbert, the two latter constituting the medical and surgical staff. The committee of management was forthwith constituted in accordance with Sir Richard's proposition, and with a formal minute to that effect was drawn up and signed by those present. Subsequently, M. Emile Lavasseur was added to the committee. At the meeting of the 2nd of October, when the committee was constituted, Dr. Charles Shrimpton was appointed honorary consulting physician, on the proposition of Sir Richard Wallace. The Hertford British Hospital was—as appears from the preceding statement—definitely instituted on the 2nd of October, 1871, and was opened for the reception of patients on the 15th of November, 1871.

The foundation-stone of the new building was laid by Sir Richard and Lady Wallace on the 24th of August, 1877, the anniversary of the death of the Marquis of Hertford. The opening of the new building for the reception of patients was formally inaugurated by a visit from Lord Lyons, British Ambassador at Paris, on the 16th of April, 1879. On the 4th of June, 1879, their Royal Highnesses the Prince and Princess of Wales and the Princess Victoria made a visit of nearly two hours to the hospital. On that occasion His Royal Highness, at the request of Sir Richard Wallace, named the principal male ward *Albert Edward* and the principal female ward *Alicandra*. In July, 1900, Lady Wallace made over the Hospital to the British Government by deed of covenant and the present committee of management was appointed by H.M. Government. The hospital was then thoroughly cleaned, and the drainage scheme was laid down, the electric light installed, and the ventilation and heating improved, and a well-equipped operating theatre has since been added.

With Dr. Herbert's failing health his practice had necessarily diminished in recent years, but for several decades following the war his popularity and success were very great. He was unsparing of himself to the end and will be as much missed by the poor of Paris as by its aristocratic visitors, many of whom remained his patients. Soon after the war he was made Chevalier of the Legion of Honour and a few years ago he was promoted to the rank of officer.

WILLIAM HENRY PEARSE, M.D., M.R.C.P.,
L.R.O.S. EDIN., L.S.A.

Dr. W. H. Pearse died at his residence, 1, Alfred-place, Plymouth, on March 7th, in his 79th year, after a short illness. Dr. Pearse was born at Launceston, Cornwall, where his father was in practice. He received his medical education at the Universities of Edinburgh and Aberdeen and graduated M.D. of the former university in 1851. In 1852 he was admitted M.R.C.P. Edin.

Shortly after graduating Dr. Pearse was elected medical officer to the Liverpool Dispensary, after which he entered the Colonial Emigration Service and visited Australia. Afterwards he went to India, where for 12 years he was surgeon-superintendent of the India Emigration Service. On retiring from the service about 35 years ago he went to reside at Plymouth and shortly afterwards was appointed on the honorary staff of the public dispensary of that town. When the British Medical Association visited Plymouth, about 30 years ago, he read a paper upon the treatment of pulmonary phthisis and particularly referred to the facilities which Dartmoor afforded for dealing with incipient cases of the disease. In his younger days Dr. Pearse did a noble work amongst the poor at the time of the small-pox and cholera epidemics at Plymouth, taking medical charge of two of the temporary hospitals which were erected in the town. Dr. Pearse, who was extremely popular in Plymouth, took an

active interest in municipal matters and will be much missed in the "Three Towns," where his robust and striking figure was so well known, and much sympathy is felt there with his widow, son, and two daughters. The funeral, which took place at Launceston, was largely attended.

EDGAR LEONARD FARNCOMBE, M.A., M.B.,
B.Ch. Oxon., M.R.C.S. Eng., L.R.C.P. Lond.

THE death is announced of Dr. Edgar Leonard Farncombe, which took place at Chudleigh, South Devon, on March 6th from pneumonia after five days' illness. The son of Mr. Richard Farncombe, a Birmingham medical man, Edgar Farncombe was educated at Malvern, St. John's College, Oxford, and St. Bartholomew's Hospital. He took the diplomas of M.R.C.S. Eng., L.R.C.P. Lond., in 1902 and three years later the degrees of M.A., M.B., B.Ch. Oxon. He had a successful career at St. Bartholomew's Hospital, where he held the posts of house surgeon and extern midwifery assistant in 1902 and 1903 and subsequently acted as resident clinical assistant at St. Luke's Hospital. After filling these appointments he went into private practice and at the time of his death he was in partnership with Mr. H. B. Walters at Chudleigh where he was as universally liked and respected as he had been at his school, college, and hospital. His untimely death at the age of 31 years will be mourned by his many friends who will always remember also his devotion to his profession, a devotion which without doubt cost him his life. Dr. Farncombe had been married but little over a year, his wife being the daughter of Mr. J. B. Manly of Birmingham.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Otto, professor of chemistry and pharmacology in the Brunswick Technical School.—Dr. Roland Stücher, privat-docent of gynecology in the University of Breslau, in consequence of an accident while tobogganing in the Zobtengebirge.

Medical News.

UNIVERSITY OF CAMBRIDGE.—Professor G. Sims Woodhead has been appointed to represent the University on the council of the Lister Institute of Preventive Medicine, in the place of the late Sir Michael Foster.—Dr. G. S. Graham-Smith has been appointed university lecturer in hygiene.—A university lecturer in pathology will shortly be appointed at a stipend of £100 a year. Applications had to be sent to the Vice-Chancellor by March 12th.—Professor Seward, F.R.S., will represent the University at the Tercentenary Festival to be held at Bologna in June, in honour of Ulisse Aldrovandi.—At the congregation on Feb. 28th C. Killick Trinity, was admitted to the M.D. degree.—The following degrees were conferred at a Congregation on March 9th:—

M.B.—J. K. Willis, Queens'.

M.B. and B.C.—J. F. Gaskell, Caius; and I. G. Back, Trinity Hall.

TRINITY COLLEGE, DUBLIN.—At the Final Examination in Medicine in Hilary term the following were successful:—

Part I.—W. E. M. Armstrong, Oliver Gogarty, William A. R. Speng, Alfred H. Smith, John C. Baker, and Robert de C. Wheeler.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bern*: Dr. Fritz de Quervain, privat-docent of Surgery, has been granted the title of Professor.—*Bordeaux*: Dr. Lande has been appointed Professor of Forensic Medicine.—*Göttingen*: Dr. Wilhelm Weber, privat-docent of Mental Diseases, has been granted the title of Professor.—*Heidelberg*: Dr. P. Ernst of Zürich has been appointed Professor of Pathological Anatomy and of General Pathology in succession to Dr. J. Arnold, resigned.—*Lourdain*: Dr. Vanderschueren has been appointed Professor of Ophthalmology in succession to the late Dr. E. Venneman.—*Munich*: Dr. Küster, Director of the Surgical Clinic, is about to retire.—*Pavia*: Dr. Giuseppe Frattini has been recognised as privat-docent of External Pathology.—*Prague (German University)*: Dr. Oswald Richter has been recognised as privat-docent of Anatomy and Physiology.—*P...*

Afranio Peixoto has been appointed Extraordinary Professor of Hygiene and Forensic Medicine.

At the general meeting of the Architectural Association, to be held at 18, Telford-street, S.W., on Friday, March 22nd, at 7.30 p.m., a paper will be read by Mr. Edwin T. Hall, Vice-President R.I.B.A., on Sanatoriums. It will be illustrated by many lantern slides and drawings lent by architects abroad.

UNIVERSITY OF DURHAM.—The members of the Convocation of the University have been invited by the Senate to a conference to be held in the Castle Hall of the University at Durham at 2.30 p.m. on March 20th, for the purpose of discussing the Draft Act for the Re-constitution of the University of Durham. Copies of this Draft Act may be obtained by any graduate on application to the Registrar, the University, Durham, or to the Secretary, Armstrong College, Newcastle-upon-Tyne.

THE MEDICAL SOCIETY OF LONDON.—The 134th anniversary dinner of the Medical Society of London was held at the Whitehall Rooms, Hôtel Métropole, on Wednesday last, March 13th. Professor T. Clifford Allbutt, in the unavoidable absence of the Bishop of Ripon, proposed the toast of "The Society," and in the course of his speech referred to the evolution of clinical, or bedside, research as an indispensable means of advancing medical knowledge. This, he said, must always be the criterion of the science of medicine. He also referred to the advantages which would be derived from the establishment of a Ministry of Health in England, separate from the existing complex and irresponsible organisation which existed. The President of the society, Mr. G. A. Ballance, in an eloquent speech, replied for the society. Dr. J. A. Osmered proposed the toast of "The Guests and the Kindred Societies," which was responded to by the Right Hon. Sydney Buxton, M.P., Postmaster-General, Sir Thomas Smith, Mr. J. Warrington Haward, President of the Royal Medical and Chirurgical Society, and Alderman and Sheriff T. B. Crosby, M.D. Sir Lauder Brunton proposed the toast of "The President of the Society" and Dr. F. de Havilland Hall gave that of "The Secretaries and Other Officers."

LEICESTER INFIRMARY EXTENSION: THE NEW EAST WING.—On Feb. 27th the Duke of Rutland, who was accompanied by the Duchess, laid the memorial stone of the new east wing in the presence of a large and representative gathering. Successive mayors of the borough have since 1856 been raising funds for extending the usefulness of the institution and the new wing marks another step in that direction. The original idea was to remodel the wing but the architects strongly advised that the wing should be entirely rebuilt. The new block is separated from the existing buildings by cross-ventilated lobbies, carried on bridges, which will allow of a free circulation of air between the wing and the other buildings. The new wing will provide accommodation for 99 beds, but pending the building of a nursing home will be set apart for the use of the nurses. The accommodation at first will therefore be for 65 beds. Each ward is planned in a similar manner. They will each contain 30 beds, with a window between each bed. In the centre of the wards there will be two small wards for two beds and one bed respectively, together with nurses' room, bathroom, linen room, patients' clothes room, clinical room, ward kitchen, and sanitary annex. At the south end of the larger wards provision is made for two sanitary annexes, one containing bath and lavatories and the other the nurses' work-room with the necessary conveniences. These annexes, it should be explained, are separated from the ward by a cross ventilated lobby carried on a bridge. There will be a bed lift from the basement to the top of the building and on the ground floor a verandah will run the whole length of the west side of the ward, thus enabling beds to be wheeled on to it from the ward. Verandahs will also be erected on each floor and the south end of the other wards. The heating arrangements will be an extension of the present vapour system, assisted by open ventilating stoves. The new wing when completed will cost £12,000. Donations have already been received amounting to over £26,000, this sum including £500 given by Mr. Samuel Odames, for many years a governor of the institution, whose generous gift was in celebration of his eighty-fourth birthday. The board of governors, thus having more than sufficient money to meet its needs, is now in a position to consider the

home in proximity to the infirmary at an estimated cost of £20,000. For the last few years the nurses connected with the institution have been housed on the outskirts of the town at a private residence leased for the purpose. The Duke of Rutland was presented by the architects, Messrs. Everard, Son, and Pick, with a silver trowel bearing the Rutland coat of arms. The mallet used by his Grace was presented by the contractor, Mr. James Chapman. At the conclusion of the proceedings a luncheon was given by the Mayor and Mayoress (Sir Edward and Lady Wood), the company numbering nearly 250.

PRESENTATIONS TO MEDICAL PRACTITIONERS.—On Feb. 12th Mr. John King, L.R.C.P. Edin., M.R.C.S. Eng., was entertained at a complimentary dinner by the Court Stamford Lodge of Foresters, Stratton (Cornwall), and was afterwards presented with a silver flower bowl on an ebony stand, bearing the following inscription: "Presented to John King, Esq., M.R.C.S., L.R.C.P., by the members of Court Stamford, A.O.F., on his retiring from the medical officership of the court, after 41 years' faithful and efficient service. Stratton, February, 1907."—On Feb. 23rd Mr. Gay Wotton Miller, L.R.C.P. Lond., M.R.C.S. Eng., of Pinhoe, Devon, was presented with a silver tea kettle, suitably inscribed, as a mark of respect and esteem by friends and patients in Pinhoe, Broadclyst, and Poltimore on the occasion of his leaving the district.

ROYAL DENTAL HOSPITAL OF LONDON.—The annual general meeting of the governors of this hospital was held on March 14th, Mr. William H. Ash being in the chair. The report of the committee of management showed the continued usefulness of the institution. The number of patients during the year was 27,693, their attendances being 53,505. The committee was pleased to be able to report a further increase in the annual subscriptions which it regarded as an important addition to the assured income of the hospital, while it was evidence of the interest taken by the public in the work in which the committee was engaged. During 1906 the hospital will complete the fiftieth year of its existence and a proposal to issue a special appeal during its jubilee year was under consideration. The committee was pleased to report that to a great extent through the aid received from legacies during the year and the liberality of the governors all the outstanding liabilities, including the debt (mentioned in the last report) of £1150 to the bankers, had been paid, but it regretted that the year wound up with liabilities due to bankers and tradesmen of a sum of £769. The hope was earnestly expressed that funds would soon be forthcoming to discharge these liabilities and also the fixed yearly payment of nearly £3000 to the Prudential Assurance Company, representing the interest on mortgage and part repayment of loan.

LONDON INTER-COLLEGIATE SCHOLARSHIPS BOARD.

—A combined examination for entrance scholarships and exhibitions tenable at University College, King's College, and the East London College will be held in London by the London Inter-Collegiate Scholarships Board on May 14th and following days. The competition, except for five of the scholarships, is limited to those who have not previously been students at any one of the colleges. No competitor can be elected to more than one scholarship or exhibition. All candidates must have passed the matriculation examination of the University of London, or must furnish some other evidence of having had a sound general education. Some scholarships are open to men only, some to women only, and others to men and women. Successful candidates will be required to enter the College by which they are elected in the October following the examination and to pursue a course of study approved by the authorities of the College. Application should be made to the secretary of the London Inter-Collegiate Scholarships Board, University College, Gower-street, London, W.C., for forms of entry, which must be filled in and returned together with a certificate of age and one of good conduct from the principal of the candidate's last school or other satisfactory reference not later than May 1st. The scholarships and exhibitions offered are as follows:—1. At University College four scholarships of £30 each in classics, modern languages, English history, mathematics, physics, chemistry, and elementary biology or botany. 2. At King's College five exhibitions and two scholarships (of different value, from £20 to £50 each) in classics, science, engineering, and arts. 3. At the East London College six

science scholarships and four arts scholarships, all of £40 each. For further particulars regarding the conditions of award, tenure, and payment application should be made to the secretary of the board, Mr. Alfred E. G. Atcoe, University College, Gower-street, London, W.C. For particulars of the work of the colleges at which scholarships are tenable application should be made to the respective college secretaries. The total value of the scholarships is over £1500.

THE ASSOCIATION OF CERTIFICATED DISPENSERS

—This association, which was founded a year ago, held its annual meeting on Feb. 23th at the Apothecaries' Hall, Water-lane, Blackfriars, London. The assistants to the apothecaries derive their status from the Apothecaries Act of 1815 and must not be confused with the Court of Assistants of the Worshipful Society of Apothecaries. During the meeting the secretary, Mr. A. Howell, in his report gave an account of the origin of the assistants' qualification and mentioned that an effort was to be made to introduce a Bill in Parliament for powers to alter the title of assistants and to improve the educational requirements of the candidates. Dr. F. S. Toogood then gave an address upon the Status of the Apothecaries' Assistant, in which he pointed out that in the dispensing of medicines for hospitals, infirmaries, and for private medical practitioners' dispensaries, no qualification as evidenced by certification after examination is required by law. He added that the Local Government Board and other public bodies had issued memoranda stating what certificates they were prepared to accept as evidence of proficiency and among these certificates the parchment granted to an assistant by the Apothecaries' Society figured. He urged upon the association the necessity of securing full recognition of this certificate and to be prepared to guard it against attacks from other certificate-granting bodies.

MANCHESTER EYE AND EAR HOSPITAL.

—This hospital was conducted at 25, St. John-street, Manchester, for nearly 20 years by the late Dr. David McKeown with a lay committee. Dr. McKeown died recently and a body of trustees who hold funds given specifically to this hospital for its particular work decided that the hospital should be carried on in the same manner as the other public hospitals of Manchester and have since elected two honorary aural surgeons and two honorary ophthalmic surgeons. These gentlemen before their appointment were assured by the trustees that certain conditions referring to the conduct of the hospital and the publication of proper reports and accounts would be fulfilled. The names of those appointed were, as honorary ophthalmic surgeons, Dr. Griffiths Apthorn and Mr. G. Aubrey Jelly; and as honorary aural surgeons, Dr. J. A. Knowles Renshaw and Mr. F. H. Westmacott. A medical officer and anesthetist will also be appointed to assist the honorary staff. In 1906 12 beds available for patients were almost continuously occupied, while the out-patient department had an attendance of 20,613, which included 2654 new cases. The accounts of the hospital are being audited and a provisional committee is being formed. The new constitution of the hospital will be announced at a public meeting the date of which will be notified in the public press. It is intended to establish a system of post-graduate clinical instruction and medical men are invited to visit the hospital at any time during the hours of attendance of the staff. Mr. Westmacott is the chairman of the medical board and Mr. J. D. Sutcliffe is the honorary treasurer and chairman *pro tempore*.

SIXTH INTERNATIONAL DERMATOLOGICAL CONGRESS.

—The Sixth International Dermatological Congress will be held from Sept. 9th to 14th at the Academy of Medicine, 17, West 43rd-street, New York, under the following regulations:—1. The meetings will be open to the public. 2. Any member of the medical profession in good standing may become a member of the Congress by registering with the secretary-general at the time of the meeting or previously, or with the secretaries of the respective countries. The fee for membership shall be five dollars (£1), payable to the secretary-general in New York or to the foreign secretaries. 3. Papers should be presented in writing in the English, French, German, Spanish, or Italian languages, and may be discussed in the language most familiar to the speaker. 20 minutes will be allowed to each person selected to present the questions proposed by the committee, and ten minutes to readers of voluntary papers. Five minutes will be granted to any member for discussion of papers. Members desiring to

esent papers should announce to the secretary-general the date before May 1st and should send an abstract of the same to him before that date. A full copy of every paper presented should be given to the secretary of the session immediately after it is read. 4. Precedence in debate will be given to members who announce beforehand their desire to take part in it. Papers will be presented in the order as given on the official programme. 5. The proceedings of the Congress will be published, and each member will be entitled to a copy. 6. Clinical sessions will, on certain days, precede one for the presentation of papers, at which proper time will be allowed for the formal discussion of important cases. Time will also be allowed for the exhibition of drawings, paintings, photographs, models, microscopical demonstrations, and apparatus relating to dermatology. The subjects for discussion already arranged for are: (1) The Etiological Relationship of Organisms found in the Skin in Exanthemata; (2) Tropical Diseases of the Skin; and (3) (a) The Possibility of Immunisation against Syphilis, and (b) The Present Status of Our Knowledge of the Parasitology of Syphilis. A full programme will be sent in June to all who accept membership or who signify their intention to attend the Congress; also details concerning transportation, registration, &c. Any further information may be obtained from Dr. John A. Fordyce, Secretary-General, 80, West 40th-street, New York City.

NATIONAL HOSPITAL FOR THE PARALYSED AND PILEPIC.—Sir Edgar Speyer presided on March 11th at the annual dinner of this hospital, which was held at the Hotel Métropole, London. In proposing "Success to the hospital," the chairman pleaded for funds to carry on the work of the institution. The annual cost of maintenance was £17,000 and the sum needed to be raised every year for benefactions was £12,800. Owing to failure in receipts for legacies, which in 1906 were much below the average, the hospital had to borrow £4000 to make up the shortage between income and expenditure. It was urgently necessary to repay that sum and thus to enable the board of management to maintain the work at its existing level. This toast was acknowledged by Mr. F. Macmillan. Sir Victor Horsley then submitted the toast of "Success to the Nervous Diseases Research Fund." This fund was founded by the board of management to promote and to carry on research into the origin and cure of diseases of the nervous system. Sir Victor Horsley referred to the enormous importance of the study of the bacteriology of nervous diseases, in which branch of science the National Hospital was leading the way. Other speakers were Mr. J. Danvers Power, Sir John Paget, Sir William R. Gowers, and Sir Felix Semon.

UNIVERSITY OF OXFORD.—The Vice-Chancellor of the University of Oxford has received from the Master and Fellows of the College of the Great Hall of the University, commonly called University College in the University of Oxford, a communication to the effect that they have determined to establish and to award a prize for the furtherance of medical science in the University to be known as "The Radcliffe Prize." The prize shall be of the value of £50. It shall be awarded every second year alternately with the Rolleston prize, provided a sufficiently deserving memoir be submitted for adjudication, by the Master and Fellows of University College at their stated general meeting on March 20th for research in any branch of medical science, comprised under the following heads: Human anatomy, physiology, pharmacology, pathology, medicine, surgery, obstetrics, gynaecology, forensic medicine, and hygiene. The prize shall be open to all graduates of the University who shall have proceeded, or shall be proceeding, to a medical degree in the University. Candidates shall not have exceeded 12 years from the date of passing the last examination for the degree of Bachelor of Arts, and shall not, at the date of application, be Fellows on the foundation of Dr. John Radcliffe. Candidates shall send in their memoirs to the Secretary to the Boards of Faculties on or before Dec. 1st in the year preceding the date of the award. The judge shall be appointed by the Board of the Faculty of Medicine and shall act together with the Regius professor of medicine, or a deputy appointed by him, and with a judge appointed by University College. The judges may call in an assessor or two assessors. They shall report to the Master of University College and to the Board of the Faculty of Medicine on or before March 1st ensuing. No memoir

for which any University prize has already been awarded shall be admitted to competition for the Radcliffe prize, and the prize shall not be awarded more than once to the same candidate. The Board of the Faculty of Medicine shall cause to be published in the usual manner due notice (1) of the date for sending in the competing memoirs, and (2) of the conditions of the award; and the Board shall have power on any such occasion to announce that the prize will on that occasion be awarded for research in some particular branch, or branches, of medical science, as above enumerated, provided that such preference be not given to the same subject more than once in any three consecutive competitions. The above regulations notwithstanding, the first award shall, if possible, be made at the stated general meeting of the Master and Fellows of University College on Oct. 28th next ensuing, and the competing memoirs shall be sent in to the Secretary to the Boards of Faculties on or before June 1st, 1907.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Royal Commission on Sewage Disposal.

THE Civil Service Estimates for the year 1907-08, which are now published, show the sums which the Government has allocated to various temporary commissions, committees, and inquiries. A sum of £4687 is put down for the expenses of the Royal Commission on Sewage Disposal. This is the same amount as it received in 1906-07. This Commission has made several reports of an elaborate nature, one of them dealing with the dissemination of disease by means of contaminated shell fish and other evils caused by the discharge of unpurified sewage and trade effluents into tidal waters. The systematic investigation of a number of artificial processes of purifying sewage for the purpose of ascertaining their relative value in different circumstances has, according to the statement in the Estimates, now been completed. The report of the whole of this work is now in a forward state and the Commission hopes to present it in the course of a few months. The Commission has not been appointed for any definite period and it is impossible to state yet when a final report on the questions submitted to it will be made. Some of these questions can only be properly determined after careful and prolonged scientific research.

The Royal Commission on Tuberculosis.

For the needs of the Royal Commission on Tuberculosis a sum of £5664 is set down in the Estimates of 1907-08. This amount is £735 lower than the estimate of 1906-07. It is estimated that £7673 will be required in the coming year for scientific investigations, including the expenses of the experimental farms, buildings, and laboratories, and the remuneration of scientific experts. The Royal Commission on Tuberculosis was appointed in 1901 to inquire with respect to tuberculosis, whether the disease in animals and man is the same, whether animals and man can be reciprocally infected with it, and under what conditions, if at all, the transmission of the disease from animals to man takes place. In February the Commissioners issued a second interim report dealing fully with the work that had been done since the commencement. An appendix to this report, in four volumes, containing details of the experimental work is now in the press and will be issued as soon as it is ready for publication. The Commission was not appointed for any fixed period and it is impossible to say definitely when it will be in a position to give a final answer to all the terms of the reference.

The Royal Commission on the Care of the Feeble minded.

The members of the Royal Commission on the Care and Control of the Feeble minded hope that their labours will be finally completed by the end of June next. The estimate of £393 is based on this assumption. In the year 1906-07 a sum of £4306 was set apart for the expenses of this Commission. Of that amount £260 were put down under the heading of remuneration to medical investigators. Nothing is provided for this purpose in the new Estimates. A brief survey of the work of the Commission is given in a note to the Estimates. It is stated that the Commission was appointed in September, 1904, and the first sitting was held at the end of the following month. The reference to the Commission was extended on Nov. 2nd, 1906, to inquire into the constitution, jurisdiction, and working of the Commission in Lunacy and of other lunacy authorities in England and Wales, and into the expediency of amending the same or adopting some other system of supervising the care of lunatics and mental defectives and to report as to any amendment in that law which in its opinion should be adopted. Up to the date of the extended reference 51 meetings of the Commission were held and 201 witnesses were examined. Since the date of the extended reference, 12 meetings have been held and 35 witnesses examined. Some of the Commissioners

have visited America, Holland, Belgium, France, Germany, Switzerland, Scotland, Ireland (twice), and numerous institutions in England and Wales. Medical investigations have been carried out by specially appointed medical men into the statistics of feeble-minded and defective persons in Manchester, Birmingham, Hull, Glasgow, Stoke-on-Trent, Lincolnshire, Nottinghamshire, Durham, Carmarthen, Carnarvon, Somersetshire, Wiltshire, and four districts in Ireland.

The Royal Commission on Vivisection.

For the Royal Commission on Vivisection the Estimates set apart £1058 for the year 1907-08. This Commission was only appointed in September last and as over a hundred witnesses have already applied to be heard the inquiry may be expected to last for the whole, or nearly the whole, of the financial year 1907-08.

The Education (Provision of Meals) (Scotland) Bill.

Mr. SINGLAIR, the Secretary for Scotland, on Tuesday received a deputation representing the school boards of Edinburgh, Dundee, Leith, and several other smaller Scottish towns, who protested against Parliament passing such a Bill as the Education (Provision of Meals) (Scotland) Bill because it placed the feeding of school children on the rates. After hearing the views of the deputation, Mr. SINGLAIR suggested that a committee should confer with Mr. SMITH, the permanent head of the Scottish Education Department, with the object of overcoming some of their objections to the Bill. This course was adopted.

Deaths from Starvation.

On the motion of Mr. TALBOT a return has been granted by the Local Government Board showing the number of deaths in the Administrative County of London in the year 1906 upon which a coroner's jury has returned a verdict of death from starvation or death accelerated by privation.

Salaries of Medical Officers of Health.

Mr. JOHN BURNS has promised Sir JOHN DICKSON-POYNTER a return showing the salaries of the medical officer of health and of the inspector of nuisances employed by each of the rural district councils in three English counties to be selected. The return will also show the number of cases in which a rural district council in any of the three selected councils has obtained under the Local Government Act, 1888, from the county council, out of the Exchequer contribution account, payment of half the salaries of its medical officer and its inspector of nuisances.

HOUSE OF LORDS.

THURSDAY, MARCH 7TH.

Public Health Legislation.

The Earl of Onslow addressed a question to His Majesty's Government whether in its opinion the time had not arrived for further general public health legislation. He said that since 1890 there had been no general Act dealing with police and sanitary matters, with the exception of some legislation which dealt with isolation hospitals and infectious diseases. However, there were a number of local authorities which had desired to obtain further powers than those given in the general Act. The result was that fresh clauses were brought in, in private Bills dealing with these matters. These clauses might, he thought, be embodied in a Public Health Act which might be applied to those parts of the country where the local authorities were desirous of adopting it. In the three years 1903-06, there had been a clause prohibiting persons suffering from an infectious disease from personally carrying on a business introduced into 40 private Bills, and a clause regulating the manufacture and sale of ice-cream had been embodied in many others. It was an accepted principle in dealing with private Bills, that when a clause of this sort had been granted to a number of local authorities it was very rarely refused to other local authorities of equal importance who applied for it. However, the drawback was that these local authorities had to go to the expense of promoting Bills in Parliament in order to obtain the extended powers. He would instance to their lordships a private Bill containing 290 clauses which was before the House. What the expenses of that Bill would be he would be afraid to say. However, it was a fact that if a new Public Health Bill of the kind to which he had alluded were passed into law at least from one-third to one-half of the clauses of this lengthy private Bill would be rendered unnecessary. The same remark applied to other Bills. Now what he would suggest to His Majesty's Government was that if a Bill on public health matters were introduced in either House of Parliament by someone who was not a member of the Government, but who was specially qualified to deal with the subject, it should do what it could to assist the measure through Parliament, and that in the course of its passage it should refer it to a joint committee of both Houses consisting of those who had been accustomed to deal with police and sanitary clauses.

Earl OARINGTON replied on behalf of the Government. He said that the proposal made by the noble earl would be a saving to the ratepayers. However, the question raised by him was not entirely free from difficulty. A Bill on the subject had been brought into the House of Commons last year by a private Member. It consisted of 101 clauses referring to a great number of subjects, such as infectious diseases, milk, common lodging-houses, recreation grounds, &c. It was necessary that careful consideration should be given how far such a measure was capable of adoption. He was happy to be able to say that no last word on this subject had been said by the President of the Local Government Board. He did not think that Mr. Burns would wish to bring forward any excuse as to the congestion of business to prevent him from introducing any reform of this sort which would be to the great advantage of the country. The President of the Local Government Board quite realised the desirability of giving greater sanitary powers to local authorities. He had a very warm sympathy with the objects which the Earl of Onslow had in view. At present his right honourable friend was unable to give any pledge on the subject,

although he was giving it careful consideration with a view to action being taken with regard to it. He hoped that answer would not be unsatisfactory to the noble earl.

The Earl of Onslow: The question I asked was whether, if such a measure were brought in by a private Member, His Majesty's Government would give it its sympathy and refer it to a joint committee with a view of getting it through this session.

Earl OARINGTON: I wish I could answer that question, but at present I cannot.

The subject then dropped.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 6TH.

The Sale of Tuberculous Milk.

Mr. H. H. MARKS asked the President of the Local Government Board whether, in view of the statement in the second interim report of the Royal Commission appointed to inquire into the relations of human and animal tuberculosis, that cow's milk containing bovine tubercle bacilli was clearly a cause of tuberculosis, and of fatal tuberculosis, in man, he would consider the necessity of measures more stringent than those at present enforced being taken to prevent the sale or the consumption of such milk.—Mr. JOHN BURNS: I am giving consideration to the report of the Royal Commission and in connexion with it I will bear in mind the point to which the honourable Member refers.

THURSDAY, MARCH 7TH.

Defective Eyesight in Irish School Children.

Mr. JOHN REDMOND asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the promise given by Mr. Bryce on Nov. 18th, 1906, that he would without delay commend to the consideration of the Commissioners of National Education in Ireland the necessity of collecting information on the subject of the alleged increase of defective eyesight of children attending public schools in Ireland; whether any steps had been taken in this matter; and whether the Commissioners proposed to make any arrangements, such as existed in England, for the testing of the sight of these children and for guarding against any further increase of the scourge of defective eyesight.—Mr. BIRRELL answered: My attention has been called to this matter. The Commissioners of National Education inform me that they have issued a number of queries to the teachers relative to the eyesight of children attending national schools. The teachers' statements will be carefully tabulated and considered when received. The Commissioners state that they have no means of providing for the testing of the children's sight. The steps which have been taken in this respect in England have been instituted by local authorities of their own motion.

The Butter Bill.

Answering Mr. W. REDMOND, Sir EDWARD STRACHEY said: I am afraid that no opportunity will be found for the second reading of the Butter Bill before the Easter recess, but it is hoped that the second reading of the Bill may be obtained soon after. The Bill does not affect the amount of moisture permissible in Irish salt brine butter unless it has been blended or re-worked in a factory.

The Dietary of Paupers.

Mr. JOWETT asked the President of the Local Government Board whether he had read the observations contained in the report of Mr. E. A. Baginval, one of the Board's inspectors, on the scale and standard of food in the workhouses, which he thought was too high. In the course of which he stated, on the authority of some alleged scientific discoveries, that the body adapted itself rapidly to any change of diet, and advised that careful attention to that fact should be given when paupers were being fed at the public expense; whether it was the intention of the Board to act on the scientific discoveries mentioned by Mr. Baginval and experiment upon paupers in the matter of food; and having regard to Mr. Baginval's further observation to the effect that cheap food in the shape of stale cheese, bread bits, bacon and liver bits, and bones from the butchers' shops were available for human food in all large towns, whether he would say if these inquiries were made with his sanction.—Mr. JOHN BURNS replied: I have seen the observations in Mr. Baginval's report. The Local Government Board has no intention to experiment upon paupers in the matter of food. No sanction on the part of the Board was given to his making the inquiries referred to in the question, nor was any such sanction necessary. He acted in the matter in the exercise of his own discretion.

MONDAY, MARCH 11TH.

Food Inspection in London.

Mr. ALDEN asked the President of the Local Government Board whether the Public Health (Regulations as to Food) Bill would contain any scheme for creating a uniform system of food and meat inspection throughout the whole of the London area.—Mr. JOHN BURNS replied: The Bill which is now before the House does not itself prescribe schemes. It enables regulations to be made by the Local Government Board for the prevention of danger to public health from the importation, preparation, storage, and distribution of food, and one of its objects is thereby to secure uniformity and efficiency of inspection in the case of particular foods or classes of foods for which control is necessary in the interests of public health whether in London or elsewhere.

The Sanitary Condition of Lewis.

Mr. WEIR asked the Secretary for Scotland whether he was aware that in the last report of the Local Government Board for Scotland it was stated that the present condition of affairs in the Island of Lewis was not to be allowed to continue, and that it was essential that there should be in the district a proper staff consisting of a medical officer of health and at least one sanitary inspector, giving their whole time to their duties.—Mr. SINGLAIR answered: I am well aware of the facts. The matter is under the serious consideration of all the departments concerned, but, as my honourable friend knows, it is not a simple problem, and I am not at present able to make any statement. In answer to a further question by Mr. WEIR, Mr. SINGLAIR said that no portion of the general aid grant for Scotland for the financial year 1907-08 would be specifically set aside to meet the public health requirements of the Island of Lewis, but it would be open to any school board to apply its share of the grant or any portion of it to improving the health condition of its schools.

White Phosphorus in Matches.

In the course of a long written answer to Sir CHARLES DILKE, dealing with the number of persons employed in match factories in this country, Mr. GLADSTONE stated that many of the persons employed in the factories which manufactured white phosphorus matches were not exposed to the phosphorus. He had laid upon the table of the House a report on the recent case of phosphorus poisoning at Messrs. Morelands which also contained some observations upon the general question. He was considering what action to take upon it but he was unable at present to say whether a further report would prove to be necessary.

The Inspection of Boneless Meat.

Mr. FIELD asked the President of the Local Government Board whether he had made any arrangement for the inspection of imported boneless meat; whether he had made any inquiries respecting how it was prepared; whether it was inspected before being frozen; whether he could state how it was disposed of in this country; and whether it was used extensively in the manufacture of pork sausages.—Mr. JOHN BRASS replied (by written answer): I have no authority to make an arrangement of the kind referred to in the first part of the question in the absence of such powers as are proposed to be given by the Public Health (Regulations as to Food) Bill now before the House. I have caused inquiries to be made as to the preparation of boneless meat. It is, of course, liable to whatever inspection is required by the laws of the country from which it comes, and packages of it frequently bear labels stating that inspection has taken place, presumably before freezing. I understand that imported boneless meat is supplied to makers of various meat preparations in this country and that imported boneless pork is employed in the manufacture of pork sausages. The Local Government Board's Inspector of foods ascertained that in 1905 the importation of the kind of boneless pork specially used for sausage making amounted to about 130 tons.

Epidemics in a Workhouse School.

Sir WALTER FOSTER asked the President of the Local Government Board whether he was aware that, owing to continued overcrowding in the workhouse school belonging to the Brentford board of guardians, an outbreak of ophthalmia occurred in November, 1904; that in September, 1905, a second outbreak, affecting over 150 children, occurred; and that during January last an outbreak of diphtheria affecting over 50 children, some of whom died, occurred; and whether he would urge upon the guardians the necessity of boarding out within and beyond the union of children eligible for that method, and of hastening the arrangements for placing others in scattered homes within the union in order to relieve the long-standing overcrowding of the school.—Mr. JOHN BRASS (by means of a written answer) replied: I am aware of the facts as to the outbreaks referred to and that from time to time there has been overcrowding in the school. I am very desirous that measures should be taken to prevent future overcrowding in respect of the children, and I understand that the guardians have had various schemes before them for providing further accommodation for them. They have met with difficulties in the matter, but various arrangements have been made to reduce the pressure, and steps are now being taken to provide certain scattered homes. I shall not lose sight of the subject.

TUESDAY, MARCH 12TH.

A Case of Phosphoric Necrosis.

Mr. ARTHUR HENDERSON asked the Secretary of State for the Home Department whether the special rules for match factories dealt with cases in which a worker was in such a state of health as to incur danger from his work; if so, why, in the recent fatal case, a man, stated to have long been known to have the seeds of necrosis in his system, was exposed to phosphorus poisoning, and at what point the dentist had first referred the case to the certifying surgeon; and whether at any time this man was reported by His Majesty's Inspector of factories as having the seeds of necrosis in his system.—Mr. GLADSTONE answered: Yes, sir. The rules provide for periodical examination by the dentist whose duty it is to suspend the worker whenever he finds danger of necrosis by reason of bad teeth or exposure of the jaw, and, moreover, to report to the certifying surgeon if there be inflammation or necrosis of the jaw or such a state of health as to involve danger of necrosis. As regards the second part of the question, I perhaps conveyed a wrong impression in the reply I gave to Sir Charles Dilke on Feb. 25th. No suspicion of necrosis arose in the case referred to until after the extraction of a tooth on Dec. 19th last, when the necrosis was found and the case was at once referred by the dentist to the certifying surgeon. It was the discovery then made, when taken in connexion with the history of the fracture of the man's leg, which led to the conclusion that phosphorus had begun to affect his system long before.

The Inspection of Imported Meat.

Sir WILLIAM BULL asked the President of the Local Government Board what action, if any, he proposed to take on Consul Finn's report on the Chicago meat scandals.—Dr. MACMURRAY (who replied on behalf of Mr. BULL) said:—My right honourable friend has introduced a Bill which, if it passes into law, will enable the Local Government Board to make regulations with regard to the importation, preparation, storage, and distribution of foods. In adopting this course he has taken into consideration not only this report but also information collected from various sources regarding the wholesomeness of the imported meat which is especially in question.

WEDNESDAY, MARCH 13TH.

The Teaching of Hygiene.

In the course of the debate on the report of the Vote of Account with respect to the Civil Service and Revenue Departments, Dr. V. H. HUTCHINGS advocated the compulsory teaching of hygiene and temperance in all elementary schools. He said that the Committee on Physical Deterioration came to the conclusion that the three causes of degeneration in this country were bad food, bad housing, and alcoholism. It was high time that the Board of Education took steps to remedy this unhappy and unsatisfactory state of things. Two years ago a very large number of medical men signed a petition asking Parliament to make the teaching of hygiene compulsory. He regretted that this had not been done. He urged that it should be made a compulsory subject in the Education Code. The

Education Department should encourage the teaching of hygiene. He also thought that the Board of Education should have a bureau of medical men to help with advice, not only on this subject but on other matters.

Mr. McKENNA (President of the Board of Education) in reply said that if temperance and hygiene, and particularly medical hygiene, were to be compulsorily taught in schools they must have teachers who were competent to give the instruction. At present hygiene was an optional subject. He would give his most earnest attention to the subject. Everything was being done to qualify teachers for teaching it. He could add nothing more to his statement at present.

BOOKS, ETC., RECEIVED.

ALCAN, FÉLIX, Boulevard Saint-Germain, 108, Paris.

Polyclinique Physiothérapique. Effets obtenus par la Bainéation Carbogazeuse (Spécialisation fonctionnelle de Royat) chez les Malades hypertendus et les Malades Insuffisants du Cœur. Par L. Landouzy, Professeur de la Clinique Laennec à la Faculté de Médecine de Paris et Jean Heitz, Ancien Interne des Hôpitaux de Paris, Médecin Consultant à Royat. Price not stated.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent Garden, London, W.C.

Antiseptic Methods for Surgical Nurses and Dressers. By Harold Upcott, F.R.C.S. Price 2s. 6d. net.

Organic and Functional Nervous Diseases. By M. Allen Starr, M.D., Ph.D., LL.D., Sc.D., Professor of Neurology, College of Physicians and Surgeons, the Medical Department of Columbia University in the City of New York. Second edition, thoroughly revised. Price 25s. net.

BARTZ, JOHANN AMBROSIS, Leipzig.

Taschenbuch der mikroskopischen Technik der Protistenuntersuchung. Von Dr. S. von Prowazek. Price 12s.

CHAPEMAN AND HALL, LIMITED, London.

Hypnotism and Spiritism. A Critical and Medical Study. By Dr. Joseph Lippert, Chief Physician to His Holiness Leo XIII. and Pius X., Professor of Practical Anthropology at the Academy of the Historic-Judicial Conferences at Rome. Translated by Mrs. Philip Gibbs. Price 5s. net.

FISCHER, GUSTAV, Jena.

Über traumatische Entstehung innerer Krankheiten. Klinische Studien mit Berücksichtigung der Unfall-Begutachtung. Von Dr. Richard Stern, a.o. Professor, Direktor der Medizinischen Universitäts-Poliklinik und Primararzt am Allerheiligen-Hospital zu Breslau. Erstes Heft: Infektions-Krankheiten, Krankheiten der Kreislauforgane. Zweite neu bearbeitete Auflage. Price not stated.

Tryptanosenkrankheiten (Schlafkrankheit) und Kala-azar. Von Prof. Martini, Marine-Oberstabsarzt. Price not stated.

HODDER AND STOUGHTON, 21, Paternoster-row, London, E.C.

The Medical Epitome Series. Pathology, General and Special. A Manual for Students and Practitioners. By John Stenhouse, M.A., B.Sc. Edin., M.B. Tor., formerly Demonstrator of Pathology, University of Toronto, Toronto, Can., and John Ferguson, M.A., M.D. Tor., Senior Physician, Western Hospital, formerly Senior Demonstrator of Anatomy, University of Toronto, Toronto, Can. Series edited by Victor Cox Pedersen, A.M., M.D., Lecturer in Surgery at the New York Polyclinic Medical School and Hospital. Price 4s. net.

HOEPLI, ULBICO, Milano.

Mario Valtorta e Gino Fanoli. La Tuberculosis. Con Prefazione del Prof. Augusto Murri. Price L.3.

Manuale Pratico dell'Igienista. Pel Dottori Clemente Tonzigi, Libero Docente d'Igiene nella R. Università di Padova e Medico scolastico del Comune e Guido Q. Ruzza, Libero Docente d'Igiene e Aiuto nell'Istituto d'Igiene della R. Università di Bologna. Con Prefazione del Professore A. Serafini, Direttore dell'Istituto d'Igiene della R. Università di Padova. Price L.5.

KARGER, S., Karlstrasse, 15, Berlin. (WILLIAMS AND NORBERT, London.)

Beiträge zur Diagnostik und Therapie der Geschwülste im Bereich des Zentralen Nervensystems. Von Prof. Dr. H. Oppenheim in Berlin. Price not stated.

Nierenchirurgie. Ein Handbuch für Praktiker. Von Prof. Dr. C. Garra, Geh.-Med.-Rat., Direktor der Chirurgischen Klinik der Universität Breslau und Dr. O. Ehrhardt, Privatdozent für Chirurgie an der Universität Königsberg i. Pr. Price not stated.

EMPTON, HENRY, 13, Finsbury-street, Holborn, London, E.C., and 40 and 42, University-avenue, Glasgow.

The Practitioner's Library. The Practice of Obstetrics. In Original Contributions by American Authors. Edited by Reuben Peterson, A.B., M.D., Professor of Obstetrics and Gynecology in the University of Michigan, Ann Arbor, Mich. Price 31s. 6d. net.

Degeneration in Families: Observations in a Lunatic Asylum. By Fr. Laage, M.D., Medical Superintendent of the Lunatic Asylum near Middelfart, Denmark. Authorized Translation from the Danish by G. Chr. Sonne. Price 3s. 6d. net.

LEWIS, H. E., 136, Gower-street, London, W.C.

Injuries of the Eyes of the Employed and the Workmen's Compensation Act. Problems in Prognosis. By W. M. Beaumont, Surgeon to the Bath Eye Infirmary. Price 5s.

MACMILLAN AND CO., LIMITED, London.

A System of Medicine. By Many Writers. Edited by Thomas Clifford Allbutt, M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., F.L.S., F.S.A., and Humphry Davy Rolleston, M.A., M.D., F.R.C.P. Vol. II. Part II. Tropical Diseases and Animal Parasites. Price 25s. net.

MAISON ET CIE, 120, Boulevard Saint-Germain, Paris.

Traité du Paludisme. Par A. Laveran, Membre de l'Institut et de l'Académie de Médecine. Deuxième Edition. Price Fr. 12.

POINAT, A., Rue Jacob, 12, Paris.

Traité des Maladies de la Voix Chantée. Par le Dr. Antoine Perrillère, Ancien Interne des Hôpitaux de Lyon. Price Fr. 8.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, London, S.W.

List of the Fellows, Members, Extra-Licentates and Licentates of the Royal College of Physicians of London and of Holders of the Diploma in Public Health granted jointly by the Royal Colleges of Physicians and Surgeons, MCMVII. Price not stated.

TAYLOR AND FRANCIS, Red Lion-court, Fleet-street, London, E.C.

Appendix XX. to the Second Edition of the Descriptive Catalogue of the Pathological Specimens contained in the Museum of the Royal College of Surgeons of England. By Samuel G. Shattock, Pathological Curator of the Museum. Price not stated.

WOOD, WILLIAM, AND COMPANY, New York.

American Practice of Surgery. A Complete System of the Science and Art of Surgery, by Representative Surgeons of the United States and Canada. Editors: Joseph D. Bryant, M.D., and Albert H. Buck, M.D., of New York City. Complete in Eight Volumes. Sold only by subscription at \$7, \$3, or \$9 per volume, according to binding.

WRIGHT, JOHN, AND CO., Bristol. (SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.)

The Medical Annual: A Year Book of Treatment and Practitioner's Index. 1907. Twenty-fifth Year. Price 7s. 6d. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week such information for gratuitous publication.

ARGLES, ERNEST E., M.R.C.S., L.R.C.P. Lond., has been appointed Anaesthetist to the Hospital for Sick Children, Great Ormond-street.

COWPER, JOHN, M.B., C.M. Edin., has been re-appointed Medical Officer of Health of Shanklin.

GOODING, MATTHEW RICHARD, L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health for the Barnstaple Port Sanitary Authority.

HAY, K. R., M.B. Camb., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Physician to the Westminster General Dispensary.

HUBLEY, JAMES, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Magor District by the Newport (Mon.) Board of Guardians.

HUSTLER, G. H., M.B., Ch.B. Leeds, has been appointed Medical Officer to Hospital Ship (Royal National Mission to Deep Sea Fishermen).

LINDSAY, D. LAUDER, L.R.C.P. & S. Edin., L.F.P.S. Glasg., L.M., has been appointed Surgeon to the Police at Aldershot, Hants.

RISDON, GEORGE OWEN, L.R.C.P. Lond., M.R.C.S., L.S.A., has been re-appointed Medical Officer for the Second District by the Wells (Somerset) Board of Guardians.

RODGERS, J. W., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Dorking District of the county of Surrey.

SCOTT, H. M., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Enniscrone District of the county of Sligo.

STRANGMAN, O. LUCIUS, L.R.C.P. & S. Edin., has been appointed Health Officer, Port Darwin, South Australia, and District Registrar of Births, Deaths, and Marriages for the District of Palmerston.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM, QUEEN'S HOSPITAL.—Obstetric and Ophthalmic House Surgeon, for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

BIRMINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Surgical Officer. Salary £104 per annum, with apartments, rations, &c.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Senior House Surgeon and Junior House Surgeon. Salary £110 and £70 per annum respectively, with board, washing, &c.

CAMBERWELL PROVIDENT DISPENSARY.—Medical Officer.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—Assistant Surgeon.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park E.—House Physician for six months. Salary at rate of £50 per annum, with board and residence.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon for six months. Salary £60 per annum, with rooms, board, washing, and attendance.

CROYDON GENERAL HOSPITAL.—Junior House Surgeon. Salary £60, with board, laundry, and residence.

DEBRY BOROUGH ASYLUM.—Assistant Medical Officer. Salary £120 per annum, with board and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £50 a year, with board, lodging, and laundry.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £25 per annum, with board and washing.

DUNDEE ROYAL INFIRMARY.—Resident Medical Assistant. Salary at rate of £20 per annum. Also Non-Resident Obstetric Assistant. Salary at rate of £30 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Clinical Assistants for three months.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board, lodging, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway.—Senior House Surgeon, Senior House Physician, Two Junior House Surgeons, and One Junior House Physician. Salary of Senior Officers £50 per annum, and of Junior Officers £31 per annum, with board, lodging, and washing.

HUDDERSFIELD INFIRMARY.—Junior House Surgeon. Salary £50 per annum, with board, lodging, and washing.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Assistant House Surgeon. Salary £75 per annum, with residence, board, and washing.

LEAMINGTON, WARNEFORD HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and apartments.

LEEDS GENERAL INFIRMARY.—Resident Casualty Officer. Salary £125 per annum, with board, lodging, and washing.

LEEDS PUBLIC DISPENSARY.—Two Junior Resident Medical Officers. Salary £100 per annum, with board and lodging.

LEICESTERSHIRE AND RUTLAND ASYLUM, Leicester.—Second Assistant Officer, unmarried. Salary £130, rising to £161, with apartments, board, and washing.

MANCHESTER WORKHOUSE, Crumpsall.—Assistant Medical Officer, unmarried. Salary £110 per annum, with apartments, fire, light, washing, and attendance.

METROPOLITAN ASYLUMS BOARD.—Third Assistant Medical Officer, unmarried. Salary £150 per annum, rising to £170, with rations, lodging, attendance, and washing.

NORTHAMPTON GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £90 a year, with apartments, board, washing, and attendance.

NOTTINGHAM CHILDREN'S HOSPITAL.—House Surgeon (female) for six months. Salary at rate of £80 per annum, with board, residence, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Refraction Assistant. Salary £25 a year, with lunch.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Surgeon. Salary £100 per annum, with rooms, board, and washing. Also Junior House Surgeon for six months. Salary at rate of £50 per annum, with rooms, board, and washing.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.

STOKEPORT INFIRMARY.—Assistant House and Visiting Surgeon. Salary £80 per annum, with board, washing, and residence.

STOKE-ON-TRENT, INFECTIOUS DISEASES HOSPITAL, Bucknall.—Resident Assistant Medical Officer (female). Salary £100 per annum, with apartments, board, washing, and attendance.

TOTTENHAM HOSPITAL, London, N.—Honorary Medical and Surgical Registrars.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Salary £30, with board and lodging.

WANDSWORTH UNION INFIRMARY, St. John's Hill, Clapham Junction.—Junior Assistant Medical Officer, unmarried, for six months. Salary at rate of £100 a year, with board, lodging, and washing.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon, unmarried. Salary £50 per annum, with board, residence, and washing.

WRIGHTHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House Surgeon. Salary £120 a year, with board and lodging.

YORK, NORTH RIDING LUNATIC ASYLUM, Oulton.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, rising to £200, with rooms, board, attendance, &c.

Births, Marriages, and Deaths.

BIRTHS.

BEATH.—On March 8th, at Barnard House, Bat's, the wife of David Leslie Beath, M.R.C.S., of a son.

FLETCHER.—On March 8th, at Harley-street, W., the wife of Herbert Morley Fletcher, M.D., of a daughter.

STUART.—On March 8th, at Dun-darach, Camberley, the wife of W. L. Stuart, M.D., B.S. Lond., of a son.

DEATHS.

FARNCOMBE.—On March 6th, at Fairies, Chudleigh, S. Devon, Edgar Leonard Farncombe, M.A., M.B., B.Ch. Oxon., M.R.C.S., L.R.C.P., in his 32nd year, of pneumonia.

FISHER.—On March 10th, at Shere, Guildford, Surrey, Charles Fisher, M.D., M.R.C.S.E., L.R.C.P.L., D.P.H. Camb., aged 39 years.

HILL.—On March 3rd, at Chalford Hill, Stroud, Glos., Frederick A. Hill, M.D., aged 63 years.

KING.—On Feb. 18th, at Ludlow, Shropshire, Ernest Edward King, M.R.C.S. Eng., youngest son of the late Simeon John King, of Saffron Walden, Essex.

MACAULEY.—On March 7th, at 17, Norvern-road, South Kensington, William Robert Macauley, M.R.C.P.I., L.R.C.S., L.M., aged 64.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

BILLINGSGATE.

THE Billingsgate and Leadenhall Markets Committee of the Common Council has presented to the Court of Common Council a recommendation to the effect that it be referred to the former to consider the propriety of applying to Parliament to abolish Billingsgate Market and to utilise for the great public fish market of London a site at Shadwell or elsewhere and to report fully upon the subject. This recommendation was carried in spite of some strenuous opposition and of the moving of an amendment asking for further information as to the need for it. Probably few of the general public take a very active interest in the matter, which at the same time affects very considerably Londoners and all those who derive their fish supply from London looked upon as a distributing centre. The object of the suggested change is to promote a more rapid and easy handling and distribution of the enormous quantities of fish brought to the London market, quantities stated in the Court of Common Council to have been nearly doubled in the course of the last 31 years. The merits of the particular change which ultimately may be made will no doubt be very carefully considered first, but that improvement should be possible, or that change of some kind is required, or, indeed, that it can hardly fail to be beneficial to the community, cannot be doubted by anyone who takes a walk in the immediate vicinity of the present market during business hours and who considers how essential the question of time is when such a perishable article as fish has to be conveyed to the consumer. Perhaps some day in a less-congested market, approached by wider thoroughfares, the language of Shadwell will be typical of the improved circumstances in which it is spoken, and "Billingsgate" as a dialect will be forgotten or become merely a subject of study and speculation for the learned.

A QUESTION OF ETHICS.

To the Editors of THE LANCET.

SIRS,—I notice in your issue of March 9th, p. 701, a letter from a correspondent who, being apparently afraid of his identity being established, signs himself "Esquiver." Being the poor medical officer of health to an urban district referred to I trust you will grant me a few lines to reply. As for my friend the borough medical officer of health, I have no doubt he is well able to look after himself should he deem your correspondent's letter worthy of notice. The facts are as follows. On Thursday evening, Feb. 23th, I was wired to by a firm of solicitors asking me to inspect certain property and appear in court next morning at 11 A.M. to give evidence respecting its condition. I knew nothing further of the affair. I went and inspected the property and found that two of the six houses had considerable repairs done to them, including concrete floors (not asphalt, as your correspondent says) and, in my opinion, they were then (and that was the time being dealt with) not some months before, quite fit for human habitation. I said so in my evidence and I maintain so still. I also deny that at the time in question damp was to be seen trickling down the walls of these two houses, as your correspondent avers. Now, Sirs, whilst acknowledging that the Local Government Board Inspector had every right to express his own opinion some months before when the houses had not been put in repair, and that the county medical officer and local medical officer had a perfect right to express their opinion in the police court at the time I appeared to give evidence, I claim an equal right to my opinion and also to express such opinion, although your correspondent thinks that no opinion should be given contrary to the opinion of the three aforementioned gentlemen. With regard to his attempt to suggest that my conduct in doing so was a breach of ethics it simply shows his ignorance of ethics and is ludicrous.

In conclusion, I would say that the builder, the councillors, and all the persons interested in the houses are entire strangers to me.

I am, Sirs, yours faithfully,

G. H. PEARCE, D.P.H. Cantab.

Darton Hall, nr. Barnsley, March 8th, 1907.

* * * We publish this letter with pleasure.—ED. L.

THE DEATH OF DOWIE.

THE amazing charlatan John Dowie, founder of the "Christian Catholic Church" and of "Zion City," but some time since deposed from his autocracy, has died, and little more need be said about a person whose career, as far as we are aware, contained no incidents worth recording to his credit. Born in 1847, he first became prominent after a chequered and unprosperous early history in 1883, the year of the exhibition at Chicago. During the years that followed he enjoyed extraordinary success, and although he had not been altogether triumphant outside his own country, we feel some satisfaction in believing that he received his first serious check in London. Indeed, there must be an appreciable number of young medical men making their way in the practice of their profession who can remember with a smile of satisfaction somewhat uproarious scenes in which when medical students they questioned the prophet's power

to heal disease at the St. Martin's Town Hall. His abuse of our King no doubt added to the contempt with which Dowie was regarded by Britons, but nearer to his own home his greed and his curious financial methods rather than the absurdity of his quackery or of his religious doctrines led to his downfall, although no doubt his followers were disposed latterly to view with mistrust the fact that at the time of his daughter's death he had summoned a medical man to attend her, a failure to support his own claims to which emphasis was lent when he himself became stricken with paralysis. He was an extraordinary product of an age too highly civilised to deal with impostors of his type as criminals. At an earlier date in the history of mankind he would no doubt have been deterred by fear of the stake or the block, or would have brought upon himself a fate which would have saved his fellow men from much pecuniary loss and bodily suffering.

UNDESIRABLE PUBLICITY.

To the Editors of THE LANCET.

SIRS,—My attention has been drawn to a paragraph in the People of last Sunday (10th inst.) in which my name has been mentioned. I need scarcely add that this has been done entirely without my knowledge and much to my regret.

I am, Sirs, yours faithfully,

Upper Wimpole-street, W., March 12th, 1907. W. ERNST MILES.

THE LAND QUESTION IN THE HIGHLANDS.

DR. Lachlan Grant, who is well known to our readers by his victory and that of the workmen whose medical attendant he was in the Ballachulish quarries dispute, has forwarded to us a report of an address delivered by himself at Oban on the land question. The address was given under the auspices of the Highland Crofters and Cottars' Association, and its object was to bring about the holding of small plots of land by the peasantry. The matter is too purely a political question for our columns, although, of course, it has its medical side, in that if productive land were more easily to be acquired than it is at present the rush to the towns would be stayed and the ideal backbone of a country—namely, a strong healthy peasantry—would again be in process of production. Dr. Grant believes that in the past the tenants of some small holdings have been able to live in moderate comfort on the products of their land, but, on the other hand, it must be remembered that their homes are often insanitary, witness the Blue-book which was issued in 1905 upon the Sanitary Conditions of the Lewis and commented upon in THE LANCET of Sept. 23rd, 1905, p. 904.

THE HISTORY OF MEDICINE.

To the Editors of THE LANCET.

SIRS,—Can you recommend any works dealing with the history of medicine?

I am, Sirs, yours faithfully,

March 5th, 1907.

W. B. H.

* * * Our correspondent's question being somewhat wide it is difficult to give a definite answer. The best short compendium of the history of medicine is a book published some ten years ago and called "A History of Medicine from the Earliest Times," by E. B. Withington. A more lengthy modern work is one in German by Gurlt. Our correspondent might also consult the FitzPatrick Lectures delivered before the Royal College of Physicians of London. The lectures up to the present have been delivered by Dr. J. F. Payne and Dr. Norman Moore and abstracts of the lectures delivered have appeared in THE LANCET of June 27th and July 4th, 1903, Nov. 12th and Nov. 19th, 1904, Nov. 18th and Nov. 25th, 1905, and Nov. 17th and Nov. 24th, 1906. The first set of these lectures has been published by the Clarendon Press as a book and the other lectures will be published in book form in due course. If our correspondent desires to look at any more books on the subject he will find some 40 pages of works in the index catalogue of the library of the Surgeon-General's Office in the United States Army, published at Washington in 1887. The most recent book on the subject which we know of is "Geschichte der Medizin," by Dr. Max Neuburger, in two volumes, Stuttgart, Ferdinand Enke, 1906.—ED. L.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—Can any of your readers help me in the following case? A young lady who was a patient of mine some six months ago with consumption and is now in very good health, though not thoroughly sound, seeks employment. She is a refined and charming woman, well educated, and an excellent needlewoman. If any medical man has a young girl with early consumption under his care who needs a companion with a knowledge of open-air treatment I can conscientiously recommend this lady. She would accept a small salary in return for employment of such kind.

I am, Sirs, yours faithfully,

HERAPATH WOOD,

Medical Superintendent of the Liverpool Open Air Sanatorium, March 6th, 1907.

THE "GLASEPTIC" NEBULISER AND SPRAY.

THE most important feature of both the nebuliser and the spray is that the "atomising" section of the apparatus consists entirely of glass, so that there are no metal fittings to corrode or to oxidise. Moreover, the apparatus is readily cleaned and may, in fact, be kept aseptic.

The "glaseptic" nebuliser is designed for use with solutions having an oil base, but it answers equally well with spirituous, aqueous, or concentrated saline solutions. It may be used for the treatment with spray of both the nasal and respiratory passages. The glaseptic spray gives a very finely divided vapour and for this purpose responds best with aqueous or alcoholic solutions. The apparatus is made in one piece and, like the "nebuliser," can be scientifically cleaned. Messrs. Parke, Davis, and Co. of 111, Queen Victoria-street, London, E.C., supply the "glaseptic" nebulisers and sprays.

Z. Y. X.—We have not the least idea how it has come about that the details of what our correspondent describes as "a remarkable operative cure" have found their way into the lay press. The author must be annoyed at the manner in which uneducated critics are extolling him as a pioneer in surgery and psychology.

Country Practitioner.—The point is left to the discretion of the medical man. Regularly to employ a dispenser as a dentist would be an act of covering, but the performance of a simple extraction in emergencies or under supervision by a dispenser would probably not be regarded by the General Medical Council as an offence.

Necessary.—We cannot guess what a medical man might recommend to our correspondent, whose condition we do not know, nor do we prescribe in these columns. We suggest that "Necessary" should submit his sensible questions to his medical adviser.

C. V. B.—We do not give medical advice to the public. The question is one that can be answered by our correspondent's medical adviser.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynaecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopaedic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

TUESDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (20th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopaedic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Free (2 P.M.), Royal Orthopaedic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

THURSDAY (21st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynaecological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopaedic (9 A.M.), Royal Free (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynaecological, 2.30 P.M.).

FRIDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopaedic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (23rd).—Royal Free (9 A.M.), University College (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (18th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M.: Address:—Prof. J. B. Murphy (Chicago).

TUESDAY (19th).—PATHOLOGICAL SOCIETY OF LONDON (Royal Army Medical College, Examination Hall).—5 P.M.: Papers:—Major H. W. Grattan: A Note on Blackwater Fever in Sierra Leone.—Major W. S. Harrison: (1) A Pseudo diphtheria Bacillus from a Case of Middle Ear Disease; (2) Bacillus Typhosus from Peritoneal Abscess One Year after Typhoid.—Lieut.-Colonel W. B. Lelsham: (1) Typhoid Inoculation in the Army; (2) Observations on the Sporo-chlores of Relapsing Fever and Tick Fever (with demonstration).

WEDNESDAY (20th).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—8 P.M.: Exhibition of Specimens of British Mycetozoa by Mr. A. E. Hilton. Paper:—Mr. J. Murray: Some South African Tardigrada.

ROYAL METEOROLOGICAL SOCIETY (Institute of Civil Engineers, Great George-street, Westminster, S.W.).—7.30 P.M. Lecture:—Major B. F. S. Baden-Powell: The Exploration of the Air (Illustrated by models and lantern slides).

SOCIETY OF ARTS (John-street, Adelphi, W.C.).—8 P.M.: Mr. J. B. O. Kershaw: Smoke Prevention in Factories.

THURSDAY (21st).—NEUROLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.).—9 P.M.: Clinical Meeting. Patients in attendance at 8 P.M.

FRIDAY (22nd).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M.: Clinical Evening for the Exhibition of Cases followed by Discussion. Patients in attendance from 8 to 9 P.M.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (18th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Lecture:—Prof. C. F. Beadles: The Cerebral Arteries (Illustrated by specimens, drawings, and lantern slides).

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Dr. S. H. Doris: Ointment. (Skin.) 5.15 P.M.: Lecture:—Mr. L. Paton: Retro-bulbar Neuritis.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—12 noon: Pathological Demonstration.—Dr. G. O. Low: 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations. Mr. Dunn: Diseases of the Eye. 5 P.M.: Clinical Lecture:—Mr. Paget.

NORTH-HAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—Cliniques:—9.30 A.M.: Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Medical Out-patient (Dr. Whipple), Throat, Nose, and Ear (Mr. Carson); X Ray (Dr. Pirie).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Sir D. Duckworth: Medicine. 3.15 P.M.: Mr. W. Turner: Surgery. 4 P.M.: Dr. St. Clair Thomson: Diseases of the Throat, Nose, and Ear. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat. 4 P.M.: Special Lecture:—Dr. St. Clair Thomson: Hoarseness.

TUESDAY (19th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Dr. C. T. Williams: Ointment. (Medical.) 5.15 P.M.: Lecture:—Dr. P. Stewart: Traumatic Affections of the Spinal Cord.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynaecological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. X Rays. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Clinical Lecture:—Mr. Dunn.

NORTH-HAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—Cliniques:—10.30 A.M.: Medical Out-patient (Dr. Auld). 2.30 P.M.: Gynaecological Out-patient (Dr. Giles), Surgical Out-patient (Mr. Edmunds). Surgical Operations (Mr. Carson).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. R. T. Hewlett: Medicine. 3.15 P.M.: Mr. Carless: Surgery. 4 P.M.: Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Dr. Collier: Muscular Atrophy in the Upper Extremity.

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—3 P.M.: Prof. W. Stirling: The Visual Apparatus of Man and Animals.

WEDNESDAY (20th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Lecture:—Prof. C. F. Beadles: The Cerebral Arteries (Illustrated by specimens, drawings, and lantern slides).

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Mr. J. Cunnings: Clinique. (Surgical.) 5.15 P.M.: Lecture:—Mr. J. Poland: The Use and Abuse of Skiagraphy in Fractures and Dislocations.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations. 5 P.M.: Dr. Beddard: Practical Medicine.

NORTH-HAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—Cliniques:—2.30 P.M.: Skin (Dr. Meacham), Eye (Mr. Brooks), Medical Out-patient (Dr. Whipple).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. P. Taylor: Medicine. 3.30 P.M.: Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 11 A.M.: Eye. 2.30 P.M.: Special Lecture:—Dr. Taylor: Varieties of Spastic Paralysis.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M.: Lecture:—Dr. O. Wall: The Murmurs of Aortic Incompetence.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M.: Demonstration:—Dr. Abrahams: Accessory Sinuses.

THURSDAY (21st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M.: Lecture.—Mr. H. J. Curtis: Liver Abscesses, their Etiology, Symptoms, and Treatment.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations. Mr. Dunn: Diseases of the Eye. 5 P.M.: Lecture.—Mr. Baldwin: Practical Surgery.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—2.30 P.M.: Gynaecological Operations (Dr. Gilles). Cliniques.—Medical Out-patient (Dr. Whitting, Surgical Out-patient (Mr. Carson). 3 P.M.: Medical In-patient (Dr. Chappell). 4.30 P.M.: Demonstration.—Dr. G. B. Price: Clinical Examination of the Crine.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. G. Rankin: Medicine. 3.15 P.M.: Sir W. Bennett: Surgery. 4 P.M.: Dr. H. Cooper: Radiography. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat.

HOSPITAL FOR SICK CHILDREN (St. Oswald-street, W.O.).—4 P.M.: Lecture.—Dr. Poynton: Rickets, Achondroplasia and Allied Conditions.

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—3 P.M.: Dr. C. W. Saleeby: Biology and Progress.

FRIDAY (22nd).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M.: Lecture.—Prof. C. F. Beadles: The Cerebral Arteries (illustrated by specimens, drawings, and lantern slides).

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Dr. H. Tilley: Clinique. (Throat.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynaecological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Bell: Diseases of the Throat, Nose, and Ear. X Rays. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Lecture.—Mr. Bidwell: Operative Treatment of Duodenal Ulcer.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—9.30 A.M.: Cliniques.—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Surgical Operations (Mr. Edmunds). Cliniques.—Medical Out-patient (Dr. Anld), Eye (Mr. Brooks). 3 P.M.: Medical In-patient (Dr. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. R. Bradford: Medicine. 3.15 P.M.: Mr. McGavin: Surgery. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Skin. 2.15 P.M.: Special Lecture.—Dr. R. Bradford: Chronic Bright's Disease.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queens-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture.—Dr. Collier: Torticollis and the Tic.

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—9 P.M.: Prof. J. J. Thomson: Rays of Positive Electricity.

SATURDAY (23rd).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Bell: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—3 P.M.: Prof. J. J. Thomson: Röntgen, Cathode, and Positive Rays.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed exclusively "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners. Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1906, which was completed with the issue of Dec. 29th, were given in THE LANCET of Jan. 5th, 1907.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1906 are now ready. Bound in cloth, gilt lettered, price 16s., carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2s., by post 2s. 3d.

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newspapers (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and not to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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(Taken daily at 3.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 14th, 1907.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rel. Hum. %.	Solar Radiation in Yards.	Max. Min. Temp. in Shade.	Min. Temp. in Shade.	Wet Bulb.	Dry Bulb.	Remarks.
Mar. 8	30.00	W.	0.01	22	43	41	42	44	Fine
" 9	30.23	N.W.	0.04	15	45	43	37	41	Cloudy
" 10	30.00	W.	0.10	97	56	41	53	45	Cloudy
" 11	30.184	E.	0.04	63	41	37	37	33	Rainy
" 12	30.46	S.W.	0.01	76	47	30	—	32	Foggy
" 13	30.014	W.	0.21	91	51	32	42	44	Fine
" 14	29.933	N.W.	0.04	23	45	33	37	39	Fine

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The Arris and Gale Lecture

ON

THE PERMANENT DEFENCES OF THE BODY.

Delivered before the Royal College of Surgeons of England
on Feb. 22nd, 1907,

By BERTRAM LOUIS ABRAHAM, M.B.,
B.Sc. LOND., F.R.C.P. LOND.,

ASSISTANT PHYSICIAN, WESTMINSTER HOSPITAL; JOINT-LECTURER IN
MEDICINE, WESTMINSTER HOSPITAL MEDICAL SCHOOL;
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MR. PRESIDENT, FELLOWS OF THE ROYAL COLLEGE OF SURGEONS, LADIES, AND GENTLEMEN,—I beg to thank you for the honour you have done me in appointing me to deliver this Arris and Gale lecture. I feel that the best mode of expressing my gratitude will be to proceed without more ado to the subject which I desire to lay before you.

If we endeavour to penetrate to the actual foundations—the very bedrock—of disease we shall find that our ultimate conception of its causes can be broadly summarised in two words—exhaustion and injury. Amœba may, it is said, be immortal, but it is impossible to conceive of a complex living being which will not eventually break up, die as we call it, as the result of wear and tear. Very few human beings, indeed, come to this end; the battle of life entails wounds and scars, injuries by external and internal noxæ, chemical, physical, and biological, gross and microscopic, any of which, alone or in combination, may contract the vital span. Nor are the two great causes of disease invariably dissociated in their action. There is always the possibility of a *circulus vitiosus*; the injured organ is the sooner exhausted, while noxæ—such as bacteria—find an easy prey in a body brought down by wear and tear. We must at the same time remember that disease processes are not, strictly speaking, new processes. They are simply the normal—or as they are often called physiological—activities of the body perverted by the incidence of the factors which I have just outlined. It follows that a knowledge of physiology is essential to the proper understanding of disease; that the converse is not strictly true, that the findings of experiment are not always directly transferable to clinical medicine, I shall have to point out before the end of this lecture.

One more consideration—derived from biology—must be taken into account in framing our conceptions of disease. Just as there has been a struggle for existence among living beings, so the individual tissues have fought with one another for the mastery. And in both cases the victory has been gained at the cost of greater delicacy, greater vulnerability. The nobler tissues, the elements of the nervous system, of the heart muscle, of great and complex glands like the liver, require a finer pabulum than the plebeian cells—such as those of connective tissue—which surround them. A deterioration in the quality of the pabulum, such as the circulation of a poison—e.g., alcohol or the syphilitic virus—in the blood, will tell first on the former. The parenchymatous elements will weaken, will eventually die, and the connective tissue, which can still thrive on the inferior pabulum, will, like a weed, choke and ultimately replace them. This is, in brief, the story of cirrhosis of the liver and of many of the system-degenerations of the central nervous system.

To-day I propose to discuss what I may call the permanent defences of the organism, defences which are always ready for action and are constantly coming into effect throughout life. They are to be distinguished from those which are only developed in circumstances of special need; these, with which we are not now occupied, may be considered under the general term immunity. Now it is perfectly easy to realise that were it not for some mechanism or series of mechanisms within the body we should be poisoned every day of our lives or would die speedily from some infectious disease. How the former of these contingencies is averted is the problem with which we are at present concerned, and I think that its solution leads itself to explicit demonstration. I shall divide these mechanisms into three chief classes, depending upon their evolution in succession to meet the needs entailed by increasing organic complexity.

No. 4360.

In the first place there is what I have named the physiological reserve or the power which each organ, each tissue, and no doubt each cell, has of calling up its own latent energy in its defence. Secondly, there is the biochemical interrelation of organs, by which one of them can, by chemical means, evoke in another changes which act in its defence. The third, the latest and most complex development, is the nervous mechanism, by which the main organs can call to their aid, not only each other, but the nervous system as well. It acts in an entirely different way than the biochemical apparatus; it is quicker and more easily studied, because, as I shall proceed to show you, there is a definite part of the nervous system set aside for the sole purpose of correlating the organs in this way. Therefore an organ can either (a) defend itself by calling up its physiological reserve; or (b) summon other organs to help it, (1) biochemically, or (2) by the intervention of the nervous system.

I. THE PHYSIOLOGICAL RESERVE.

This is brought into action when any organ, or probably any cell, in the body is subjected to unusual strain. Unwonted and excessive strain imposed upon any organ or tissue or cell of the body calls for its physiological reserve of (biotic) energy. Just as in health a muscle is never completely relaxed, so in health it is never called upon to contract to its utmost. There is a latent power about it, in reserve for ultra-normal stimulation; and similarly in normal circumstances no organ of the body is required to exercise its full functional capacity. There can be no doubt that this reserve enables an injured cell, if not damaged beyond a certain point, to recover; if the lesion goes beyond this point the power to recover is lost. If disease be overcome by this property there will result what the old pathologists were so fond of talking about, the *restitutio ad integrum*, which unfortunately we do not see so often as we could hope. Still, if it does occur it results entirely from this physiological reserve of energy. You know the effects upon an amœba of increasing strength of stimulation. A mild stimulus causes increased pseudopodial movement, a stronger stuns the amœba and causes it to contract into an apparently lifeless ball, a still stronger kills it. If the irritant is insufficient to cause death, enough biotic energy remains to repair the damage and to ensure recovery. We must go back to this simplest of all cases if we are to understand the phenomenon in tissues and organs. In an organ the effect of supernormal strain is to call up the reserve. When the strain is long continued the reserve may be more or less completely mobilised, and the heart muscle, for instance, like the biceps of a blacksmith, will hypertrophy. This may go on for a considerable period and if the mobilisation is sufficient the condition can hardly be called one of disease. A patient with a hypertrophied heart may, if he live an easy and sensible life, go on as a normal individual. Take, for example, that rather rare condition, uncomplicated aortic stenosis. In these cases, under favourable conditions, the hypertrophic power or physiological reserve of the heart is sufficient to cope with all the needs of the organ and of the body. At the same time the heart, though apparently working efficiently, is not actually doing so, because if it be attacked from another direction—if the reserve has been called out and mobilised, and a fresh enemy appears upon the flank—the army is apt to be thrown into disarray. Again, a patient with mitral stenosis may go on well for several years, living a quiet and apparently normal life, but if he contracts pneumonia the damage to the heart muscle becomes obvious and the machine is thrown out of gear. To change the simile, a patient with compensated valvular disease of the heart is like a man living on his capital. He may not be aware of this until there is a drain upon his bank from some other cause, when he becomes suddenly and acutely conscious that his balance there has sunk to an embarrassing level. This is equally true of other organs, though it may not be quite so easy to demonstrate. A patient may go on with damaged kidneys for an indefinite number of years. Then some acute infection supervenes and the injured organs are unable to withstand the strain. General metabolism has perhaps also suffered, and the patient succumbs or, at any rate, has a severe illness. Thus an intercurrent malady may carry off a patient who has attained an apparent equilibrium. One sees, for instance, persons who have had diabetes for many years die suddenly from coma following an ordinary attack of influenza.

This leads me to digress for a moment in order to mention more particularly one of the chief, though least recognised.

causes of the breaking strain. This is, if I may borrow a term from chemistry, supersaturation. You know that you can dissolve an excess of a salt, such as ammonium chloride or zinc sulphate, in water, more than is normally held in solution. As long as this is not disturbed nothing will happen; but if you drop in a crystal or merely agitate the fluid the whole mass will suddenly crystallise. Now consider the case of a patient who has been addicted to long-continued excess in alcohol, who has soaked his nervous system in this fluid for a number of years. He may inform you that he has taken "a reasonable amount" to drink but that he has never been drunk; nor has he ever had symptoms which have been referable to alcoholism. One day he breaks his leg and the next morning he has delirium tremens, or the same complication develops in the course of an attack of pneumonia. Here you have an example of an organ, the nervous system, which through some physiological power has been able to resist, without appearing any the worse, the action of a poison administered in frequent, smallish doses over a considerable period of time. A certain amount of tolerance has been established, and I think that the question of toleration is largely bound up with, and is at all events a part of, the function of physiological reserve. But a man whose nervous system is saturated with alcohol may be suddenly attacked by the symptoms of alcoholism as the immediate result of a fresh stimulus, mechanical or chemical. So may the diabetic develop coma as the consequence of fatigue or influenza, or the nephritic female uræmia when pregnant. I will go further and venture to suggest a similar explanation in the case of chorea. We know that this is a disease which is almost invariably associated with the rheumatic poison. Whatever may be the actual cause of rheumatism, there can be no doubt that the condition of the patient is one of intoxication: he is suffering, in fact, from the continued effects of a virus. Moreover, after excluding imaginary or long distant alarms, a certain number of attacks of chorea are immediately preceded by an actual fright. This seems to me a parallel case. The patient, coming very often of a neurotic stock, was already supersaturated with the rheumatic toxin and the psychical disturbance resulting from the fright was sufficient to bring about crystallisation—i.e., to determine the symptoms of chorea.

To return to the question of the physiological reserve. If the strain is continued long enough, even in the absence of an intercurrent disorder, the energy of the organ may become exhausted and the reserve be used up; the organ or tissue then suffers what may be described in one word as degeneration. In the heart, the example which we have already chosen, the muscle ceases to hypertrophy and the organ dilates. It dilates because there is a struggle for existence between its different tissues; when the muscle energy is exhausted the connective tissue asserts itself and fibroid or fatty change results. Fatty degeneration is in part a reversion to a type of connective tissue and in part the result of other causes connected with metabolism, while fibroid tissue is the typical plebeian tissue which I have already described as constantly lying in wait for any impairment of the more highly organised and vulnerable structures which it interpenetrates.

This sequence of changes is not less marked in the central nervous system. Of course, this does not hypertrophy in the same way as the heart muscle and it is only during the last few years that we have acquired sufficient technical knowledge to enable us to study the actual changes in its finer elements. We know now that neuron complexity increases with education up to the age of 40 years at any rate, and that in some cases far beyond that age the neurons may show greater complexity with progressive development of the mental faculties. Here, in fact, there is definite histological evidence of an adaptation to increasing demands, of, in other words, the utilisation of a physiological reserve. On the other hand, the nervous system may give way if the calls upon it are long-continued and excessive, and especially if it has already been damaged by poisons, such as lead, alcohol, or especially the virus of syphilis.

From this point of view the history of an attack of general paralysis is most interesting. You cannot fail to have noticed that even in hospital practice the sufferers from tabes and general paralysis are as a rule more talented and intelligent than the general run of patients. It is even more striking in private practice to observe the sudden breakdown from general paralysis of intellectually gifted people.

A patient who has suffered from some infection, chiefly, of course, syphilis, with subsequent hard mental work, and particularly, it seems, one who has been subjected to financial worry, is the most likely subject for this disease. This is once more a question of the exhaustion of the physiological reserve. And here again, as the neurons, the most highly organised cells we know, yield to the strain and decay, the neuroglia, the connective tissue which supports them, assumes the mastery, and the fibrous elements supplant the parenchymatous.

Sometimes it appears that an organ enters upon life, so to speak, with an insufficient physiological reserve. Such an organ is imperfectly equipped, compared with the rest of the body, to resist wear and tear. Hence it is that one particular organ or tissue in any person may exhibit a conspicuous vulnerability, may in fact die before its time within the body. If this organ is of vital importance its owner will die too; the heart and the kidney afford good examples. If the death of the organ does not entail that of the individual more or less maiming must follow. This may be seen in Friedreich's disease, where certain tracts of the spinal cord die before their time, crippling and deformity being the result.

The physiological reserve may play a part in yet one other important pathological process, that of repair. We have already seen that it is the sole means by which this can be effected in the case of a unicellular organism. With increasing complexity of structure division of labour is found among the various constituent cells of a tissue. Thus the repair of an injured tissue is mainly brought about by cells other than those damaged by the noxa. It may well be that in these cells is stored the reserve of biotic energy. In a sense less fanciful than was intended by Grawitz, the inventor of the term, they might be called "slumber cells."

II. THE BIOCHEMICAL APPARATUS.

Now let us consider the means by which one tissue may call upon another for help. The first of these is the biochemical. A good deal has been said during recent years upon the subject of internal secretion, as if it were a special function limited to certain organs. But if you think over the matter it will be perfectly obvious that every cell in the body has an internal secretion, that it takes something away from, and gives back something else to, the common stock. Each cell, therefore, must exert some influence over every other cell in the body, and while in some cases this may be no greater than that of a stone cast into the ocean, in others it is most important, wide-reaching, and vital. Some of these secretions are, in fact, essential to life, though their very existence might never have been guessed at had it not been for the effects of disease or removal of the particular organs in which they are formed. We know, for instance, that the essential product of the suprarenals is a body of comparatively low molecular weight, which is not destroyed by boiling, which can be filtered, which can be sterilised, and which has a distinct action upon all muscular tissue innervated by the sympathetic system, especially the smooth muscle in the walls of the blood-vessels.

The thyroid is another example. Although we are still doubtful as to its exact functions we know that this organ is essential to life. In all probability its use is different in younger and older animals. In the latter administration of thyroid extract is followed by increased chemical change in the tissues and augmented nitrogenous metabolism, while in the former the effects produced seem to be more in the direction of increased growth of the tissues in general and more particularly of the connective tissues, including the bones. In the one case katabolism, in the other anabolism, is the more favoured.

Among other secretions which have been shown to have a definite and effective defensive action is so simple a chemical substance as carbonic acid. It has long been established that an increase of CO_2 tension in the blood, above a certain point, causes violent respiratory movements, quite independently of the physical condition of the lungs. If you perform Head's experiment of positive ventilation with hydrogen, which is an indifferent gas, so that while the lungs are kept expanded the blood is not being aerated, you can differentiate between the mechanical effects of inflating the lungs and the consequences of an altered chemical condition of the blood. In this experiment an expiratory rhythm results, but the inflation which produces it, being with hydrogen instead of oxygen, is useless to the animal. The hydrogen, without being an actual poison, is, vitally speaking, useless, and

after a brief interval violent curves, inspiratory as well as expiratory, are seen. These have recently been shown to be due not to the want of oxygen but to the presence of carbonic acid; in other words, the CO_2 produced in the tissues is the defensive agent which calls up violent respiratory attempts to obtain more oxygen for the carrying on of vital processes. This is the simplest example of a chemical messenger, or, as we now call it, hormone, which one tissue can send to another.

Some of these secretions exert a definite stimulant action upon various organs. I have mentioned the suprarenal with its special motor or constrictor influence upon the smooth muscle in the arterioles. One—namely, the digestive mechanism—will serve as an appropriate example, if I give an outline of some of its phenomena. The whole of digestion is a continuous chain of these biochemical responses, which have been called by some reflexes; to employ this term, however, is to attempt to undo all the work which has been done with regard to the differentiation between biochemical and nervous mechanisms. The most conspicuous example, and the only one which I shall give you now, is that of the process of digestion in the upper part of the small intestine. At intervals during gastric digestion a small amount of acid chyme is ejected through the pyloric opening. This acts upon a substance formed in the wall of the small intestine, known as prosecretin, and converts it into secretin. Secretin, which is not a ferment but a true hormone, is then absorbed by the blood and gets to the pancreas. It has been shown experimentally that, when administered to the pancreas, secretin causes a free flow of pancreatic juice, which contains a large amount of trypsinogen. So that prosecretin is converted by chyme into secretin, and secretin evokes trypsinogen. Trypsinogen, when it reaches the intestine, produces the flow of a ferment known as enterokinase. It is not at present certain that trypsinogen is the only factor which causes the outpouring of enterokinase. It may be that mechanical stimulation of the intestine has something to do with it, but all the most recent evidence is in favour of the view that it is trypsinogen, and trypsinogen alone, which stimulates the secretion of enterokinase. Enterokinase now reacts on trypsinogen and converts it into trypsin, which, as you know, in an alkaline medium, digests proteins. But there is something else in addition, because with the trypsinogen, some alkali is also passed out into the small bowel. When this alkali is in sufficient quantity to be in excess of the acid of the chyme, and when in consequence the contents of the duodenum become alkaline, they cause the pyloric sphincter to relax and open. This permits more chyme to come through and the acid which it contains starts the whole mechanism over again, which goes on until the stomach is empty. You will see, therefore, that the pancreatic juice, when evoked by secretin, does two things. It has in it the first place the trypsinogen, which stimulates the presence of enterokinase, which converts trypsinogen into trypsin, and so digests proteins, and secondly, carbonate of soda, which neutralises the acid of the chyme until a point is reached when alkali is in excess, when the pyloric sphincter is opened and more chyme is poured out. Here, then, is a beautiful example of the interrelation of chemical processes as seen in a physiological act, and the more we know of the nature of digestion the more does it appear to be built up of phenomena of this description; so that in the practical consideration of diseases of the digestive organs we have to begin with this kind of study. And it must be remembered that in normal circumstances all these activities are entirely latent. Prosecretin appears to have no action whatever upon the pancreas. If you inject it into the pancreas no secretion of pancreatic juice will result. Trypsinogen possesses almost no proteolytic power; it is not rendered effective in this respect until modified by enterokinase. It is only in these special circumstances, and by the aid of such biochemical responses, that these secretions perform their function, and the whole mechanism must be in full working order for the process of digestion to go on properly.

In other cases, which have been much discussed lately, so that I may summarise them very briefly, the internal secretions may stimulate actual growth. I may here refer to the very striking experiments of Shattock and Seligmann on the relation of the development of masculine characters to the growth of the testicles. By comparing the results of castration and double vasotomy in sheep and fowls they found that the appearance of male-type characters—horns,

spurs, &c.—was prevented by the former but not by the latter, the operations being, of course, performed upon the animals soon after birth. Maleness hence appears to be due to the presence of testicles and not to the procreative capacity of the animals. Moreover, if testicular tissue be grafted in the abdomen, the testicles having been removed, the animal still develops male characters. It is thus evident that the impulse to this species of growth is excited by chemical and not by nervous stimuli.

This has also been worked out particularly in connexion with the mammary gland. Of course, it has long been well known that if the spinal cord of an animal was divided during pregnancy, after parturition the mammary gland started secreting milk as usual, although no nervous connexion existed between it and the uterus. This has been recorded in many cases in the human subject; I remember one which occurred at Charing Cross Hospital a few years ago. Goltz has also demonstrated the same thing most conclusively upon a bitch from which he had removed the whole of the lower part of the spinal cord, so that there can be no doubt that it is a biochemical action which evokes the mammary secretion. The next step was the research of Marshall and Jolly upon the corpora lutea. They found that the ovary formed an internal secretion which was responsible for the function of menstruation, and that when the ovaries were removed menstruation could not occur. Moreover, the corpus luteum contained an internal secretion, which had to do with the fixation and development of the ovum in the early days of pregnancy. That is to say, that if the corpus luteum were removed in an animal soon after impregnation the ovum did not become fixed and did not develop, whereas if it were removed after half the period of gestation had passed development was not interfered with in any way.

This work has been rounded off by a long series of experiments by Starling, having for their object the endeavour to find a means of stimulating the secretion of the mammary gland in unimpregnated animals. He found that he could make an extract from the bodies of foetal rabbits which, when injected into virgin rabbits, produced development of the mammary glands. This extract could be boiled and passed through a Berkefeld filter without losing its properties. It is a hormone, a true chemical product, comparable with suprarenal extract. If injected into a rabbit which had borne young but was not pregnant, it caused the mammary gland to develop and to a certain extent to grow. He came to the conclusion that the foetus in utero pours forth through the placenta an internal secretion into the mother, stimulating mammary growth, and that if during the first half of pregnancy the ovum be removed all that results is atrophy of the glands, which at this time have developed to a certain extent but consist mainly of ducts. Removal of the foetus, however, during the second half of pregnancy acts as a stimulus to the breaking down of cells which by this time have been formed in the mammary gland. Their breaking down under this inhibitory stimulus leads to the secretion of milk. This corresponds with what is known in actual obstetric practice—namely, that the expulsion of the ovum before a certain date results in the mammary gland returning to its former condition, whereas if it occurs afterwards the inhibitory stimulus of the removal of the internal secretion causes the production of milk by katabolic changes in the gland. We here have a most typical example of response to a biochemical messenger—the hormone.

Now and then we seem to discern abortive attempts at the development of these chemical activities. We know that in exophthalmic goitre the thymus is hypertrophied. We know that in acromegaly the thyroid is apt to enlarge. We may regard these as efforts to come to the rescue when damaged organs are sending broadcast appeals in the form of chemical stimuli, to which the various glands try to respond, though in these cases unsuccessfully.

In addition to such efforts to meet special needs there are many other chemical processes of a defensive nature daily at work in the body; these have been carefully studied by Hertel. It will perhaps be as well to outline some of the principal examples.

Poisons are constantly generated in the course of digestion; acetic and lactic acids, indol and phenol, albumoses and peptones, are always being formed in quite large quantity in the intestines. Other poisons, again, are developed in the course of metabolism. Ammonia, which is a virulent organic poison, is always found in considerable amount in the portal vein after a meal, but is normally screened from the general

circulation by chemical changes in the liver. Its presence in excess in the blood or urine is usually the harbinger of evil. Then, again, carbamic and oxybutyric acids may be formed in a somewhat similar manner. Many internal secretions, such as, for instance, that of the suprarenal, if administered in quantity, are poisons, and such an internal secretion which is continually poured into the blood must, unless neutralised in some way, become poisonous. There must hence be a certain number of detoxicating influences at work in the body which prevent these poisons from acting. Such influences are grouped by Hertter under three different headings: (a) processes of oxidation and reduction; (b) processes of hydration and dehydration; and (c) processes of synthesis.

(a) Oxidation gets rid of poisons such as alcohol and acetic acid. We know also that indol, which is produced in considerable amount in the intestines from albumoses and peptones, must be changed in some similar manner. The oxidation which occurs in the tissues usually demands the presence of iron, the alternation between ferrous and ferric salts being associated with the oxidation of bodies which require it. It may be that in other cases, as, for instance, butyric acid fermentation, nascent hydrogen is evolved; this liberates the atoms of nascent oxygen from the molecules and so causes the formation of an acid product. Oxidation cannot go on in the body except in an alkaline medium so that the presence of oxidation depends upon that of bicarbonate of soda, which is the chief alkaline constituent of the blood, and acts no doubt by virtue of its hydroxyl ions. With regard to reduction, you will remember that the injection of methylene blue into the body, as devised by Ehrlich, causes certain organs to become blue while others remain of their normal colour. These latter are those in which reduction is going on, as methylene blue is decolourised when reduced.

(b) Respecting hydration and dehydration, I need only mention the albumoses and peptones. We know that these bodies are formed from native proteids by hydration; moreover, as they are reconverted into native or tissue proteids somewhere in the body, a process of dehydration is also implied.

(c) Many intracorporeal syntheses are well known; I may refer, as examples, to those of hæmoglobin, of fat from carbohydrates, of hippuric acid from benzoic acid and glyccoll. But there are others, a little more recondite perhaps, which are of especial value from the defensive standpoint. An important example is the protection from acid intoxication by means of syntheses. Acid intoxication is a very prominent terminal feature of such a disease as diabetes. The presence of an excess of acid in the blood is a matter of almost inevitably fatal import. There are, however, certain bodies which are ready and able to combine with and to neutralise the acid; the chief of these is ammonia. Ammonia compounds and carbamic acid are built up into urea, which is not a toxin, and similarly when there is a possibility of acid intoxication ammonia tends to neutralise the acid, and ammonia salts are consequently found to excess in the urine. If, therefore, in the course of a case of diabetes, late in which disease the diurnal excretion of urea is usually increased, there is a drop in the amount excreted and a corresponding rise in the ammonia salts, this is of evil omen, and calls for immediate attention, as it is probably a warning of acid intoxication and therefore of diabetic coma. Other salts may to some extent take the place of ammonia, and of these sodium salts and in particular sodium carbonate are the most important in protecting against this intoxication. Thus among the numerous and varied actions of the liver none is more important than its detoxicating power by which it screens the body from the ill-effects of many of the products of digestion and metabolism.¹

III. THE NERVOUS MECHANISM.

The third permanent line of defence is the nervous system; with regard to this I propose only to say a few words now, as its functions are so much more familiarly known. It was at one time more exclusively studied from this point of view than any other part of the body, in fact, all associated action was believed to be either "sympathetic" or "reflex" through the nervous system. Just at

present it is, however, rather under a cloud owing to the great strides which have recently been made in our knowledge of the chemical factors in the correlation of organs. This is, perhaps, a little unjust, for there can be no doubt but that the nervous system plays a most important part in calling one organ to the support of another. Of this no more valuable example need be quoted than pain, which is almost always a safe guide to the presence of something abnormal and requiring our attention. Pain should therefore not be regarded merely as a thing to be done away with by means of analgesics, but as one of the most important symptoms of disturbance in the organic equilibrium. Thus, were it not for the immobility caused by the pain of dislocation or fracture much more damage would be done by the injury. John Hilton's great work, "Rest and Pain," which is, I fear, but too seldom read nowadays, abounds with examples of the beneficent work of the latter.

In addition to this general mechanism there is a special part of the nervous system, set aside for reflex action and for responding to the cells of damaged organs. This is the autonomic nervous system, which is an efferent system dependent upon the sympathetic ganglia, and their branches. It has to do mainly with vascular and glandular reflexes and is known to us chiefly through the admirable researches of Langley; it is one of the most important agencies in the maintenance of blood pressure and in the regulation of secretion. I would at present merely point out that, as in the course of evolution we meet first with the physiological response, secondly with the biochemical response, and thirdly with reflex action, so the physiological response is ever ready to act but is lowly organised, the biochemical is more highly organised, and the nervous system the most specialised of all. Physiological reserve takes days, or weeks, or months to be fully established, the biochemical response takes minutes, while a reflex act occupies but the fraction of a second. The last named may be compared to the navy, which is, or should be, always ready for action; the second to the army, which should be capable of rapid mobilisation; while the physiological reserve is like the militia, oldest in origin and requiring most time to become efficient. Such has been the evolution of the successive lines of defence to meet the needs of the increasing complexity of the organism. And of all of them it must be borne in mind that they may interact; thus a chemical change may cause a nervous response. Excess of CO₂ in the blood acting upon the respiratory nerve-centres in the medulla will produce respiratory movements.

And in the most highly specialised examples of all, where the activity of an organ is of truly vital importance, you will find not only a very elaborate mechanism but in many cases a double mechanism. In the case of respiration, as we have just seen, there is a nervous mechanism acting through the vagi as afferent nerves, and at the back of this, and independent of it in origin, there is a chemical one, controlled by the venosity of the blood in the medulla. In that of the heart we know that the rhythm is myogenic, depending upon the cardiac muscle alone, but that there is also an escapement, a further control by means of the nervous system, so that in these really essential acts of the body there is help from two sets of defensive apparatus.

Nor may we imagine that we know all about these mechanisms. Substantiate them as we may by laboratory experiment, we cannot but feel that in many cases within the living body there may be a "short circuit," a simpler solution of vital problems than can be attained under artificial conditions. And, moreover, we have some evidence that actions may go on in opposite directions in test-tubes and in the body. Diphtheria antitoxin is an excellent medium on which to cultivate diphtheria bacilli, but when injected into the body it not only neutralises their products but seems also to interfere with their growth. To argue from extracorporeal to intracorporeal processes is sometimes little more than absurd. Take, for instance, the coagulation of the blood. Outside the body this is a normal process, having for its object the closure of wounds; inside the vessels it is abnormal and fraught with grave danger. It is to the advantage of the body to favour the one and to hinder the other; so we find intravascular clotting difficult to produce but extravascular difficult to hinder. What are the causes underlying this reversal, so complete and so important? No blind and wholesale application of the facts of physiology to the needs of clinical medicine is here possible. The more extended study of the properties of biotic energy may perhaps reveal in the midst of apparent complexity the bases of organic economy.

¹ Under this heading might reasonably be considered the normal bactericidal action of certain cells and juices. But this part of the subject is more conveniently, if not more logically, to be treated in connexion with the question of immunity.

ABSTRACT OF

The Goulstonian Lectures

OR

CERTAIN ACUTE INFECTIVE OR TOXIC
CONDITIONS OF THE NERVOUS
SYSTEM.

Delivered before the Royal College of Physicians of London

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LECTURE II.¹

Delivered on March 7th.

MR. PRESIDENT AND GENTLEMEN,—Having in my first lecture referred to the general principles of acute infective or toxic processes in the nervous system, I propose to turn my attention at once to the consideration of the four diseases—acute poliomyelitis, acute ascending myelitis, Landry's paralysis, and acute toxic polyneuritis—and to the discussion of the various interesting questions with which their origin and nature are associated.

ACUTE POLIOMYELITIS.

Not only on account of its comparatively great frequency, of its lamentable and cruel results, but also because its investigation raises many important questions, acute poliomyelitis undoubtedly claims our first attention.

The name.—The two names by which this disease is commonly known are "acute anterior poliomyelitis" and "infantile spinal paralysis." To the first, two objections may be made on the grounds of its length and of its accuracy. The omission of the word "anterior" is a remedial measure suggested by Wickman which is certainly successful in removing the former objection, and, with regard to the latter, has obvious advantages in that it renders the title, as we shall see later, more nearly descriptive of the limits of the disease. The term "infantile spinal paralysis" has little to recommend it, because at the present time most authorities will allow that the disease is common, although in varying degrees, to at any rate the first four decades of life. If we remove the word "infantile" from the name "infantile spinal paralysis" we are left with a far too general term to be of any use. For these reasons I prefer the title "acute poliomyelitis" and do not make any distinction between an infantile and adult form.

MORBID ANATOMY.

Historical.—In order that we may, during the description of anatomical lesions, bear in our minds the various views which have been offered for their explanation I will narrate shortly the pathological history of the disease.

While studying the details of morbid anatomy we shall have to bear in mind several different theories offered for their explanation. 1. A primary degeneration of the ganglion cells of the anterior horns with secondary interstitial fibrosis. 2. An inflammation of the interstitial tissues of the spinal cord due to blood-borne infection with secondary or coincident injury to the ganglion cells. 3. A similar condition, but one which originates and spreads in the lymphatic system—a lymph-borne infection. 4. A primary thrombotic or embolic process in the distribution of the central artery.

Anatomical.—As a basis for the study of the morbid anatomy I will take the case of a man who died from the disease within four days of the first symptoms of illness and within 36 hours of the onset of paralysis. Portions of the central nervous system of this case were kindly sent me by Dr. C. R. Elgood. An athletic man, aged 28 years, with no important preceding illness except a doubtful history of syphilis some years previously complained for two days of pain in the back and limbs and developed a slight pyrexia. On the third day he was confined to bed with a temperature of 101° F. and a furred tongue. The following morning he

was paralysed in the legs and during the day the paralysis involved the trunk and respiratory muscles and death from respiratory failure occurred at midnight. There had been no mental impairment, no loss of cutaneous sensibility, and no disorder of the sphincters. The portions of the nervous system which I had the opportunity of examining were the lower dorsal and upper lumbar segments of the spinal cord together with the medulla oblongata and pons Varolii.

The spinal cord.—All the spinal segments presented similar microscopical features and the description of a section from the twelfth dorsal will suffice for our purpose. Even with the naked eye a section stained with logwood presents a striking difference from the normal. The grey matter stands out from the surrounding white columns unusually well owing to dense accumulation of nuclear elements within it. Under a low power this appearance is accentuated and, in addition, one is struck by the fact that the anterior spinal artery and its branches and a large number of the chief radial vessels are rendered prominent by the intense cellular infiltration of their walls. This condition obtains with regard to the vessels both in the antero-lateral and posterior columns and is often present in the vessels entering with the posterior roots. A more detailed examination shows that most vessels, whether in the white or grey matter, are distended with blood which presents no evidence of ante-mortem coagulation, and that capillary hemorrhages or red cell extravasations are scattered about. In the grey matter it is noticeable that although the nuclear elements are everywhere in excess of the normal they tend here and there to be gathered together in dense foci which may or may not have any obvious association with vessels. These foci are to be seen in the posterior as well as the anterior horns and are often well marked in the neighbourhood of Clarke's column. Even when carefully looked for with higher powers it is difficult to find more than a very few of the anterior horn cells and the majority of these are much changed; they are usually swollen, rounded, and devoid of protoplasmic granules, while their nuclei are often enlarged and excentric. The cells of Clarke's column are similarly affected, although not so completely submerged in surrounding cellular exudation. On the other hand, the white matter is practically free from accumulations of nucleated cells, although the cellular infiltration of the vessel walls is marked, and the neuroglial cells are possibly in some excess. In contradistinction to the grey matter where it is nearly impossible to distinguish the constituent axis cylinders and ganglion cells, in the white matter one is able to detect the usual appearance of axis cylinders and myelin sheaths cut in transverse section, although both axons and sheaths are sometimes swollen, especially in the antero-lateral columns. The soft meninges are also the seat of cellular infiltration, generally confined to the anterior median fissure and the antero-lateral surface but occasionally on the posterior aspects of the cord as well. The cells lie in the spaces of the connective tissue network, which are consequently enlarged and are more numerous in the neighbourhood of vessels.

Medulla and pons.—The changes seen in the pons and medulla are less intense, similar in character, though different in distribution to those of the spinal cord. General hyperæmia with cellular infiltration of the vessel walls is general throughout these regions. Cellular foci in the tissues are scattered irregularly, chiefly in the central formative reticularis but sometimes in the neighbourhood of the nuclei in the floor of the fourth ventricle. Definite ganglion cell changes are confined to those cells which are in the immediate proximity to the cellular foci in the tissues and consist of chromatolysis with or without excentration of nuclei.

So far I have only referred in general terms to the cellular infiltration of the grey substance, of the vessel walls, and of the soft meninges, each of which must be considered separately in greater detail and in the light of their appearances under high powers and different methods of staining. This would have been very incomplete in the particular case I have been describing, owing to the method of fixing the material, but I have been fortunate enough to supplement this by the examination of two other cases, both of five days' duration, from which sections were prepared by Dr. Gordon M. Holmes with the Heldenheim and the Unna-Pappenheim methods in the laboratory of the National Hospital. To the generosity of Dr. Donald W. C. Hood and of Dr. F. E. Batten I am deeply indebted for permission to refer to these sections. In both these cases

¹ Lecture I. was published in THE LANCET of March 16th, 1907, p. 785.

the general appearances I have already described were present in greater or less degree throughout the spinal cord and extended with fading intensity as high up as the optic thalamus.

Cellular infiltration of vessel walls.—This may well be taken first as it is the most widespread change in cases of acute poliomyelitis. In almost all fatal cases it has been found throughout the cord and brain stem and in many it has been traced as far as the cerebral cortex in the one direction and the conus terminalis in the other. The vessels of the grey and white matter are affected alike, veins, capillaries, and arteries all sharing in the process. On the whole the veins and capillaries show, proportionately to their size, a more intense infiltration than the arteries. The cells are seen within the adventitial sheath and often crowded between the media and adventitia in such a way as to bring into prominence a space to which I referred in my first lecture as the lymphatic channel described by Virchow, Robin, and others. The cells constituting this infiltration of the adventitia may be divided into several classes.

1. Cells which have all the morphological characteristics of the lymphocytes of the blood—single round or nearly round nuclei which stain deeply with most dyes, with a narrow rim of protoplasm which is often invisible in logwood sections but which can be generally distinguished by the Heldenheim and Unna-Pappenheim methods. With the latter staining this protoplasm stains a distinct and nearly homogeneous pink. The cells of this class form the large majority of all those contained within the vessel sheath, probably representing a percentage of 80.

2. Cells which are similar to the last class except in the fact that they have more protoplasm. They include all the intermediate forms between the lymphocytoid cells and somewhat larger cells which strongly resemble the plasma cells described by Unna, Marschalko, Vogt, Mott, and other observers in various conditions. These plasma cells are generally oval or oblong in shape, with a rounded nucleus lying either centrally but more frequently at one end. The protoplasm with the Unna-Pappenheim method is a rather bright pink and contains very fine granules. The nucleus resembles that of the lymphocytes except in respect to the chromatin granules which are sometimes more dispersed towards the nuclear membrane. These intermediate cells and plasma cells are found in a proportion of about 10 per cent.

3. In the remaining 10 per cent. are included several different types, each of which is so scantily represented that it requires little attention. There are a few larger mononuclear elements, a few large cells of about the same size with horseshoe-shaped nuclei, a few polymorphonuclear leucocytes, and a few cells with oval clear nuclei and very indistinct protoplasm, probably endothelial in origin.

All the cells I have now referred to are definitely within the meshes or lymph spaces of the adventitial sheath and are quite separate from the surrounding nervous substance; there is, in fact, not the slightest ground for believing that any of them are derived from the neuroglial elements. The infiltration of the vessel walls has been mentioned under the name of perivascular round cell infiltration by all observers who have examined cases of poliomyelitis in the acute stages but most of the earlier investigators have regarded them as emigrating leucocytes. At the present time there is much disagreement with regard to the origin of these lymphocytic and plasma cells and the various views are somewhat as follows.

The origin of these cells is not yet fully understood and I will content myself with merely summarising what is definitely ascertained. In many infective processes of the central nervous system the most marked inflammatory reaction is the perivascular cellular infiltration. In the acute stage of poliomyelitis this infiltration is conspicuous and consists mainly of cells which resemble lymphocytes and of cells which appear to be developing from the latter. The evidence is in favour of their being derived from cells already present in the walls of the vessels and against the view that they have migrated directly from the blood stream. A few polymorphonuclear elements are to be seen but there is no evidence of a free exudation of these cells.

Cellular infiltration of the soft meninges.—This subject is best considered next because the cells which are found here are practically identical with those found in the vessel walls. As I have already mentioned, the infiltration is generally

more marked on the antero-lateral surface of the cord than on the posterior, though it has been seen all round in the lower part of the sacral region. It is usually less evident in the higher levels of the cord, but has been traced as far as the posterior end of the fourth ventricle and even to the optic chiasma. In the three cases I have examined the great majority of cells contained in the pia arachnoid are of the mononuclear type; a smaller number show the various intermediate stages between the lymphocytic and the plasma cell characters. Only a very small percentage of other cells are to be seen and among these are a few polymorphonuclear leucocytes. Wickman, Dauber, Bickel, Sherman and Spiller, Goldscheider, Williamson, Bulow-Hansen and Harbitz have all found the meninges infiltrated with round cells in cases which have died within a short period after the onset of the disease. That it is not a feature only of fatal cases is shown, as Wickman mentions, by the fact that lymphocytes have been found in the cerebro-spinal fluid during life in non-fatal acute cases. In the case under the care of Dr. Hood, to which I have already referred, a lumbar puncture during life showed the presence of 95 per cent. of lymphocytes in the cerebro-spinal fluid.

Cellular infiltration of the grey matter.—Under this heading I shall refer, not to the cells of the vessel walls which I have already described, but to the masses of cells scattered more or less irregularly throughout the grey matter, particularly, but not exclusively, in the anterior horns. This part of my subject presents great difficulties, for it is one thing to describe the cells which can be seen in these regions and quite another to give them a name or to suggest their origin. Two sources of error may be mentioned; in the first place it is often impossible to distinguish between a small round neuroglial cell and a lymphocyte; in the second place, it is obvious that many cells are proliferating or have undergone changes comparable to the swelling and chromatolysis and excentration of nuclei which are prevalent in the ganglionic nerve cells in this inflammatory process—changes which render them quite devoid of their characteristic features and often unrecognisable. Making due allowance for these facts there appear to be the following cells present in the tissue.

1. Large and small Deiters's cells of the neuroglia, a few of which present their normal characters but the majority of which are altered. Some are swollen and contain one or two large vesicular nuclei but retain some portion of their processes. Others have lost all processes, are swollen, rounded or oval or irregular in shape, and contain eccentric, lobulated, or multiple nuclei. It is probable that many of them are on their way to become compound granular cells, the fat-scavengers in the process of disintegration, which form a prominent feature in slightly later stages of the disease.
2. Small rounded neuroglial nuclei with a thin rim of protoplasm. Some of these are also altered, the nuclei swelling and becoming more vesicular with fewer or more widely separated chromatin granules. The cells of this class are often indistinguishable from the lymphocytic type.
3. Cells which resemble lymphocytes and are probably identical with the cells in the perivascular sheath from which they have wandered. As in the adventitia of the

DESCRIPTIONS OF ILLUSTRATIONS ON PAGE 787.

Fig. 1.—Twelfth dorsal segment of a case of adult acute poliomyelitis fatal within 36 hours of the onset of paralysis. The grey matter stands out more prominently than normal on account of the cell proliferation which has taken place, and the chief vessels of the white matter are also picked out owing to the cellular infiltration of their adventitial sheaths.

Fig. 2.—The cells of Clarke's column and the inflammatory exudation around in a case of acute poliomyelitis within 36 hours of the onset of paralysis. The nerve cells are swollen and chromatolytic, with excentric nuclei.

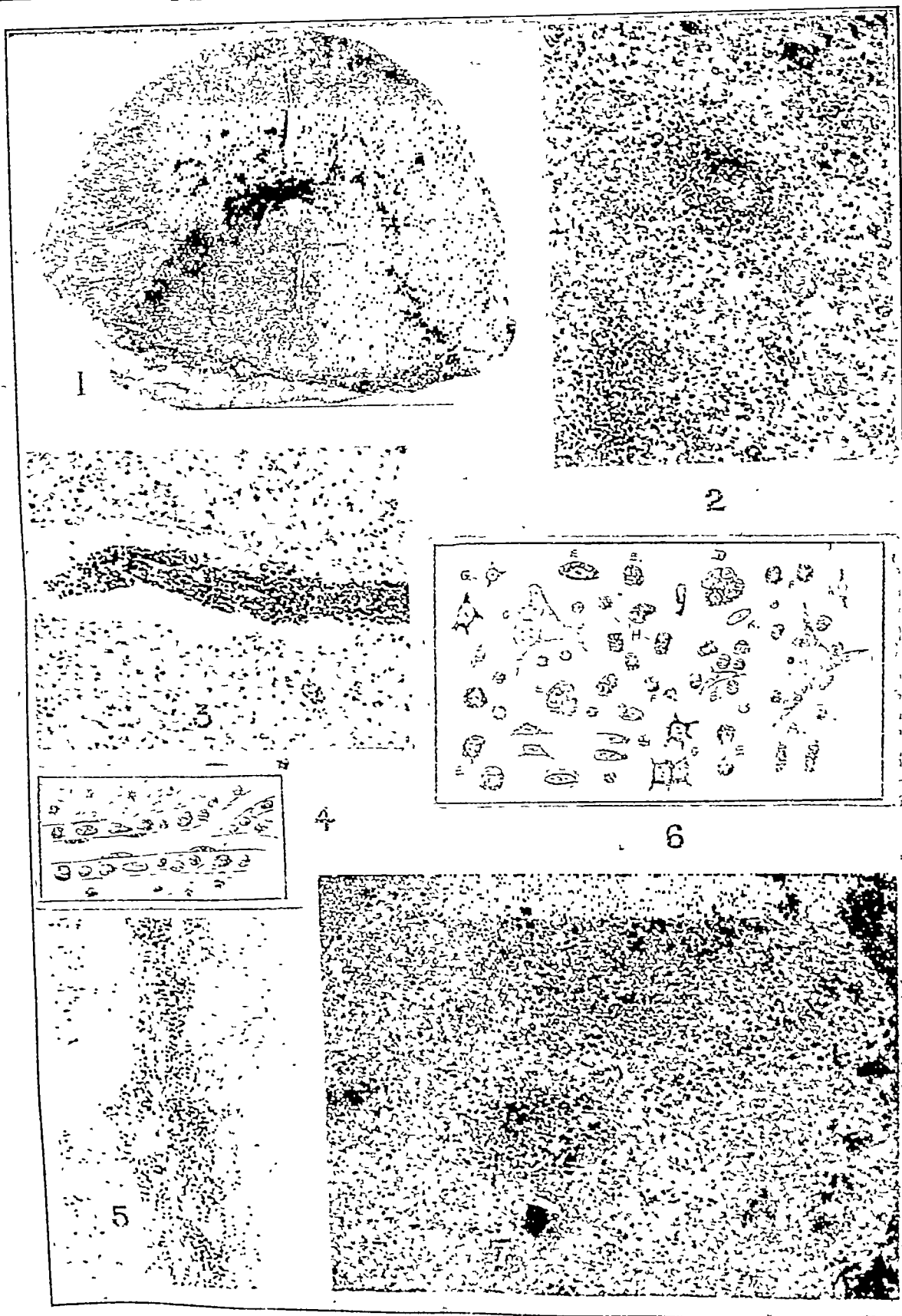
Fig. 3.—Reproduction of photograph of a vessel in the posterior median septum in a case of acute poliomyelitis of five days' duration, showing the intense infiltration of the adventitial sheath.

Fig. 4.—Diagrammatic drawing to show the cells lining a very fine vessel in acute poliomyelitis.

Fig. 5.—The reproduction of photograph shows the cellular infiltration of the meninges on the anterior surface of the cord especially around one of the anterior root bundles.

Fig. 6.—Cells of grey matter in acute poliomyelitis stained by the Heldenheim method. A, Small nerve cell with encroaching migratory elements. B, A mesodermic connective tissue cell. C, A large Deiters's cell with two nuclei. D, Neuroglial cell with many nuclei. E, Probably other forms of altered neuroglial cells. F, Polymorphonuclear leucocytes. G, Small Deiters's cells. H, Plasma cells and transitional types. I, Endothelial cells.

Fig. 7.—Anterior horn in lumbar region from a case of acute poliomyelitis of five days' duration. Unusual survival of the nerve cells amidst the intense inflammation of the interstitial tissues.



vessel walls and in the meningeal interspaces, so here one can recognise the deeply stained chromatic rounded nucleus with little or no visible cytoplasm, similar nuclei with a definite cell body and nuclei lying excentrically in a larger cell of oval or oblong shape. The latter may be regarded as plasma cells. 4. A few definite polymorphonuclear cells can be detected and there are other larger cells which may or may not be elements of the same type which have undergone swelling and other changes. In any case polymorphonuclear cells are certainly not numerous. 5. In most sections connective tissue cells of mesodermal origin are to be observed even when no vessel or capillary is seen in their neighbourhood. It is possible that these are either wandering cells or that the section has traversed the adventitial sheath of a vessel tangentially. Endothelial cells are also to be seen and their presence may be explained in a similar manner.

Excluding all the cells I have described there are still a considerable number which it is difficult to classify and for this reason it is impossible to gauge accurately the relative proportion of the various elements. My general impression is that neuroglial proliferation and lymphocytic (using the word purely with regard to morphological character and not in relation to origin) infiltration are the most prominent factors in the production of these cell masses. This view is more or less in accordance with that of several other observers, but Schmaus in a typical case of acute poliomyelitis, which he describes under the misleading and composite name of "acute hæmorrhagic myelitis, myelitis of the bulb, and Landry's paralysis," interprets the cellular infiltration in a different manner. He maintains that there is as much polymorphonuclear emigration as is seen in acute inflammatory conditions of other organs, although he recognises the lymphocytic and other varieties as well. Nissl, on the other hand, regards inflammatory processes in the central nervous system as on a different plane to those of other tissues. According to his view the perivascular adventitial sheath forms a biological boundary line between the mesodermal and ectodermal tissues and inflammation is generally represented by an infiltration of this sheath. Only in exceptional circumstances when the tissues are damaged does the nerve substance itself become invaded by mesodermal elements. In the central nervous system the neuroglial cells largely take on the duties of the polymorphonuclear leucocytes.

Wickman does not support this view of Nissl and inclines more to that of Schmaus, although he finds difficulties in accepting either the one or the other. From my own observations it appears to me probable that the round cell infiltration both of vessels and tissues is a prominent characteristic of acute inflammatory processes in the nervous system and that polymorphonuclear exudation plays a comparatively small part at any rate in the early stages. Moreover, I am inclined to agree with Nissl that the perivascular sheath and lymphatics, on the one hand, may tend to control the exudation, and the activity of the neuroglial cells, on the other, to compensate for its moderate dimensions.

The white substance.—True foci of cells apart from the infiltration of the vessel walls are rarely seen in poliomyelitis and I have found no instance in my cases. Wickman mentions it as occurring exceptionally in his seven acute cases but in no instance was the focus of any great extent. I have already referred to the perivascular infiltration which does not differ essentially in the white from the same process in the grey. Under high powers and with suitable methods of staining it is evident that the neuroglial cells in the white matter are undergoing changes similar to those seen in the neuroglial substance of the grey matter; the Dalters's cells are swollen and contain two or more nuclei; some lose their processes and become surrounded and vacuolated; the small round cells show swelling both of their nuclei and their protoplasm. On the whole, the changes are not nearly so intense as those seen in the grey matter.

The ganglion cells.—The ganglion cells of the anterior horns, of Clarke's column, and of the posterior horns all suffer in varying degrees. Speaking generally, those cells undergo the greatest change which are most closely involved in the inflammatory exudation, but this rule has its exceptions and occasionally remarkably healthy-looking cells are met with surrounded by intense proliferation of the tissue elements. On the other hand, it is most unusual to encounter definite degeneration of ganglion cells which are far removed from the foci of disease. All grades of cell change

are present from early chromatolysis to a condition in which it is difficult to detect the cellular outline or to differentiate the constituent parts. As a rule the nucleolus is the last portion of the cell to retain its structure and its staining reaction. Within the pericellular plicatures are frequently seen small round cells of the lymphocytic or neuroglial variety, some of which are in close contact with the ganglion cell and others perhaps within its substance. How far there is definite neuronophagia it is difficult to say, but certainly extensive degeneration of the cell can take place with little or no invasion of its surface by wandering elements.

The central canal.—In my cases it is impossible to detect changes in the contents or walls of the central canal which are not seen in normal conditions, if due regard is paid to the fact that the cellular infiltration of the grey matter may extend to its immediate proximity. Wickman describes amorphous granular material with occasional round cells within the lumen of the canal but no observer has recorded definite changes in the ependyma.

In summarising the morbid anatomy of acute poliomyelitis as observed by different investigators in cases examined within a few hours or days of the onset of the disease the following points stand out. 1. The most widespread and constant features are, on the one hand, the congestion of blood-vessels and proliferation of the cellular elements of their adventitial sheaths; on the other hand, the absence of all evidence of ante-mortem thrombosis or of changes in the intimal coat. 2. An intense proliferation or exudation of various cells, concerning the origin of which there is a difference of opinion, limited largely to those parts of the central nervous system most freely and generously supplied with blood—that is to say, in the neighbourhood of the rich capillary network of the grey substance of the cord and well-vascularised regions of the brain stem and brain. 3. Round-cell infiltration of the meninges more marked in the lower parts of the cord and on its anterior aspect, but extending in some cases to the intracranial meningeal cisterns. 4. The morbid anatomy of the epidemic and sporadic cases, whether in children or adults, has always proved to be essentially the same in the acute stage.

Time will not allow me to recount to you the many investigations which have been made on the bacteriology of acute poliomyelitis. These observations are of great interest but cannot be regarded as conclusive evidence either of the specificity or non-specificity of the disease. They are not indeed sufficiently complete to prove that in any case the organism which has been isolated has been the causative factor in the disease.

EVIDENCE OF THE INFECTIVE NATURE OF ACUTE POLIOMYELITIS.

On clinical grounds there has now accumulated a mass of evidence supporting the infective nature of acute poliomyelitis, and the fact that the morbid anatomy of the epidemic cases has proved identical with that of sporadic cases gives good reason for the belief that the two conditions are of similar origin and considerable presumptive argument in favour of its specific nature. Some 15 to 20 epidemics of the disease have now been recorded in various parts of the world, the most noticeable being those described by Médin, Bucall, Auerbach, Pasteur, Painter, Mackenzie, and Nannestad.

In London it is difficult to say when there is an epidemic and when there is not, but it is well recognised that the period from July to October is that in which the majority of acute cases are seen, and Batten pointed out the prevalence of the disease in the year 1904. The evidence of the infective nature of the disease can hardly be deemed deficient and it provides, through the epidemics, strong support for the belief that certain forms of encephalitis are due to the same process and the same morbid agent as acute poliomyelitis. The origin of many cases of infantile hemiplegia in this way was long ago suggested by Strümpell and Pierre Marie, and considerable additional testimony has been adduced by Batten, White and Worthington, and other observers. Lamy recorded an interesting old-standing case of atrophic palsy of the right leg in a man who died at 43 years of age. Post-mortem there were found, besides the evidence of old poliomyelitis in the lumbar cord, several old patches of disease in the cerebrum, the largest of which involved the left parietal region.

Sanger and Möbins describe the simultaneous occurrence of a febrile illness in two sisters, one of whom developed a typical spinal paralysis and the other a cerebral hemiplegia.

Marie has contributed a case in which one leg was the seat of a spastic and the other of a flaccid atrophic palsy. Beyer in 1895 recorded the case of a girl who at the age of five years became paralysed on the left side from a cerebral lesion. Epilepsy supervened and the patient died some years later. At the necropsy there were found a porocephaly of the right hemisphere and an old poliomyelitic condition in the left side of the cord. Oppenheim in his text-book of nervous diseases refers to a case of encephalitis of the pons producing facial palsy associated with lumbar and cervical poliomyelitis. E. C. Williams in THE LANCET of 1899 tells us of a case of a school-girl who became paralysed down the right side with aphasia in an acute illness commencing with headache and convulsions. Later examination showed that while the arm was purely spastic the leg of the same side gave evidence of a spinal as well as of a cerebral palsy. Similarly Neurath recounts the history of a child, aged six years, who, during an acute febrile illness, developed right cerebral hemiplegia and atrophic spinal palsy of the left leg. Negro observed the case of an infant, aged 18 months, who in the course of an acute febrile attack associated with convulsions displayed right cerebral hemiplegia and left spinal paralysis. Calabresse has enriched the literature of this subject with two important cases. In the one acute poliomyelitis was associated with ocular palsies, and in the other a spastic hemiplegia, ocular palsies, and atrophic palsy of the other leg were all combined.

There are many cases, therefore, which point to the conclusion that encephalitis of the hemisphere and of the cranial nerve nuclei may have the same origin as acute poliomyelitis, and although the opportunities for examining cases in the acute stage have been scanty we have already seen that in most fatal cases of poliomyelitis the morbid process has extended much higher in the central nervous system than the clinical symptoms at the time of death have suggested. Moreover, Batten and Prickett have had the opportunity of examining the brain in a case of acute encephalitis within a few days of the onset of hemiplegia and have found morbid changes strongly resembling those of acute poliomyelitis.

CLINICAL.

Before entering upon the discussion of the pathogenesis of the disease I must briefly refer to certain clinical features of its acute stage. Generally speaking, the onset of paralysis is preceded by pyrexia, vomiting, convulsions, general malaise, and pains in the head, neck, back, and limbs. In the more fulminating type of case rigidity of the muscles of the neck and back has been noted in the early stages and cerebro-spinal meningitis has been suspected. Just as in the specific fevers, the constitutional symptoms of the infant differ in certain respects from those of the adult. Vomiting and convulsions are more associated with the infantile cases than with the adult although marked vomiting was a prominent feature in the case of a youth, aged 21 years, recorded by Sherman and Spiller. We are, on the other hand, dependent upon the older cases for our knowledge of the character of the pain in this disease and with them it is usually a symptom of considerable moment. They generally complain in the first instance of pain in the head, back, and limbs, of a sharp or burning character, but both before and after this has subsided a most noticeable feature is the distaste for passive movement. This is confirmed by most mothers who have nursed children in the early days of the disease and the fact that the children cannot bear to have their limbs handled is not an infrequent excuse for meagre ablations. We may, I think, distinguish two types of pain: (1) spontaneous temporary pains in the back, head, and limbs in the early hours of the disease, and (2) the pain produced by movement (reflex pains) generally lasting for a few days even after the temperature has subsided. These facts are in harmony with the anatomical data. As we have seen, an intense congestion of the vessels of the central nervous system together with early proliferation of cells in the perivascular sheath and in the meninges are the most widespread and earliest evidences of the acute irritative process.

From the motor aspect one of the characteristics of acute poliomyelitis is the fact that the initial paralysis is always more extensive than the residual in those cases which survive. If we analyse this more closely in relation to severe partially paralysed, perhaps only for a few hours or a day or two; others show atrophy and the reaction of degeneration

but yet make a comparatively rapid recovery in the course of some weeks or months; finally, there are those which never regain power or in which only a few fibres respond to long and persevering treatment. Here, again, we have anatomical analogues. There are anterior horn cells which resist the morbid influences at work and which, while showing no striking structural alterations, may well undergo some temporary derangement of function. There are cells which show what I have described as the early and moderate type of degeneration but which are capable of restoration, and, finally, there are whole groups of cells which, either entirely or with only one or two exceptions, are irretrievably swamped and destroyed in the surrounding exudation.

One more clinical fact about which little has as yet been written. Since Babinski supplied us about ten years ago with a delicate test for the healthy or unhealthy condition of the pyramidal fibres of the cord, it must have happened to you, as it has on several occasions to me, to have obtained an extensor response on eliciting the plantar reflex in cases of acute poliomyelitis. It is, of course, in only a small number of severe cases that the muscles moving the toes are left intact and that this test is therefore applicable; on the other hand, a careful distinction has to be drawn between a pathological extension and an infantile response. Making due allowance for these facts, there is still a small percentage of cases in which definite evidence of pyramidal tract involvement is forthcoming. I have seen several such cases in children and at least one in an adult to which I will shortly refer. Some years ago I saw a young man, aged 22 years, who during August developed a typical attack of acute poliomyelitis. On my first examination, about ten days after the onset, I found that both the flexors and extensors of the right knee and the flexors of the left knee were powerless, while there was only slight weakness below the knee in either leg. On this occasion the right knee-jerk was absent, the left knee-jerk was present, and neither plantar reflex was obtained. A week later the movements at the ankle- and toe-joints were practically restored and I obtained a well-marked extensor response in both feet; the right knee-jerk was still absent and the left was more brisk than normal.

We have already seen that the white columns of the cord, particularly the antero-lateral, suffer to a moderate extent in the disease, and the marked swelling of the axis cylinders and myelin sheaths noted by all observers in the acute stage sufficiently explains this symptom of organic change in the pyramidal system—a symptom which, I believe, is in some cases only of transient duration.

Another clinical point is worthy of note. In the epidemics and in the family cases, like those of Pasteur and of Bulow-Hansen and Harbitz, other members of the household have been taken ill at the same time without developing paralytic phenomena. There is evidence, therefore, of the existence of what may be termed abortive cases. On the other hand, there is a great probability that many cases of acute generalised poliomyelitis occur in young infants and rapidly prove fatal without being recognised. The child observed by Drummond who died within six or seven hours from the onset is suggestive of this being the case.

PATHOGENESIS.

We are now in a position to discuss the various theories which have been advanced to explain the nature of acute poliomyelitis. That view, which originated from the examination of long-standing cases and which indicated a primary degeneration of the anterior horn cells and an entirely secondary change in the interstitial tissues, cannot at the present time be taken seriously. The examination of early cases has been its death-blow. The theory which it is most convenient to take second is the so-called "vascular" one, originally introduced by Pierre Marie and supported by Batten in recent years.

I must say at once that by a number of writers the term "vascular" is used erroneously, or at any rate in a way which is apt to lead to a confusion of ideas. The fact that within an area of tissue the vessels are engorged with blood and surrounded by numerous cells which have emigrated from the blood stream or proliferated *in situ* and that there are serous exudations or hemorrhages, is not in itself sufficient reason for calling the lesion a vascular one. It is generally accepted that all the demonstrable phases of inflammation have to do with the vessels and the blood—in fact, inflammation can only be recognised by vascular phenomena. Thus, dilatation of the vessels, acceleration and

then slowing of the stream, followed possibly by blood stasis and exudation of lymph and cells are the text-book criteria of inflammation. Again, we are taught that three things may happen as a final result—namely, resolution, suppuration, or necrosis due to complete blood stasis and thrombosis. We recognise, therefore, that thrombosis of vessels may occur as a result of inflammation, but the origin of a thrombosis in that way should not incite the observer to call the whole process "vascular." In acute poliomyelitis thrombosis of vessels may be present at the time of examination some time after the onset. Is this thrombosis a primary lesion or is it secondary to an inflammatory process? On this point Batten expresses a decided opinion when he states "that the condition is due to a primary thrombosis of a branch or branches of the anterior spinal artery supplying the grey matter of the anterior horn." Head and Campbell have said, "If by 'vascular' is meant that the disease is directly secondary to occlusion or interference with a vessel we deny its correctness; if, on the other hand, it is meant that the vessels play an important part in the general inflammatory process it is a platitude," and they go on to say that many observers have occluded the vessels of the spinal cord and brain without producing inflammatory changes or hæmorrhages. In answer to this Batten says, "It must be remembered that obliteration of a large vessel is by no means necessarily comparable to the condition which is produced when thrombosis occurs in smaller vessels. Far more to the point are the experiments of Prévost and Cotard (although performed many years ago) with regard to the changes which take place in an infarcted area. By the means of fine tobacco seeds they succeeded in producing infarcts in various organs and they proved by their experiments that congestion, hæmorrhage, and exudation of the cells were the only results of obliteration of small vessels."

Now, the argument that the experiments of Prévost and Cotard prove the dependence of the inflammatory changes on the obliteration of vessels will not, to my mind, hold good. Conclusive evidence on this point is supplied by the work of Hoche published in 1899. This investigator injected into the lumbar arteries of dogs aseptic material in the form of lycopodium granules, pollen of *Typha japonica*, granules of maize starch, and kamala glands. By these means he produced lesions in that part of the spinal cord supplied by the arteries which had a strong resemblance in certain respects to those of poliomyelitis. The various materials injected were responsible for the formation of numerous embolic softenings or infarcts within the cord of sizes varying with the calibre of the vessel in which the particle became lodged. In addition to the production of necrotic areas, however, there was also evidence of tissue reaction to the chemical irritation of the emboli in the shape of marked cellular infiltration of the adventitial sheath of the vessels both in the white and in the grey matter, identical, so far as one can see, with that found in acute poliomyelitis. The most important fact is that although the infarct production was the same whatever species of emboli were introduced, the degree and intensity of the tissue reaction varied with the chemical nature of the emboli. For instance, the most marked reaction followed the use of kamala glands, less reaction that of the pollen of *Typha japonica*, and little, often no, reaction that of lycopodium granules. It is evident, on these grounds alone, that mechanical blockage of vessels cannot of itself produce the tissue reaction, but the fact is still further emphasised by Hoche's finding that no tissue reaction results unless the source of chemical irritation is brought into close relation with the tissues themselves. If a branch of the anterior spinal artery was blocked by one of the larger emboli just before it entered the grey matter no inflammatory action was produced; on the other hand, when the irritating particles were distributed through the finer branches and capillaries cellular proliferation was induced in the surrounding tissues varying with the chemical nature of the substance used.

What applies to the vegetable material used by Hoche must apply at least equally to the tobacco seeds of Prévost and Cotard and the only evidence in favour of the view that perivascular round cell infiltration can be the result of simple thrombosis or embolism falls at once to the ground. But perhaps the best answer to the "primary thrombosis" theory is that no observer who has examined the cord during the first few days after the onset of illness has found thrombosis of any of the vessels. For these and many other reasons into which I will not enter now I am quite unable to support the

"primary thrombosis" theory concerning the origin of acute poliomyelitis and it is equally clear from all I have already put before you, both from the observations of others and from my own cases, that whatever agent induces the perivascular infiltration does its work impartially on the vessels radiating through the white columns of the cord and the various vessels supplying the brain stem, as well as on the branches of the anterior spinal artery. Wickman, who has had unequalled opportunities of studying the early stages of the disease, is emphatic on this point.

It may, and probably will, be argued that all cases of poliomyelitis have not an identical pathological basis. It will be said there are cases in which the onset is extremely rapid and associated with little or no constitutional disturbance and with no pain. With these cases I am familiar, but there are one or two points to bear in mind in this connexion. In the first place, there is an enormous variation in the degree of constitutional disturbance with every acute specific fever. We are all familiar with this in the case of measles, chicken-pox, and diphtheria, and we recognise an ambulatory form of typhoid fever, but we do not for this reason exclude the cases with little or no pyrexia, with no loss of appetite, or headache or pains, from the category of those diseases. In the second place, it must be remembered that the paralysis is almost an accidental result of the disease depending on the involvement of the anterior horn cells by the inflammatory exudation, and that the latter may only here and there be sufficiently intense to affect the former. A considerable amount of widespread subacute inflammation may therefore be present with no, or very little, indication in the way of paralysis or of constitutional disturbance. In the third place, we often have to deal with cases in which the acute stage is a matter of more or less remote history and the reliability of witnesses on these points is proverbially insecure. At the same time, after making due allowance for those sources of error, I am prepared to admit that there are a very limited number of cases in which the suddenness of onset and the narrow limitation of the paralysis do suggest the possibility of a true vascular lesion of the cord. I have, indeed, suggested elsewhere the same possibility in relation to the occurrence of certain peripheral palsies limited to the distribution of a single nerve root. On the other hand, I know of no confirmation on histological evidence of either the one or the other if cases of hæmatomyelia are excluded.

Having now rejected two of the theories which have been put forward for the explanation of acute poliomyelitis, I think we are in a position to say that the process is an inflammatory one and probably due to the influence of some micro-organism or its toxin. There are two questions, at least, still to be answered—1. Has the toxin a special affinity for any particular tissue? 2. Is the toxin brought into relation with the tissues of the central nervous system through the medium of the blood or of the lymph, if, indeed, a fair distinction of this kind can be drawn?

With regard to the first question we are at once struck by the fact that the most intense reaction is found in association with those parts where ganglion cells are most numerous, especially in the spinal cord. Does this indicate a chemical affinity on the part of the poison for the true nervous elements? Not necessarily because, as I have already pointed out, the regions in which nerve cells are present are also the regions where blood-supply and capillary network are always the richest. The same parts, therefore, are most freely bathed with blood, probably with lymph, and most easily accessible to the poison carried by these fluids. On the whole, the evidence favours the view that there is no special affinity on the part of the toxin for the nerve cells and that the latter suffer chiefly through the inflammation of the tissue which supports them. The healthy condition of cells away from the foci of inflammation and sometimes in their immediate neighbourhood points strongly in this direction.

The other alternative is that the poison exerts a special influence on the neuroglial tissue and in favour of this there is a good deal to be said. It would explain why the central nervous system suffers and the peripheral nerves escape. It is in harmony with the neuroglial proliferation, more marked in the grey matter where the poison is brought into closer contact with the tissues, less marked but still evident in the white matter where the capillary blood-supply is poorer and where the neuroglial substance is broken up by columns of well-myelinated nerve fibres. If we adopt the view that the poison has this

finity for the neuroglia and exerts it from the blood stream we may well regard the perivascular and meningeal infiltration as evidence of a protective process, successful to a great extent in the white matter but unable always to cope with the accumulation of toxic forces in the vascular grey matter. Whether it is justifiable or not to assume a particular relationship between the poison of acute poliomyelitis and the neuroglial tissue of the central nervous system, it is clear that in some way the destruction of the ganglion cells is the result of the inflammation of the interstitial substance and not due entirely to toxic influences.

Is the infection of the nervous system hæmatogenous or lymphogenous? The most striking evidence in favour of the hæmatogenous infection is afforded to my mind by the experiments of Hoche to which I have already referred. In one of his illustrations you will see that the general appearances of the section of the cord are similar to those of acute poliomyelitis, if we exclude the extensive necrosis of the white as well as grey matter produced by the blockage of the vessels, and we know that in this case the poisonous material was introduced through the blood stream. Moreover, the finer histological details as described by Hoche in his paper bear a strong resemblance to those of the disease we are considering.

Wickman is the chief supporter of the lymphogenous origin of the infection in poliomyelitis and he certainly urges the claim on strong grounds. The inflammation in the meninges and perivascular lymph channels and the not infrequent spread of the disease in an upward direction are points in its favour, but he has not given us any clear evidence of infection of the central canal in the cases he has examined. The same author has drawn attention to the general resemblance of the morbid processes in the central nervous system to those found in rabies either of man or the lower animals. If one examines the drawings made by Sir William Gowers for the Transactions of the Pathological Society in 1877, representing the changes in the medulla in four cases of hydrophobia which he had examined, one finds a picture which would do well for what other observers, as well as myself, have found in fatal cases of poliomyelitis. There are the same distension of blood-vessels and the same infiltration of perivascular lymph spaces with cells which are regarded as leucocytes; there are, too, the foci of round cells in the bulbar nuclei and in the formatio reticularis. Gowers mentions that similar changes are present in the spinal cord in some cases, and later writers have regarded the inflammatory condition of the latter as characteristic of rabies, whether it is accidental or experimental in origin. They have described the perivascular infiltration in the white as well as the grey matter, the foci of normal cells in the cornua, the serous exudation around vessels, and the various degrees of degeneration in the ganglion cells. Schaffer believes that the greatest intensity of pathological change was present in that part of the cord which innervated the region of the source of infection, but this is not confirmed by Babes. Wickman has reproduced a drawing from the monograph of Hogyes showing under low magnification the general appearance of the sacral cord of a child who had been bitten and infected in the thigh, and uses it as additional evidence in favour of the lymphogenous origin of poliomyelitis. The anatomical similarity between rabies and poliomyelitis is rendered still more interesting by the fact that the paralytic form of rabies, which is by no means uncommon, may present clinical features indistinguishable from those of acute poliomyelitis. The well-known case published by Bristowe and Horsley of hydrophobia resembling clinically an acute ascending paralysis showed a morbid anatomy which would readily pass for an acute poliomyelitis (although not for a Landry's paralysis), and the distinction was only confirmed by the fact that rabies was reproduced in animals by inoculation from the cord of the patient. However interesting the points of similarity between rabies and poliomyelitis may be, their use as evidence of the lymphogenous origin of the latter must be delayed until the former has been definitely shown to result from that mode of infection.

Against the view that the cord in poliomyelitis is infected through the lymphatics of the peripheral nerves must be ranged the experiments of Homen to which I referred in my first lecture. It was shown there (1) that the entry of organisms and toxins into the spinal cord was effected chiefly along the various septa within the lymph channels of the radial vessels and along the anterior, and more especially the posterior, roots: (2) that within the spinal cord and

its membrane the infection was carried upwards mainly between the meninges and along the central canal; and (3) that the changes within the cord were somewhat patchy and irregular, affecting the grey and white matter alike and especially the region of the posterior median septum. These facts do not tally with the lesions of poliomyelitis and have much more in common with those of ascending myelitis.

Before passing on to my final conclusions I must say a word or two with regard to the specificity of acute poliomyelitis. No dogmatic statement can be made on this point with the bacteriology of the disease in its present extremely incomplete and unsatisfactory position; but the epidemic phases of the disease and the lack of success which has attended efforts to produce experimentally, with the ordinary pathogenic organisms, any condition comparable to that of poliomyelitis are two important points in favour of the view that it is a specific disease. The argument that it frequently follows measles, scarlet fever, influenza, and other specific fevers cannot outweigh the other facts or, indeed, be regarded very seriously. There are plenty of instances of acute specific fever following quickly on the heels of another without any suggestion forthcoming that the latter condition is a result of the earlier one.

I cannot help feeling strongly that acute poliomyelitis will, before many years have passed, be included in the category of the specific fevers. It has the constitutional disturbances, the age incidence, the seasonal exacerbations, the sporadic and epidemic types, the immunity from second attacks, associated with the obscurity as to its bacterial origin, which are shown by measles, scarlet fever, and others, and the severe inflammatory lesions limited to particular tissues which are met with in typhoid fever, diphtheria, and variola, as well as other members of the same category.

The following conclusions appear to me justifiable concerning the disease:—1. It is an acute specific fever occurring sporadically and epidemically, differing from many others but resembling some—variola, for instance—in the facts that its lesions may be discrete or confluent and that its results may be permanent. 2. Its essential lesion is an inflammation of the interstitial tissue of the central nervous system due to the presence of micro-organisms or their toxins probably in the blood (but possibly in the lymph) circulating within that system. 3. The fact that the grey matter suffers more than the white matter is explained by the greater vascularity of the former and the resistant character of the component parts of the latter. 4. The same morbid process underlies some cases of encephalitis both of the brain stem and the cerebrum, among which may probably be included many examples of infantile hemiplegia. 5. The bacteriology is at the present time practically an unknown quantity. Bacteriological investigation of the blood as well as of the cerebro-spinal fluid is indicated, and more complete examination of other organs, especially of the intestines.

UNIVERSITY OF LONDON.—An election to the Senate of the University of London took place on March 19th. There were two ballots; at the first 243 voted, the figures being 114 for Dr. L. E. Hill, 104 for Dr. J. R. Bradford, 102 for Dr. J. Kingston Fowler, 95 for Dr. H. A. Caley, and 48 for Dr. Norman Moore. Dr. Norman Moore did not proceed to the second ballot, when 227 voted, and the figures were found to be 126 for Dr. Hill, 125 for Dr. Caley, 100 for Dr. Bradford, and 99 for Dr. Fowler. Dr. Hill and Dr. Caley were therefore declared to have been elected to the two vacancies on the Senate.

ROYAL FREE HOSPITAL.—The Duchess of Albany, attended by Lady Evelyn Moreton and accompanied by Mrs. Harkness, visited the Royal Free Hospital, Gray's Inn-road, on the afternoon of March 15th, where she was received by Dr. Harrington Sainsbury, the senior physician; Mr. Conrad Thies, the secretary; and Miss Cox-Davies, the matron. Her Royal Highness visited the wards, nurses' quarters, and various departments of the hospital and expressed her great satisfaction at the many structural and other improvements recently carried out and her approval of the proposed erection of two new operating theatres which are urgently needed to meet the greatly increased surgical work of the hospital. Before leaving Her Royal Highness signed the visitors' book and partook of tea in the matron's sitting-room.

The Hunterian Lectures

OR

THE RENAL FUNCTION IN ITS RELATION TO SURGERY.

Delivered before the Royal College of Surgeons of England,

By J. W. THOMSON WALKER, M.B.,
C.M. EDIN., F.R.C.S. ENG.,

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HOSPITAL FOR STOMACH.

LECTURE II.¹

Delivered on March 4th, 1907.

THE ESTIMATION OF THE FUNCTION OF ONE KIDNEY.

MR. PRESIDENT AND GENTLEMEN,—In my first lecture I endeavoured to show what means had been adopted to ascertain the value of the combined function of the kidneys. I shall now pass to the consideration of the methods at the disposal of the surgeon in estimating the function of one kidney. When one kidney is diseased and it is accepted that its function is seriously impaired or totally destroyed the question of prognosis and the decision in regard to surgical interference and its extent will in a considerable majority of cases depend upon the view which the surgeon takes in regard to the functional activity of the second kidney. I shall briefly review the methods upon which until a recent date the surgeon relied for the data on which to base his judgment in this matter.

Where one kidney is obviously diseased the patient may show symptoms of failure of the renal function and thus betray the reduced activity of the second kidney. With these symptoms before him the surgeon will be able to decide whether he will take the risk of advising surgical interference and how far this may be carried. But it is in the case where general symptoms of renal failure are absent that more information is desired in regard to the functional power of the second kidney. The surgeon has hitherto had to depend upon the presence of local signs of disease of the second kidney, upon his experience of the pathology of such diseases, and lastly upon statistics. There may be enlargement, pain, and tenderness of the organ, but these do not give unquestionable proof that the kidney is seriously diseased. The x-rays may give valuable aid in some cases of calculous disease. Extensive shadows in the second kidney may indicate that the margin of renal tissue is too small to maintain the function, or, on the other hand, the absence of shadows will show that calculi are not present in the second kidney.

But these form only a small number of the cases that are presented for consideration. The real difficulty arises when there are no general symptoms of renal failure and there are no local signs of disease of the second kidney. It cannot be said in such a case that the absence of signs of disease are a proof of the health of the second kidney, for experience has abundantly shown this to be erroneous.

The statistics which have been compiled with regard to the bilateral incidence of various renal disorders may be used in this service. Some of these are seen in the following list:—

Statistics of Solitary Kidneys and Bilateral Renal Disease.

Solitary kidneys (one kidney atrophied)	6 in 15,904, 1 in 2650 (Morris).
Small, shrunken, or wasted	59 in 8178, 1 in 138 (Morris).
Malignant growths, bilateral	12 in 118, 1 in 10 (Kelysack).
Polycystic kidney, bilateral	150 in 191 (Kidster, collected). 25 in 28 (Dickinson, collected). 65 in 68 (Lejars, collected). 4 in 4 (Israel). 3 in 7 (Morris).
Calculus, bilateral	38 in 76, 50 per cent. (Legueu). 90 in 764, 11.78 per cent. (Kistner). 21 in 83, 25.3 per cent. (Torrès).
Pyelonephritis, bilateral	59 in 71, 83 per cent. (Weir).
Tuberculous disease, bilateral	43 in 81, 53 per cent. (Hedberg and Oppenheim). 106 in 205, 51 per cent. (Pulei).

¹ Lecture I. was published in THE LANCET of March 16th, 1907, p. 711.

Statistics have, however, only a limited value. It will be seen by referring to the figures quoted above that renal growths are unilateral in over 89 per cent. of published cases. This percentage is therefore accepted as a guarantee that in removing a kidney containing a renal growth little or no risk is run of the patient having submitted to a useless operation from the presence of a second tumour in the remaining kidney. Again, it is known that the ratio of solitary kidneys is 1 in 2650 cases and that a kidney may be removed with but small chance of the patient being dead from uræmia in a few days from the removal of his entire urine secreting apparatus. Apart from such unusual cases, however, there is a large number of patients who suffer from some renal disease which is notoriously bilateral in its later stages. These cases include certain forms of renal calculus, tuberculous disease, and suppurative diseases of the kidney. In operating upon the obviously diseased kidney in such conditions and especially in proposing removal of the organ a certain risk is undertaken.

I have collected from the literature 75 cases of operation upon one kidney where uræmia or anuria commenced within the first few days after operation. Of these 26 (34.6 per cent.) were calculous, 17 (22.6 per cent.) tuberculous, and other suppurative conditions were present in 13 (17.3 per cent.). Nephrotomy was performed in 27 cases and nephrectomy in 48. There was no second kidney in five. The second kidney was atrophied in seven, the seat of nephritis or degeneration in 18, calculus in 12, pyo- and hydronephrosis in nine, tuberculous in six, and new growth in two. It is certain that in some of these cases operation would not have been performed had the state of the second kidney been known.

CYSTOSCOPIC EXAMINATION OF THE URETERAL OPENINGS.

The discharge of urine or other material from the ureteric orifice might be expected to give valuable assistance in the investigation of renal disease, and this is the case where the localisation or diagnosis of an obscure disease is the subject of inquiry. But when the diagnosis is already made and the sole object of investigation is to measure the functional activity of the kidney the information gained by the examination is frequently disappointing.

The absence of a periodic discharge of urine does not signify that no kidney is present or that the functional power of the kidney is destroyed. It not infrequently happens that no discharge of urine is observed for a considerable time when there is every reason to believe that the kidney is healthy. Such periods of functional inactivity are the result of nervous influences. Where one kidney is absent it does not of necessity follow that the ureteral opening is also absent. In a case recorded by Jolly² the right kidney was absent. On the right side of the trigone there was a ureteral opening into which a probe could be passed for 1 centimetre and beyond that there was a fibrous band 13 centimetres long. Usually, however, when one kidney is congenitally absent there is no ureteral opening on that side. The remaining ureter may be normal in position or it may be displaced. In 18 cases where one kidney was absent the corresponding ureter was also absent in 12, and it was specifically stated that the ureteral orifice was absent in four of these.³ It will sometimes happen from various causes that there is a difficulty in finding one ureteric orifice in cases where both kidneys are present.

A copious efflux is not a guarantee that the function of the kidney is healthy. The polyuria of advanced interstitial nephritis and of waxy disease may be observed on the side of the second kidney in renal surgery. A purulent or bloody urine is no measure of the renal function, however important it may be in diagnosis. I have never seen a "solid efflux" of blood and debris such as Mr. E. Harry Fenwick describes,⁴ but I have met with a case of hæmaturia in which an irregular greyish spongy-looking clot projected from the left ureter (Fig. 14). The renal function was not seriously impaired. It is a different matter when a worm of semi-solid waxy pus is slowly expressed at intervals from a reddened ureter (Fig. 15). I have notes of two such cases. There had been symptoms of renal trouble for eight and 11 years respectively and in each case the kidney was a large thick-walled pyonephrosis containing much semi-solid pus,

² Soc. Anat. de Paris, Jan. 9th, 1886.

³ In these cases the genital system was either normal or no abnormality was mentioned in 15. There was general malformation of the external genital organs in one case and abnormality on the same side as the absent kidney in two.

⁴ Ureteric Mesotocopy in Obscure Diseases of the Kidneys, 1903.

débris, and calculi. This form of ureteric discharge is significant of a functionless kidney.

I have met with four examples of a condition which Mr. Fenwick has described as the "dragged out" ureteric orifice.

FIG. 14.



Ragged greyish blood clot projecting from left ureter after severe renal hamaturia.

Of the condition this observer says: "It affords the most conclusive *cystoscopic* evidence that we possess of the partial destruction of a small, often unfeeleable, kidney by tuberculosis." The orifice is displaced upwards and outwards and

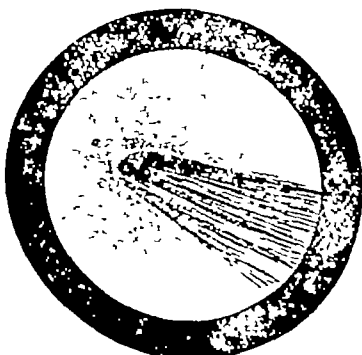
FIG. 15.



Mass of semi-solid pus expressed at intervals from left ureter. Case of left pyonephrosis.

lies in the depth of a tunnel-like depression. In the four cases that came under my observation there was advanced tuberculous disease of the kidney in all. In one case the hypertrophied inter-ureteric bar which formed a ridge running along the floor of the tunnel was dragged in and out at

FIG. 16.



"Dragged out" ureter in case of renal tuberculosis.

each respiratory movement almost like a piston; in another no respiratory movement took place but pressure on the kidney caused a violent tug at this ridge of muscle.

CHROMOCYSTOSCOPY.

A method of cystoscopic estimation of the renal function has been suggested by Vallicher and Joseph.⁵ An intramuscular injection of four cubic centimetres of a 4 per cent. solution of indigo carmine is made. Elimination commences in 20 minutes, reaches its height 30 minutes later, and has ceased in two hours. The authors claim that the examination of the ureteral openings and the observation of variations in the depth of staining of the urines during the elimination will afford an approximate idea of the functional value of the two kidneys (Fig. 17). Similar observations had previously been made with methylene blue. This method is preferred by some (Hartmann, Leguen) to the results of ureteral catheterisation. The two methods do not, however, lend themselves to comparison. Differences in the depth of staining of the urine of each kidney can be observed by either method.

FIG. 17.



Chromocystoscopy. The left ureter is shown at the moment when a jet of urine stained with indigo-carmin is being expelled.

but much more accurately in collected separate urines than by watching the momentary jet from the ureteral orifice. But in addition to this the chemical and microscopical analysis of the separated urines gives invaluable information that cannot be obtained by chromocystoscopy. At the best it is a ready clinical test of the presence or absence of a ureteral fistula and from the opacity of the jet some idea may be gained of the function of the kidney. As a means of localising the position of the ureters in difficult cases and of making observations on the renal secretion where catheterisation of the ureters or separation of the urines is impossible it may play a minor rôle.

METHODS OF OBTAINING THE URINE OF EACH KIDNEY SEPARATELY.

It has been the ambition of surgeons almost since the date of the first nephrectomy to obtain the urine of each kidney separately for examination. Dr. Tuchmann⁶ perfected his apparatus five years after Simon's nephrectomy and other methods were published in rapid succession. So far as the earlier attempts were concerned the chief source of interest was the localisation of disease to one or other kidney. Other means have been introduced and perfected which have to some extent, although not entirely, replaced this use of the separation of urines, and its chief sphere of usefulness at the present time is the examination of the urines in order to estimate the function of these organs.

It is beyond the scope of these lectures to trace the evolution of the methods of separation of the urine from each kidney, nor shall I discuss the technique or dwell upon the arguments for or against this method of investigation. We are concerned here with the results obtained by different methods of testing the renal function.

THE EXAMINATION OF THE URINES OF THE TWO KIDNEYS.

The cumulative evidence of many series of careful examinations have provided a quantitative average for the combined output of the two kidneys. With the separation of the urine into the output of each kidney the necessity for a new standard for comparison arose. It was not sufficient to divide the total output by

⁵ Münchener Medizinische Wochenschrift, 1903, p. 2023, and Deutsche Medizinische Wochenschrift, 1904, p. 536.

⁶ Wiener Medizinische Wochenschrift, 1874, pp. 21-22.

two in order to indicate the work of one kidney, for Landois, Hermann, Ludwig, and others have shown the unequal physiological value of the kidneys at a given time in animals.

For reasons that I shall presently relate the urine of the second kidney, when one is diseased, cannot always be used as a normal standard with which to compare the work of the diseased organ. An independent normal standard must therefore be set up to show the average normal output of one kidney. This standard has been provided by the work of Albarran.⁷ According to this observer no regular alternation is observed in the work of the two kidneys, but when the secretion of each kidney is collected during six or 12 hours it is found that each has performed nearly the same work. One may consider as practically healthy a kidney which secretes a urine like the following in 24 hours:—

Quantity		600 to 700 cubic centimetres.
Urea		12 to 15 grammes.
Chlorides		5 to 6 "
Δ		-1.30° to -1.50° C.

If the time during which the urine is collected is only two or three hours the figures are less reliable. It is then necessary to study the urine at a time when digestion is not going on and when the individual has not drunk anything for several hours.

Albarran gives the following as an analysis of urine collected from one kidney during one hour under these conditions when both kidneys are healthy:—

Quantity		50 to 60 cubic centimetres.
Δ		-1.20° to -1.50° C.
Urea		12 to 17 grammes per litre.
NaCl		10 to 12 "

In comparing the function of two healthy kidneys this observer found that when the comparison was made of urine collected during so short a time as a quarter of an hour the difference amounted to as much as from 10 to 30 per cent. in the quantity of urine secreted, but when the examination was extended to one hour the difference was reduced to 10 per cent. The difference in the quantity of urea might be one gramme per litre or might amount to 6.50 grammes. The difference in the quantity of chlorides amounted to 50 centigrammes per litre and might attain five grammes. The diseased kidney usually secretes less urine than its healthy or less diseased neighbour. This will in some manner depend upon the form and extent of the disease. A hydro-nephrotic kidney will pass no urine through the catheter or only a very small quantity during the period of its retention. A pyonephrosis or an extensive pyelonephritis will produce a much reduced quantity. This reduced activity may be thrown into stronger relief by the secretion of an increased quantity of urine by the healthy organ and an erroneous idea of the extent of the disease may be gained by observing the inequality of secretion in such a case. The polyuria may result from passing causes or it may result from compensatory hypertrophy.

But there are frequent exceptions to this statement. The two urines may be practically equal in quantity where one kidney is diseased. Further, as Albarran has pointed out, there may be an exaggerated activity on the part of the diseased organ so that a polyuria may be observed on this side. There may be at the same time an excessive elimination of urinary salts. The urine of the diseased side is often lacking in pigment. This may be observed when the quantity of urine does not show a very great difference from that of the healthy kidney; it is more striking where the quantity of urine is excessive on the diseased side. There is usually a diminution in the quantity of urea, chlorides, and phosphates contained in the urine of the diseased side, and this is greater when the disease is more advanced. The following analysis of the urines from a case of calculous pyonephrosis illustrates this and other points to which I shall refer later.

	Right kidney (diseased).	Left kidney.
Quantity	206.5 c.c.	107.5 c.c.
Specific gravity	1.004	1.011
Δ	-0.18° C.	-0.76° C.
Colour	Pale limpid.	Fairly coloured.
Urea	0.4 per cent.	1.3 per cent.
Uric acid	0.0067 "	0.0150 "
Chlorides as chlorides	0.6977 "	0.1112 "
Phosphates as P_2O_5	0.08 "	0.034 "
Methylene blue	No change in colour.	Appeared 1 hour 50 minutes, green colour, duration 18 hours.
Chromogen appeared	25 minutes, faint green.	25 minutes, deep green.
Phloridzin glycosuria	0.395 grammes.	1.623 grammes.

CRYOSCOPY OF THE TWO URINES.

Changes in the freezing point of the two urines are dependent upon a proportional increase or decrease of the molecular composition of the urine. In order to make observations of any value upon the cryoscopy of the urines a knowledge of the comparative volumes of the urines is necessary. Just as in estimating the total function of the kidneys the volume of urine and its molecular composition change under varying conditions during the day and night, so the composition of the single kidney urine will change, and an attempt to estimate the functional value of one kidney must be subject to similar restrictions. Thus it is necessary to collect the urines by catheters during 24 hours and to examine the mixed specimen, and, further, the observations should be repeated on several successive days. It is evident that such a method of examination is impracticable, so that observations must be made, if cryoscopy is to be used, upon a urine secreted during a much shorter period of time (two or three hours). The variations in healthy individuals, even with a careful control of the solid and fluid intake, are very considerable, and it appears to me to be doubtful whether any trustworthy data in regard to the function of one kidney can be obtained by this method.

Comparative cryoscopy of the two urines will, however, give some information in regard to the difference of function between the kidneys and, if it can be ascertained that one of them is healthy, this may act as a standard for comparison for the other. It must be remembered, however, that the function of the healthy kidney is likely to be depressed from the presence of its diseased neighbour. Usually there is a diminished quantity of urine with a reduced molecular content on the diseased side; occasionally there may be a polyuria with a proportionally greater reduction of molecules. The presence of polyuria or the reverse is not a measure of the functional activity of the kidney, and even where the quantity of urine is included in the formula the large variations are likely to prove a fallacy in the result of the calculation. It is important, also, to note that the healthy or almost healthy kidney may produce an increased quantity of urine. The result may be affected by these factors, so that even when the freezing point, corrected for volume, of the two sides is compared higher figures may be obtained on the diseased side.

When the volume of urine of one kidney is greater and the freezing point shows at the same time a greater molecular content this kidney is functionally more active than its neighbour.

In the lesser degrees of renal disease the cryoscopy figures are not usually altered, but where disease has destroyed a large part of a kidney there is usually a marked difference between the freezing points of the two urines. The variations in the point Δ of the two urines do not follow closely those of the quantity of urea, sodium chloride, and phosphates.

METHYLENE BLUE TEST FOR EACH KIDNEY.

In using methylene blue for the estimation of the function of each kidney it is obviously inadvisable to make observations for the 60 or more hours during which the blue may be expected to be present in the normal state, much less is it expedient to attempt the drainage of each kidney during the protracted elimination that may occur in disease. The accompanying chart (Fig. 18) shows the elimination of blue and chromogen in a case of hydro-nephrosis.

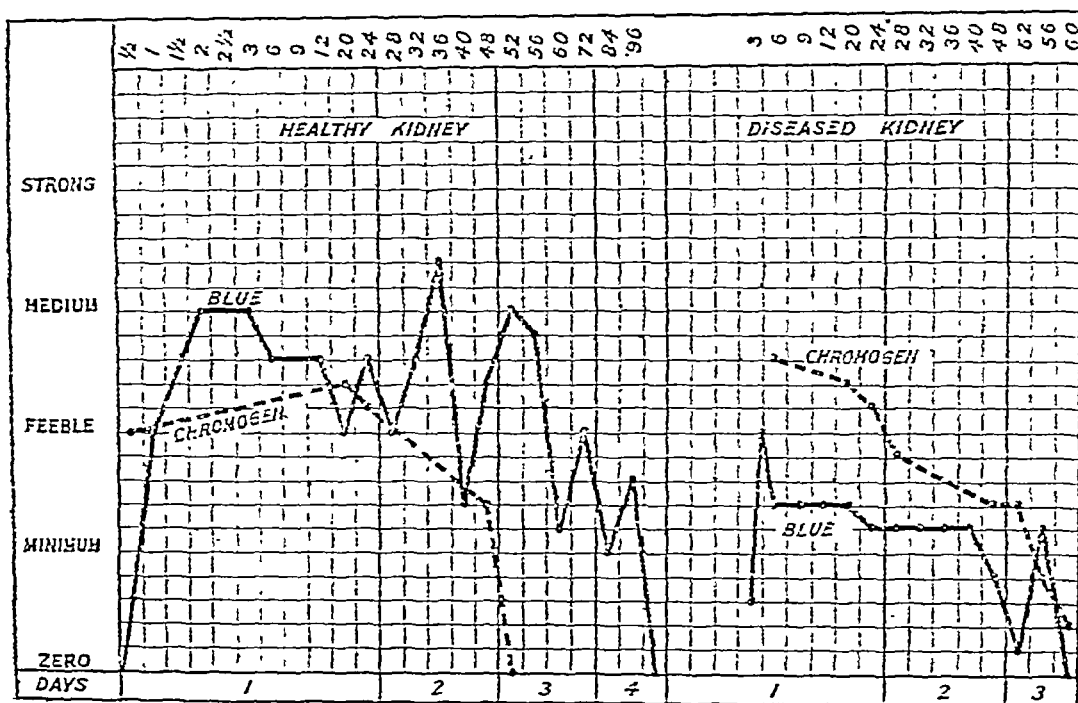
Two of the important points in the elimination of methylene blue by the kidneys may, however, be investigated with a comparatively short ureteral drainage. Observations may be made on the time of appearance of the blue and chromogen and the depth of staining of the secretion as a measure of the quantity of blue eliminated. For this purpose a catheterisation of an hour, or at most two hours, will suffice.

I have selected the following cases in illustration as they indicate the extent of the information that may be gained by this method and show how far the conclusions based upon it were justified.

CASE 1.—The patient was a man suffering from right-sided pyelitis of ten months' duration with an enlarged tender kidney. On the right (diseased) side methylene blue appeared in 60 minutes as a dirty green colouration and the microscope showed pus and renal cells and bacilli. The left ureter gave clear blue urine in 30 minutes which showed no deposit. After nephrotomy the symptoms subsided.

CASE 2.—The patient, aged 48 years, came under my observation at the North-West London Hospital. There was

FIG. 18.



Elimination of methylene blue and chromogen in a case of hydronephrosis. Delay and diminished quantity of blue and delay of chromogen on diseased side (Albarran).

a large, hard left kidney and the right kidney was not palpable or tender. The left (diseased) kidney excreted no methylene blue and no chromogen and the right urine was deeply stained with methylene blue and chromogen in 27 minutes. A large thin-walled pyonephrotic cyst containing masses of calculi was removed. The patient died with symptoms of septic absorption. The remaining kidney (right) was found to be healthy.

CASE 3.—In this case there was a large, hard, irregular calcareous mass in the right kidney and the left kidney was not palpable or tender. There were no symptoms of renal failure except constant thirst. No blue or chromogens appeared in the urine from either kidney. Operation was refused and the patient died from suppression of urine 18 months later. The left kidney was also destroyed by calculi.

CASE 4.—This was another case of calculous pyonephrosis. The right (diseased) kidney passed no blue but a small amount of chromogen appeared. The left kidney passed chromogen in quantity in 25 minutes and blue in 1 hour 50 minutes. The right kidney was found on operation to contain large calcareous masses with a thin covering of fibrous renal tissue. The patient made a good recovery.

An early onset of elimination and a good quantity of blue in the urine were accepted in my cases as a guarantee of the functional activity of the second kidney, whereas the absence of blue and chromogen in the urine of the second kidney was taken as an indication of an inefficient or destroyed kidney. Between the extremes of a well marked blue elimination and its complete absence from the urine of the second kidney there are varying degrees of elimination. In making observations upon such cases the methylene blue method suffers from the disadvantage of a long duration. The drainage of each ureter by catheter during a period of two or three days is impracticable as a routine measure.

Except in such pronounced results as those which I have related the method does not provide sufficiently definite information on which to base conclusions as to the total function of one kidney. But as a means of comparing the work of the two kidneys in a given time it has an undoubted value. If the function of the combined kidneys is estimated at a high value and the separation of the urines shows that the blue is secreted with little delay on either side and in about equal

quantity the active renal tissue is probably distributed pretty evenly between the two organs and is present in good quantity. If, on the other hand, the commencement of elimination is delayed and the total blue excreted is small in amount and by draining each kidney the proportion is found evenly distributed between the two, it would be inferred that a diminished amount of renal tissue was distributed equally between the two organs and for this reason nephrectomy might be contra indicated. When the difference between the two secretions is marked so that the supposed healthy kidney secretes much the greater quantity of methylene blue it will appear probable that the second kidney has already assumed a large part of the renal function and may be trusted to carry it on if the diseased organ is removed. This demonstration of the renal function will be the more striking if the diseased kidney eliminates no trace of blue or chromogen. On the other hand, it is certain that if the second kidney is the seat of latent disease which has hitherto passed unnoticed examination of the urine drawn by catheter from that ureter will give a clue to the presence of the disease which will be strengthened by the use of the methylene blue test. I have not observed as a frequent occurrence the intermittent elimination of methylene blue by the healthy second kidney which Albarran attributes to compensatory hypertrophy.

Before leaving this test an observation may be made in regard to the demonstration of the relief from the renal calculus. In a case of pyonephrosis nephrotomy was performed on August 16th, 1906 and the injection of methylene blue failed to colour the urine or to appear in the discharge from the wound. Chromogen appeared in the urine in one and a quarter hours. Nephrectomy was performed on August 29th and the methylene blue test was again carried out. The dye now appeared as a deep green and the chromogen as a blue-green in the urine in one and a half hours and one hour respectively. The patient made a good recovery. (Fig. 9, Lecture I.)

PHENOLDIN GLYCO-URIA TEST FOR EACH KIDNEY.

In healthy individuals the elimination of glucose by the two kidneys is equal and parallel. Variations in the work of the two organs occur, however, which may amount to from 10 to 20 per cent. I have observed a difference of 0.45 grammes between the amount eliminated by each kidney

(1.20 right and 1.65 left) in a healthy individual. Albarran gives the following results in four healthy individuals:—

Right kidney.				Left kidney.			
1.	0.88	gramme.	...	...	0.68	gramme.	...
2.	1.20	"	...	...	1.14	"	...
3.	1.66	"	...	...	1.21	"	...
4.	1.80	"	...	...	1.62	"	...

The elimination of sugar commences in a healthy kidney in the first half hour and most frequently the first appearance of it is observed in from 15 to 20 minutes after the injection. The kidneys commence simultaneously to eliminate the sugar and cease almost at the same time. Elimination continues about one and a half to two hours, but may be more prolonged.

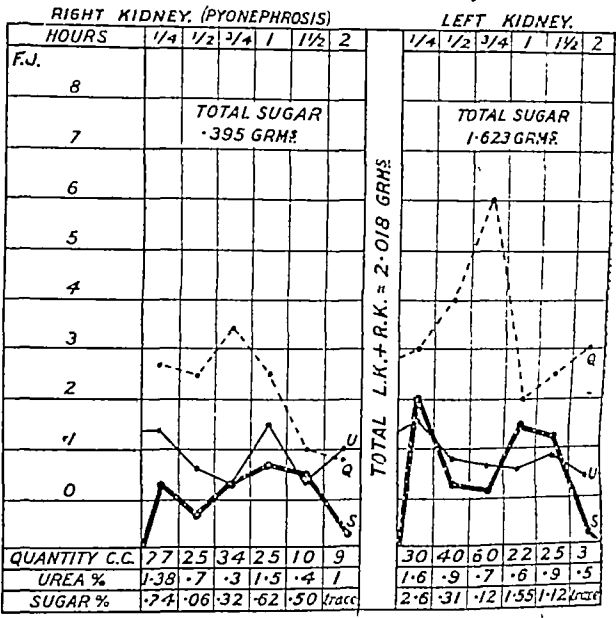
When one kidney is diseased there may be complete absence of sugar on that side, while the sugar eliminated by its healthy neighbour may represent the share normally taken by one kidney, leaving a reduction of the total sugar in the mixed urines; the total amount may not be reduced, since the healthy kidney may eliminate a quantity equal to two kidneys, or the second kidney may eliminate a diminished quantity of sugar, so that the total sugar is much reduced. Usually the quantity of sugar is diminished on the diseased side and normal on the healthy side. Rarely a hyperglycosuria may be observed on the diseased side.

The following case may be referred to fully, for it has points of interest in diagnosis as well as in the estimation of the renal function.

The patient, aged 54 years, was admitted to St. Peter's Hospital under my senior colleague, Mr. P. J. Freyer. In his absence it fell to me to examine the bladder with the cystoscope and he kindly permitted me to make further observations upon the patient in regard to his renal function. There was a history of frequent micturition during the day and night for months and scalding during the act. There had been difficult micturition and a poor stream for six weeks but never hæmaturia. The kidneys were not tender or painful and neither kidney could be felt under deep anaesthesia. Tubercle bacilli were detected in the urine. Vesical spasm rendered cystoscopy difficult. The bladder showed general sub-acute cystitis; the opening of the right ureter was far out on the side wall of the bladder; a thickened inter-ureteral bar led up and into a tunnel which represented the opening ("dragged-out" ureter). Palpation of the kidney on this side produced a powerful tug on this

muscular ridge. I catheterised the right ureter, drained the bladder, and injected five milligrammes of phloridzin. No sugar appeared in the urine collected from the right ureter and the urea varied from 0.8 to 1.0 per cent. The urine from the left kidney contained 0.296 gramme of sugar and the urea varied from 2.4 to 2.6 per cent. (Fig. 19). Mr. Freyer cut upon the right kidney and removed a large kidney containing masses of caseous material and a thickened ureter.

FIG. 20.



Large calculus pyonephrosis. Diminished elimination of sugar on diseased side.

Phloridzin failed to produce glycosuria on one side while it appeared in much reduced quantity on the other in two cases, where there was apparently insufficient cause. In one, a case of right-sided moveable kidney, the supposed healthy kidney eliminated no sugar while the moveable kidney produced only 0.037 gramme. In another, a very nervous man with attacks of left-sided renal colic and a history of hæmaturia, the painful kidney eliminated 0.46 gramme of sugar and the supposed healthy kidney none at all.

FIG. 19.

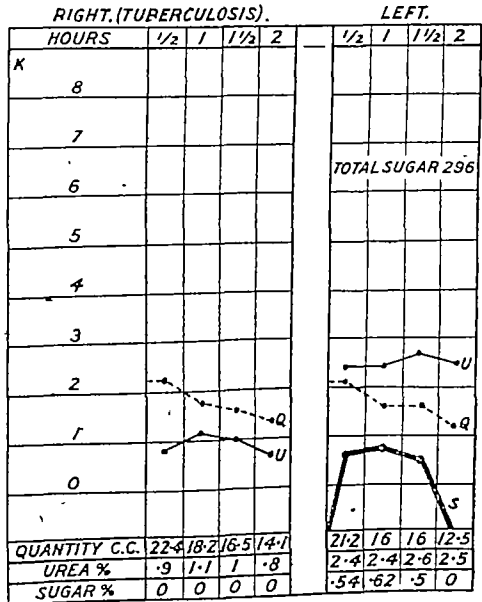
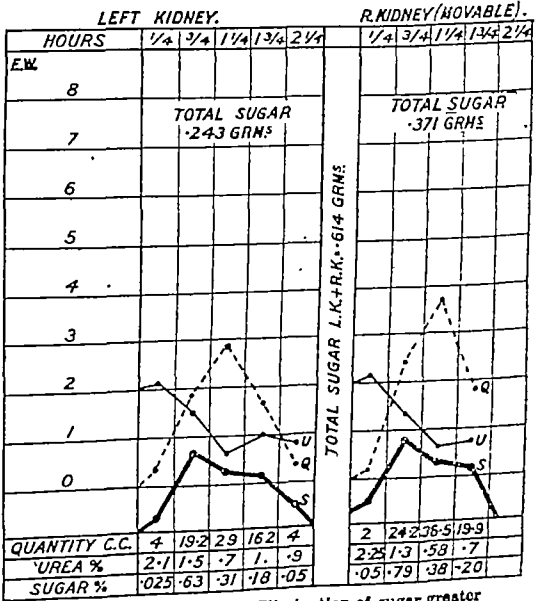


Chart of work of each kidney in case of advanced tuberculosis of right kidney. Absence of sugar on diseased side. Sugar indicated by thick continuous line, urea by thin continuous line, and quantity of urine by dotted line.

FIG. 21.



Case of moveable kidney. Elimination of sugar greater on diseased side.

The quantity of sugar eliminated on the diseased side was diminished while that from the healthy kidney was normal in a case of pyonephrosis containing large masses of calculi (0.335 gramme and 1.623 gramme) (Fig. 20). On the other hand, the elimination on the diseased side in a case of movable kidney was greater than that on the healthy side (Fig. 21), and in a case of stone in the renal pelvis there was a striking increase in the percentage of sugar in the urine on the diseased side over that present on the healthy side (Fig. 22).—In another case of renal pelvic calculus of small

for a shorter period of time. Frequently it is over in a quarter of an hour, sometimes in half an hour.

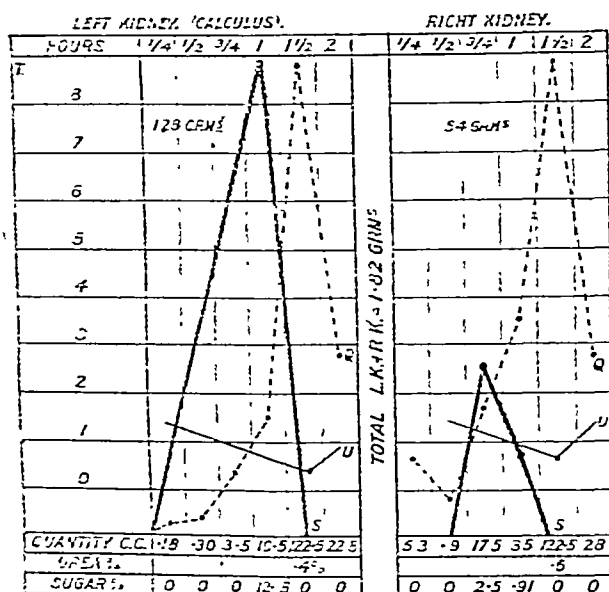
Clinical value of the test.—As a means of demonstrating the diseased side the phloridzin test is frequently more delicate than other methods. The fallacies which attend its use have already been noted. It must detract from the value of the test that cases have been observed when a diseased kidney eliminated a full quantity of sugar and a healthy (or supposed healthy) kidney passed none at all. A disadvantage of the phloridzin method is that it is very sensitive to slight changes in the kidneys and an exaggerated idea of the extent of the disease may be obtained by studying the glycosuria produced. Larger doses than those in use are more accurate, for there is less probability of a total absence of the glycosuria in slight lesions (Albarran). The cases in which these fallacies occur are exceptional and in the majority of cases in which I have used this method the result has proved reliable when tested by other methods or by operation. The short duration of the glycosuria is an undoubted advantage where the comparative work of the kidney is in question. I have seldom required to prolong the examination beyond two hours in order to complete the phloridzin test. Where the phloridzin test is combined with an artificial polyuria it forms, I believe, a valuable method of estimating the function of each kidney.

Albarran's experimental polyuria test.—Albarran has established two general rules:—1. A diseased kidney has a much more uniform function than a healthy kidney and its function varies less from one moment to another the more its parenchyma is destroyed. 2. When one kidney alone is diseased or is the more diseased of the two, if the urinary function becomes disturbed it modifies its function less than the other, and the difference between the two glands is especially exaggerated by the variations in the function of the healthy kidney. If instead of examining comparatively the total quantity of urine secreted by each kidney during a certain space of time a series of fractions of the same time are compared the course of the function of each kidney may be studied. Curves may thus be constructed for comparison of the work of the kidneys, and according to Albarran the differences between the two kidneys may be accentuated in making them perform during the examination a supplementary labour, such as the elimination of water or of phloridzin glucose. Albarran estimates the quantity of urine, the Δ and ΔV , urea per litre and in centigrammes, the sugar per litre and in centigrammes. In the normal state the curves of the two urines follow each other and present similar variations (see Fig. 21). In pathological conditions the differences in the curve of each gland are readily observed. The sound kidney should show a reaction after drinking Evian water (Fig. 20). The curve of the quantity of urine should be elevated at the same time that the Δ is lowered and the urea and chlorides per litre are diminished. These oscillations should be evident and affect several divisions. One may consider satisfactory the elimination, by one kidney in an adult man, of from 1.20 grammes to 1.80 grammes of urea during the two hours of the test. Below 75 centigrammes to one gramme may be regarded as a fault of excretion. The ΔV presents as great variation as the quantity of urea. In a man one may look upon from 12,000 to 17,000 as good, from 8000 to 10,000 as mediocre, and 6000 and below as an impaired excretion.

FALLACIES OF METHODS OF ASCERTAINING THE RENAL FUNCTION.

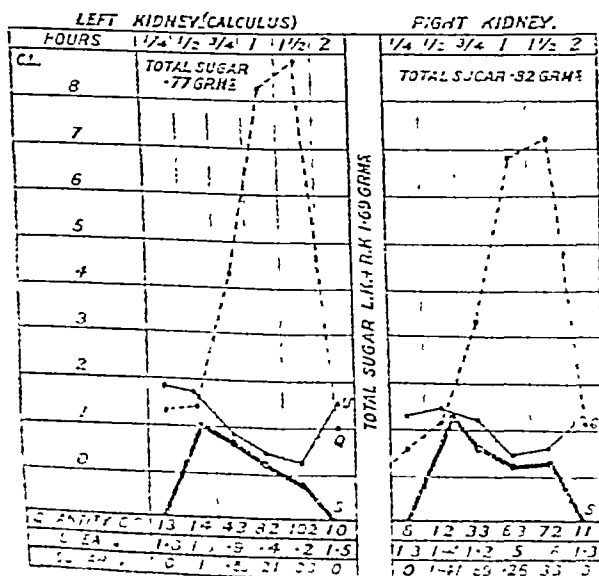
Throughout these tests there run some fallacies that lie beyond the question of a perfect or imperfect technique. One factor is the partial activity of the kidneys in health. The renal function is not in full action at any one time and under ordinary conditions. If proof is wanted of this it is to be found in the fact that if the urines of the two kidneys are collected separately and compared it will be found that the kidney is working more actively than the other, while at another time the kidney, which was less active, is working with greater energy, yet over a sufficient

FIG. 22.



Calculus in left renal pelvis. Normal glycosuria. Percentage of sugar excessive on diseased side.

FIG. 23.



Calculus of left renal pelvis. Elimination of sugar practically equal on two sides.

size the elimination of sugar on the two sides was practically equal (Fig. 23).

Where sugar is eliminated at all by a diseased kidney the commencement of the glycosuria is frequently delayed beyond half an hour. It is usual when a diminished quantity of sugar is eliminated by a kidney for the glycosuria to last

period the work of the two will be approximately equal. The renal output under any ordinary conditions does not therefore correspond to the full potential function of the kidneys and the activity will increase where greater demands are made upon it. What the safety margin of renal tissue may be, apart from hypertrophic changes, it is difficult to say. Certain it is, from the removal of mechanically injured kidneys in the human being where no opportunity for hypertrophy of the second kidney has occurred that the safety margin amounts to half of the total renal tissue.

Mr. Henry Morris records a case⁸ which has an important bearing upon this subject. In a woman, aged 20 years, whose right kidney had been removed by another surgeon for tuberculous disease four years previously, he excised a tuberculous nodule involving about one-third of the left kidney. Seven years later this remaining portion of the kidney was explored and a quantity of pus was evacuated. The patient died four and a half months later from acute tuberculosis of the lungs. "Only two-thirds of one kidney existed and this remaining piece was very extensively fibrosed, so that the actual amount of secreting tissue must have been very small indeed." It appears, therefore, that the amount of renal tissue necessary for the secretion of an adequate quantity of urine is less than half the total quantity. The experiments of Dr. J. Rose Bradford⁹ on animals have shown that two-thirds of the total kidney tissue may be removed and the animal remain in good health, but if the quantity of kidney tissue be reduced to one-quarter death occurs after an interval. It is this margin of safety that introduces a fallacy into the methods of estimating the renal function. A kidney disease may operate within this and give no sign of its incursions upon the potential renal function until an operation such as nephrectomy reveals the fact that the patient has been living upon the minimum of kidney tissue and even a very slight reduction of this or a temporary interference with its action is sufficient to overturn the balance and to produce suppression of urine.

Although it is apparently beyond the range of practical surgery at the present time to estimate the potential renal activity, yet some approach to it might, I think, be made by the coincident use of diuretic drugs with the artificial means of estimating the renal function.

Further, we cannot foretell how far hypertrophy will compensate for the reduction of kidney tissue. Tuffier¹⁰ has studied this question by experiments on animals and concludes that compensatory hypertrophy only takes place when the kidney is partly or wholly normal. If it is the seat of parenchymatous nephritis the hypertrophy fails. According to this observer the quantity of renal parenchyma necessary for life is equal to about a quarter of the weight of the entire kidney tissue. A portion of kidney tissue equal to this weight suffices to reconstruct (by compensatory hypertrophy) a quantity of parenchyma equal in weight to one entire kidney.

Another factor is the difficulty in distinguishing between temporary functional depression and permanent reduction of function. To take an example, the obstruction of an enlarged prostate causes a reduced renal function that is partly temporary and partly permanent, the former being due to existing obstruction and the latter to interstitial changes in the kidney brought about by the obstruction. The removal of the obstruction will in such a case be followed by improvement in the renal function which it is impossible to measure beforehand. Yet upon this improvement the progress of the patient may depend after he has survived the removal of the obstruction.

Again, in the case of kidney disease the function of the second kidney may suffer depression partly from changes in its substance and partly, or perhaps wholly, from the reflex influences passing from its diseased neighbour. The removal of the diseased kidney or the source of irritation in it may be followed by a striking improvement in the function of a healthy or slightly diseased second kidney.

In these lectures I have endeavoured, in however hurried imperfect a manner, to place before you some of the problems which are now within the reach of the surgeon in attempting to estimate the function of the kidney in surgical cases of these organs. And at the outset I pointed out some of the points which might be set upon the estimation of the function. It is no part of this work to suggest that

the presence of renal disease should form a barrier to operation upon the lower urinary tract nor to surgical interference in the kidneys. The estimation of the renal function in surgical diseases has for its object the recognition of these cases which are hopeless from the permanent inadequacy of the renal function and their exclusion from operation.

In conclusion I would tender to the Council of the College my grateful thanks for the honour which it has conferred upon me in selecting me to deliver these lectures, thus enabling me to participate in the annual festival by which the College commemorates the name of John Hunter.

CARCINOMA MAMMÆ IN THE MOUSE.*

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GENERAL SUPERINTENDENT OF RESEARCH AND DIRECTOR OF THE
LABORATORY OF THE IMPERIAL CANCER RESEARCH FUND;

AND

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ASSISTANT, IMPERIAL CANCER RESEARCH FUND.

FROM the outset of the investigations of the Imperial Cancer Research Fund, in October, 1902, every effort has been made to give effect to the desire of the executive committee to develop the experimental aspects of the study of cancer. In directing the attention of other investigators to the experimental study of cancer we pointed out that, in the first place, it was essential to be sure we were dealing with malignant new growths comparable to those of the human subject.¹ We have carefully satisfied ourselves of the carcinomatous nature of the growths on which our experimental observations have been based, but have purposely avoided burdening our papers with details of descriptive pathology.² We have been equally careful in regard to sarcomata and have even excluded growths which other observers have claimed we should have included—e.g., certain venereal tumours of dogs. As regards the latter, we may say at once that we believe the course of events during the past four years has justified our caution. The high degree of natural infectivity, the constancy of the site of occurrence—viz., the genital organs—and the ease of artificial infection of healthy animals, as well as the processes responsible for infection showed that those tumours differ from other sarcomata which they resemble histologically. We concluded that the tumours were an infective venereal disease of dogs, perhaps comparable to syphilis of man,³ or better to granuloma pudendi. Stoker,⁴ Ewing and Beebe,⁵ and others, have opposed this conclusion, but Apolant⁶ in the most recent paper from Ehrlich's Institute acknowledges its correctness practically in our own words,⁷ even to adopting the analogy with syphilis.

In some of our earlier papers we have devoted great attention to the artificial reproduction of the natural lesions of cancer in mice⁸ owing to its importance as a starting-point for experiments. Detailed attention has been given to the nature of transplantation, to the interchangeability of expansive and infiltrative growth, and to extension by the blood-vessels and lymphatics; in short, to the reproduction of all the features of the primary or sporadic tumours. Although the evidence thus advanced must appear convincing to all who have studied it in unbiassed fashion, the experimental study of cancer has been subjected to much criticism, both at home and abroad. It seems necessary to meet this criticism in the frankest manner. At home some of it has been deliberately designed to inspire distrust in the experimental study of cancer, and particularly in that aspect of the work of the Imperial Cancer Research Fund, the only institution avowedly engaged in its pursuit in this country.

In the present paper are described certain anatomical and pathological features of sporadic tumours of the mouse. Detailed descriptions of a large number of similar tumours will be given by Bowen, Haaland, and ourselves in the Third Scientific Report now in course of preparation. The anatomical distribution of the tumours will be shown to correspond to that of the mamma. The histological differentiation they present will be referred to the normal histology of this organ in the mouse. The local infiltrative extension of the growths at their

archives of the Middlesex Hospital, vol. vi., p. 1.
Proceedings of the Royal Society, London, 1892.
Expérimentales sur la Chirurgie du Rein, Paris, 1893.

* The superior figures occurring throughout the article refer to the bibliography at the end.

primary sites will be described. The formation of metastases by way of the blood and lymph streams will be clearly set forth. The evidence, added to what we have already published, leaves absolutely no reason to doubt that these tumours are epithelial new growths of the mouse, that they are malignant, and identical in nature with similar malignant new growths of the human subject. Therefore the results of experiments based on them must have direct importance with reference to the study of the disease in man, provided of course due caution be exercised when making comparisons between man on the one hand and the mouse on the other.

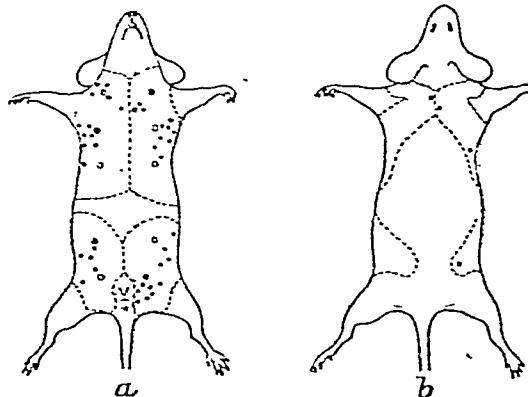
The development of the experimental study of cancer in the last four years has been achieved almost entirely as a result of the relative ease with which certain tumours of the mammary region of the mouse can be propagated artificially in normal animals of the same species. This line of inquiry has advanced rapidly. The new and interesting points of view opened up have engrossed those actively engaged in the work. They have proceeded to obtain new light on the nature of cancer, without engaging in the laborious task of convincing all and sundry of the soundness of the anatomical and histological basis of their investigations. The negative criticism to which experimental cancer research has been continuously subjected has repeatedly shifted its ground, while new facts coming to light have more and more fully justified confidence in experimental investigations.

The objections raised against regarding these tumours as mammary carcinomata are as various as the authors who have raised them; practically no two are agreed either on their actual features or on those of malignant growths in the human subject justifying the objections. They can be grouped in three classes. 1. The sporadic tumours in mice are stated to be not cancer at all. 2. The facts elicited in the course of their experimental propagation are stated to be so out of accord with clinical and pathological observations on the human subject as to have little or no value. We shall refer to the preceding objections in detail below. 3. The third class of objections can be summarily dismissed, since they are entirely misdirected. They pertain to matters of quite subsidiary importance, compared with the larger question of whether these tumours permit us to study any form of cancer experimentally. The resuscitation⁷ of the opinion of Eberth and Spude,⁸ now only maintained by Lazarus-Barlow, that such tumours are endotheliomata, is one example. Ribbert, while regarding them as epithelial tumours of the mamma, denies them malignancy⁹ in the sense that they present characters associating them with the malignant tumours of man, mainly, it would appear, because of the difficulties of harmonising the results of experiment with Ribbert's own hypothesis of the origin of cancer. Ribbert has overlooked the fact, that the transplantation of these growths affords the experimental demonstration of his contention, that malignant new growths grow from their own resources only. Others profess to see a quite usual phenomenon in the extraordinary powers of proliferation exhibited by a mouse tumour when artificially propagated,¹⁰ namely, "nothing more than a universal and long recognised capacity in cells." The normal tissues of a mouse, or any other vertebrate, are devoid of similar powers of proliferation. They present a contrast to cancer and cannot be transferred an infinite number of times from one animal to another with retention of undiminished powers of growth. Nor can the transplantation of cancer in the vertebrates be explained by an analogy with the propagation of the higher plants by means of grafts or cuttings. We have already considered this analogy, which so naturally suggests itself, and dismissed it.¹¹ Apart from its theoretical importance, the value of the artificial propagation of cancerous tissue rests on the fact that it affords opportunities for experimentally modifying the rate of cell growth and multiplication: in other words, for directly attacking that property of cancer by virtue of which it destroys human life.¹²

The objection that the tumours under discussion are not cancer can be dispelled by a knowledge of their pathology and of the normal anatomy and histology of the mouse's mamma in the immature condition, in rest, and in functional activity. The mamma in the mouse usually consists of five pairs of glands, occupying the sides and front of the body from the neck to the anus. In the shoulder region the gland-acini extend round the sides of the body in front of and behind the forelimbs, meeting dorsally in the middle line. In the inguinal region there is a similar extension along the crest of the ilium and on the inner

aspect of the thigh. The general distribution is shown in Fig. 1, in which the position of 42 spontaneous tumours is indicated also. In Figs. 5 and 6 the extensor level of the shoulder girdle is shown on the right side of the body, in transverse sections of a mouse.

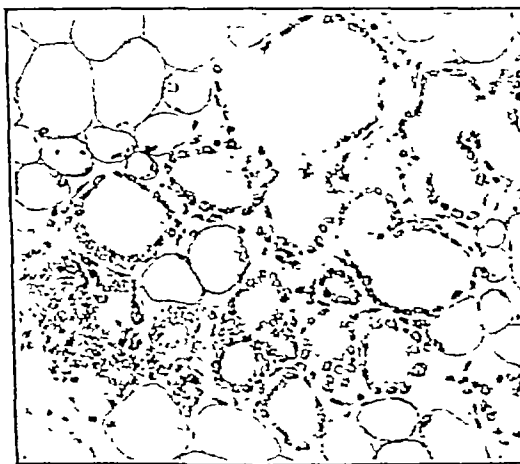
FIG. 1.



a, Ventral, and b, dorsal view of a mouse to show distribution of normal mammary (dotted lines, nipples = 0) and the position of 42 spontaneous mammary carcinomata of which three were in males.

a large carcinoma in the left axilla. It is evident that the tumours with which we are concerned correspond in their distribution to the normal mamma. The cervical region, the axilla, the nape of the neck, the inguinal region, and the vulva are all frequent sites. This distribution, as already pointed out by Apolant¹³ and ourselves, indicates the mamma as the tissue of origin. A fully developed gland in a state of rest (when the animal is not suckling), consists of delicate branching acini lined by cubical epithelium (Fig. 2) and lying in

FIG. 2.

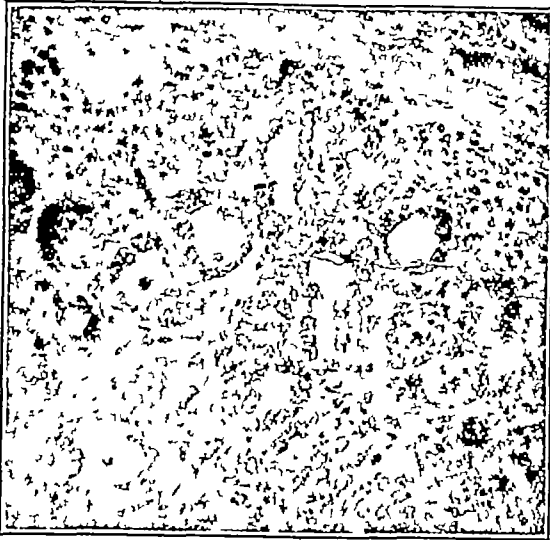


Normal adult mamma. The mouse had born young but was not suckling. Shows variability of lining epithelium from cubical to flattened cells, according to the degree of distension of acini by secretion.

areolar and fatty tissue subjacent to the panniculus carnicus, which, in the mouse, forms an almost complete sheath to the body. During active secretion the acini become dilated and form branching sinuses. The lining epithelium frequently becomes stretched till it resembles a pavement epithelium or endothelium. Fig. 3 illustrates the gland characters of an adeno-carcinoma and that its relation to the panniculus carnicus corresponds to that of the mamma. The new-born female the gland is much less extensive, forming a few branching columns of cells in the vicinity of the nipples. The acini are usually solid, although lumina may be recognised in places. For the most part, the pos-

of the future lumen is merely indicated by the recession of the closely packed nuclei from the central part of the cellular strand (Fig. 4). Cell division is frequent at this period. The gland is growing rapidly. The cells are small, and it is often difficult to say whether an individual nucleus at the surface belongs to the gland parenchyma or to the connective tissue. The tumours first appear as roughly spherical swellings usually placed asymmetrically with reference to the nipple as in the human subject. The small

FIG. 3.



Adeno carcinoma mamma showing many small acini, like those of normal mamma. Figs 2 and 3 same magnification. Note fibres of panniculus carnosus at upper part of the figure.

FIG. 4.



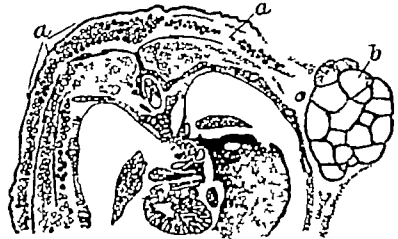
Mammary foundation of new born female mouse. Alveolar arrangement of cells in strands subjacent to panniculus carnosus

size of the mouse, and the looseness of its integuments often permit this shape to be retained till the increase in size is incompatible with existence, there being a limit to the amount of tissue which the animal can support. The looseness and elasticity of the skin may permit growth to proceed without invasion of the chest wall in tumours in the axillary region, although the lungs may be almost completely replaced by metastatic growths. Lymphatic glands in the neighbourhood may also present secondary deposits, as in Figs. 7, 9, and 11. These mammary growths frequently appear, on removal of the skin, to be encapsuled completely by a fibrous layer of varying thickness. This "capsule," however, is usually invaded by strands and columns of tumour cells, as in the accompanying figure (Fig. 8). The complete surgical

removal of the tumours can be effected only by removing the capsule and surrounding tissues and not by shelling the tumour out of its "capsule" after incision.

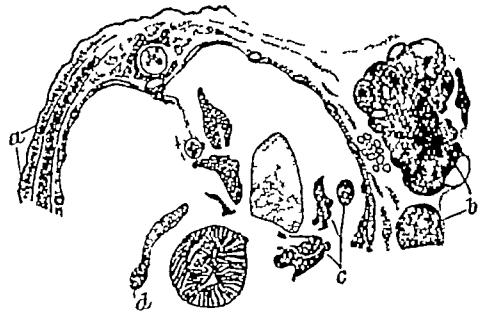
When a growth arises in the limited space between the thigh and the pelvic outlet it soon fills up all the available room and then its further extension takes place

FIG. 5.



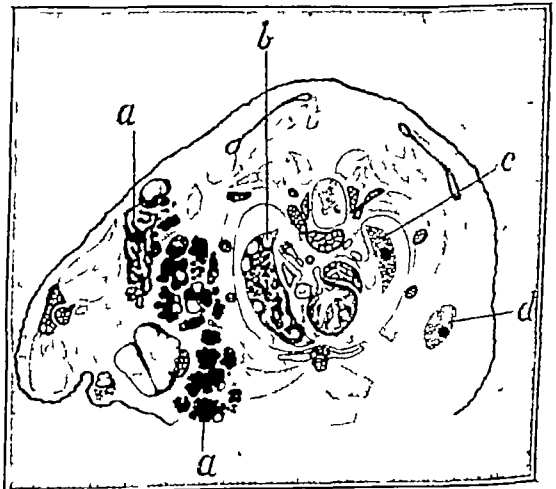
Transverse section of a mouse with spontaneous carcinoma mamma (19). a, Hypertrophied normal mamma (lactation). b, Cystic mamma anterior to growth. c, Mass of growth replacing left lung, lower lobe.

FIG. 6.



Transverse section of same mouse through growth at level of diaphragm. a, Normal mamma. b, Growth. c, Posterior end of growth in left lung. d, Metastasis in right lung, upper lobe.

FIG. 7.

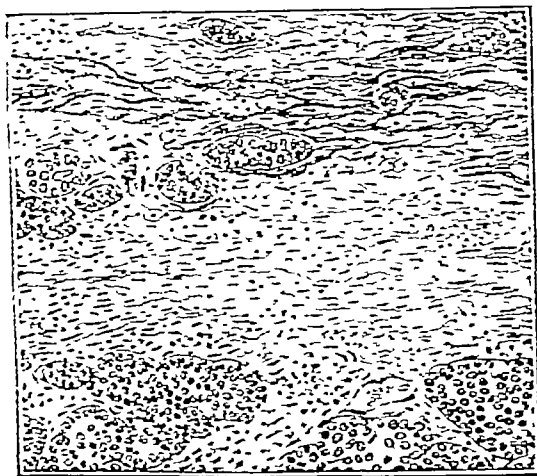


Transverse section of a mouse with spontaneous carcinoma mamma (25). a, Primary growth in right axilla. b, Right lung replaced by growth. c, Small metastasis in upper lobe of left lung. d, Lymphatic gland of opposite side with small metastasis

in an infiltrative manner, as in the case represented in Figs. 9 and 10. The thigh on the affected side is seen to be twice as thick as that on the healthy side, due to the intercalation of the growth between the muscles. Fig 10 represents in silhouette the manner in which the growth penetrates between the muscles. The

muscle fibres disappear from between the alveoli of the tumour parenchyma, apparently by pressure atrophy; there is nothing to indicate a digestive action of the tumour on the surrounding structures any more than in the new growths of man. In this case there is also extensive infiltration of the connective tissue between the vagina and rectum. After death this mouse presented large metastases in the lungs

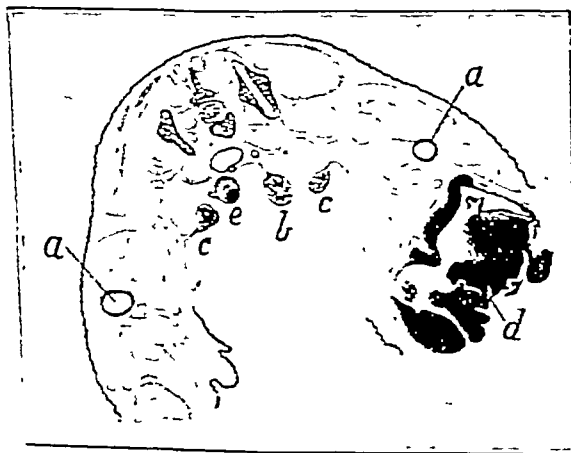
FIG. 8.



Section through "capsule" of a spontaneous carcinoma mammary of the mouse, alveolar form. Shows infiltration of the apparent capsule by strands of tumour parenchyma.

and, in addition, in the aortic lymphatic glands, as indicated in the section of the whole mouse (Fig. 9) and for a lymph gland alone, under a higher magnification, in Fig. 11. The asymmetrical position of the tumour nodule and the displacement of the lymphatic tissue to form a crescentic margin indicate that growth has commenced in the marginal sinus of the gland as in lymphatic metastasis in the human

FIG. 9.



Transverse section of a mouse with spontaneous carcinoma mammary (a) of the inguinal region. b, femur; c, rectum; d, location of primary growth into muscles of thigh; e, aortic lymphatic gland with metastases. See p. 12.

subject. These illustrations show that we are dealing with new growths of the mammary region of the mouse, which grow freely fully (new after incomplete removal), infiltrate the surrounding normal tissues, and produce metastases of the same histological type in the lungs and lymphatic glands. They lead to the death of the animal. Its conclusion is inevitable that they are malignant new growths of the mamma.

We now approach the subsidiary question: Do tumours arise from the epithelium of the acini of the mammary gland (adenoma, carcinoma), from the endothelium of blood or lymph-vessels (endothelioma) or from the connective tissue (sarcoma)? There are no other possibilities. The third mode of origin may be discarded at once. The tumour is not sarcomatous. A conclusion as to the histogenesis of the tumour is a reasoned judgment based on a knowledge of histological differentiation of the tumour parenchyma of the normal tissue implicated, in the various stages of growth and functional activity. The actual connexion

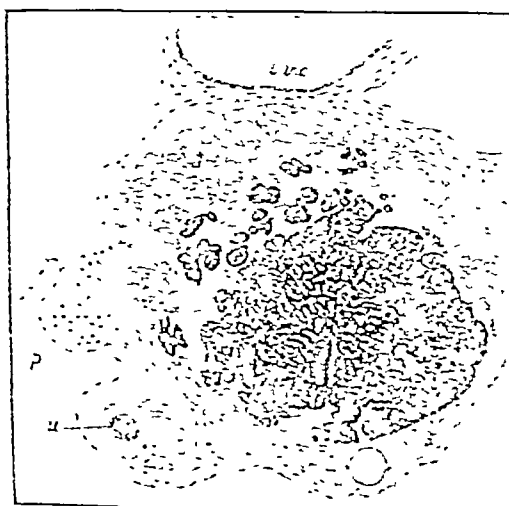
FIG. 10.



Silhouette of margin of growth where invading the muscles of the thigh.

the tumour with its parent tissue is very rarely seen an conclusion is adopted which harmonises most naturally these two sets of facts—the normal histology, on the one hand, and the tumour histology on the other. Bearing in mind, it is easy to show that these mammary tumours of the mouse present a graduated series, from growths of small acini, indistinguishable from those of the resting mamma, through others, in which the acini dilated into cystic spaces, reproducing in an exaggerated form the puerperal condition, to alveolar growths, but

FIG. 11.



Aortic lymphatic gland with metastases from same case. a, inguinal region; b, femur; c, rectum; d, location of primary growth into muscles of thigh; e, aortic lymphatic gland with metastases. See p. 12.

the plan of the rapidly growing mammary foundation of a new-born mouse. We do not regard this similar alveolar carcinoma as immature normal mamma as but a return to an embryonic condition, but merely as that an epithelium which will certainly differentiate into a mass of acini lined by one layer of cubical cells through a growth-form in which many layers of c

columns of cells predominate. Therefore the presence of similarly constituted alveoli in a tumour does not preclude that they have arisen from simple acini lined with one layer of cells. These tumours present us with every imaginable intermediate stage from pure adenoma to alveolar carcinoma, and our classification must recognise the continuity of this series of histological appearances. Adenomatous and solid alveolar portions are frequently encountered in the same growth. The situations in which they occur indicate clearly, in many instances, a mechanical influence as determining the histological appearances. The transplantability of many of these tumours gives further opportunities for determining the share of mechanical conditions in modifying the histology. With the development of this line of inquiry we shall soon see that, instead of attempting to classify mouse tumours in accordance with human histology, the results of experiment will force us to modify the rigidity of the classification now in vogue. The clinical, pathological, and cytological distinctions which even to-day it is sought to draw between benign and malignant growths break down entirely in the face of the facts revealed by the comparative and experimental study of cancer. It is becoming more and more certain that the explanation of growths in the one class will also elucidate the nature of those in the other.

Our knowledge of cancer in mice is by no means limited to carcinoma mammae as seems to be generally believed. We have described and figured an adeno-carcinoma of the duodenum,⁶ and a similar case has been described by Bulloch and Twort¹⁴ in which extensive secondary growths were present in the liver. We have also described a case in which the histological appearances were those of the pancreas.⁶ In yet another case Jensen found a large growth surrounding the kidney in a mouse which we had sent to him: it had the structure of a spindle-celled sarcoma. Haaland has described¹⁵ a number of malignant growths in mice observed in Borrel's laboratory, and we have already reproduced a figure¹⁶ of one of several cases of squamous-celled carcinoma of the floor of the mouth described by him. The carcinomatous ulcer in that case reproduced the appearances in the same site in the human subject very closely. The secondary growths in the marginal sinus of the submaxillary lymphatic gland are typical. The invasion and destruction of the ramus of the lower jaw complete the clinical and pathological picture in this most interesting case. Haaland has also published¹⁷ preliminary accounts of multiple enchondromata, of chondro-sarcoma, and of squamous epithelioma of the vulva. The typical features of the last case entirely dispose of the doubts expressed by Erdheim¹⁸ in regard to a similar growth. Haaland will describe these cases in more detail in a future communication. We cannot refrain from referring to Ehrlich's¹² important material, which includes not only very numerous mammary growths, but also chondroma and spindle-celled sarcoma. In the papers published by the many investigators who have large personal experience of cancer in mice there is not one discordant note. Michaelis has authorised us to state that he is wrongly quoted¹⁰ as holding that the growths in mice are not cancer.

The criticism that the facts elicited by the experimental study of cancer are out of accord with clinical and pathological observations on the human subject, has done duty repeatedly with reference to other diseases. It has been brought forward whenever the first fruits of experimental investigations have clashed with empirical conceptions—clinical or pathological. It is matter of history that it was used with effect on Villemin's early experiments on the infective nature of tubercle and applied also to Koch's monumental research in which he finally demonstrated the cause of the infection. The same battle had to be fought in the case of diphtheria. This form of criticism is to be welcomed, for on the whole it has a salutary influence, although its volume in the past has often been only an indication of the number of those who were unable to grasp novel conceptions or unwilling to appreciate their value.

It is not surprising that we should find this criticism applied to refer briefly to certain specific objections. It was pointed out over 40 years ago, on the basis of the results gained in the performance of 2000 necropsies at the Royal College of Surgeons, that "the cachectic condition spoken of in cancer is not present at all, and depends, as we have seen, upon accidental circumstances." Sir Samuel Wilks¹⁹ has applied equally to mice suffering from

cancer, either natural or induced. If we interpret recent surgical papers correctly, e.g., those by Mr. G. L. Cheate,²⁰ our opinions coincide with his in this matter. The spontaneous disappearance of tumours in the human subject in its relation to the similar phenomenon in mice after successful inoculation was first referred to by us in the course of a discussion at the Medical Society of London in March, 1905.²¹ At that meeting Mr. J. Langton and Mr. H. J. Waring recorded their personal experience of its occurrence and other surgeons have done so since. A most interesting case has been recorded quite recently by Mr. W. Bruce Clarke.²² With Cramer we have fully described the nature of the process in mice and pointed out its identity with what Orth²³ had described for epithelioma of the human tongue. In regard to mice with inoculated tumours, the importance of the phenomenon has also been emphasised independently by Clowes.²⁴ Clowes and Gaylord²⁵ tabulated the recorded cases in the human subject and confirmed our description and figures in the case of mice. Those objecting that its relative frequency shows cancer in mice is not comparable with cancer in man have entirely overlooked the fact of our statements referring to cancer when transplanted in normal animals rather than to sporadic growths in the animals spontaneously attacked. The great importance of this phenomenon cannot be denied. Its apparent novelty has, perhaps, much to do with the incredulity with which our statements have been received. In the human subject, in chorion epithelioma, spontaneous healing of the secondary growths presents the closest parallel to its occurrence in experimental cancer. In chorion epithelioma we have a form of cancer which is naturally transferred from one individual to another by transplantation—viz., from the cancerous chorion to the healthy mother. The frequency of the spontaneous healing of the secondary growths thus occurring in the mother is a matter of common knowledge among pathologists. Mr. Pearce Gould has drawn attention to spontaneous healing of cancer of the human breast and of the secondary nodules in melanotic sarcoma. Mr. W. S. Handley has emphasised the significance of the phenomenon. On the one hand, the human organism is able to protect itself against malignant growths, at least occasionally, and perhaps more frequently than we are yet aware of. On the other hand, mice inoculated with cancer are very frequently able so to protect themselves in certain favourable circumstances.

As regards statements which have been made about the frequency of infection in mice, we have discussed this subject so often that we can dismiss it by reiteration of the facts. We have taken every care to show how absolutely distinct from all known processes of infection is the artificial transference of the disease. The establishment of this distinction by Jensen²⁷ and by us^{1,2} is one of the salient results of the experimental study of cancer. We have observed the effects of inoculating 60,000 mice with carcinomata. The animals have been kept under painstaking observation. The development of tumours that could be referred to infection or contagion has been observed in not one single instance. Ehrlich¹² has performed a somewhat smaller number of inoculations but has employed a greater number of sporadic growths. His experience agrees with ours. The housing of mice suffering naturally from cancer with normal animals has yielded no evidence of infection or epidemics, although our observations have now been extended over a longer period than any previous investigation and much longer than a mouse lives. The spontaneous appearance of tumours in our own and other experiments is to be explained in an entirely different way. The positive statements made in regard to infection when small animals suffering from cancer are housed with normal animals can be referred with confidence to (1) fallacious observations; (2) erroneous deductions as we have already pointed out²⁸ (Moran,²⁹ Gaylord³⁰); and (3) unwarranted assertions by those without personal experience. In our experiments mice have developed cancer spontaneously, though not by infection. We shall have occasion to revert to this topic. We shall show also how large an allowance must be made when large numbers of small animals are kept under careful observation, since the relative number of cases of cancer developing then more nearly approximates to the absolute incidence of the disease in animals alive in the later adult and old-age periods of life. The very positive statements about infection in the case of mice are at present devoid of all scientific value.

We are unable to comprehend why there should be a feeling that there is something mutually exclusive in the

clinical, pathological, comparative, and experimental methods of investigating cancer. They are really complementary to one another and those who have studied the publications of the Imperial Cancer Research Fund must have perceived that every effort has been made to give each line of inquiry its due importance, and to coördinate them as the respective parts of one extensive investigation. The purely clinical and pathological aspects of cancer have received a large share of attention. The statistical investigations of the Imperial Cancer Research Fund are based on the most numerous and reliable clinical and pathological data yet tabulated. In certain investigations on the earliest stages of squamous-celled carcinoma of the tongue, the ripe clinical experience of Mr. H. T. Butlin was supplemented by experience of a different kind, gained in purely pathological and experimental studies on human and animal material, with most important clinical results.¹⁴

We beg leave to conclude that the comparative, the biological, and the experimental investigation of cancer is based not only on sound foundations, but that it is advancing our knowledge²¹ of the disease more rapidly than any other line of inquiry at the present time.

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ON OPSONINS AND IMMUNITY.¹

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It has for long been a matter of uncertainty to which of the constituents of the blood its germicidal properties are due. That such properties exist is, of course, undoubted, and some of the earliest experiments on the subject showed that bacteria when injected into the blood stream rapidly disappear. It was shown later that defibrinated blood could destroy various kinds of micro-organisms, although after a time this same blood lost its germicidal properties and became an excellent medium on which the bacteria could grow. The germicidal powers of fresh blood must, of course, depend either on some substance contained in the serum or in the corpuscles, or on some actively destructive action of the latter. The white corpuscles, or phagocytes,

have been shown to possess the power of taking up and digesting bacteria, probably by the aid of some intracellular ferment, and the method of which I am speaking—the opsonic method—depends on our ability to estimate the relative capabilities of the phagocytes to take up bacteria (known as phagocytosis) when incubated with and acted on by different blood sera.

Phagocytes are either of the macrophage—i.e., fixed—variety, consisting of endothelial cells, some connective tissue cells, and some cells of the spleen pulp and bone marrow, or of the motile variety, which includes most of the polynuclear and mononuclear leucocytes. When micro-organisms are introduced into the body the phagocytes, both fixed and motile, seize upon the intruders and by means of their pseudopodia absorb them into their interior and digest them. Where the phagocytes are naturally absent or scanty, as in the anterior chamber of the eye and cornea, the invading micro-organisms stimulate the animal's protective mechanism to hurry forward an army of defending phagocytes of the motile kind which give immediate battle to the intruders. This attraction of the phagocytes is due to what is known as positive chemiotaxis, and is most marked in those cases where the natural immunity is greatest—indeed, the greater the natural immunity of the organism to infection the greater is the positive chemiotaxis. When the bacteria have been taken up into the phagocyte they are either digested by some ferment action or destroyed by some chemical poison possibly related to nucleic acid, but this action is not immediate and the bacteria are not instantly killed. This is shown by injecting into an animal phagocytes containing bacteria, and it is found that by doing this we can induce infection in the susceptible animal. If the bacteria are very virulent and the phagocytes are placed under disadvantageous conditions the bacteria may get the better of the phagocytes and kill them, or, if spores have been taken up by the phagocyte, these may develop within the phagocyte into bacteria and destroy the phagocyte.

The influx of these white corpuscles, or phagocytes, to an infected area means that the organism is resisting the invading forces which threaten disease. The phagocytes are aided in their struggle by poisonous substances circulating in the fluids of the body, secreted possibly by the white corpuscles, which act upon the bacteria in such a way as to prepare them for digestion by the phagocytes. These bacteriotropic substances, or opsonins, make ready or prepare the bacteria for the further action of the phagocytes. The word "opsonin" is derived from *ὀψωνίω*, meaning "I cater for." That opsonins have this action is proved by the following experiment of Wright and Douglas. Two tubes are incubated for a quarter of an hour at 37° C., the one containing three volumes of normal serum *plus* one volume of staphylococcus emulsion (previously heated to 75° C. and cooled), the other containing three volumes of serum which had been heated to 60° C. *plus* one volume of staphylococcus emulsion (previously heated to 75° C. and cooled). On removal from the incubator the first tube (containing normal serum) is heated to 60° C. and cooled. The contents of each tube are then added to three volumes of white blood corpuscles and the number of staphylococci taken up per phagocyte is counted. It is found that the number of staphylococci taken up in the second case is only one-seventh as compared to that taken up in the first case: in other words, the opsonin acts directly on the bacterium.

The opsonic index of a patient to any one micro-organism is simply the expression of the relative power of the patient's opsonins to influence the taking up of the micro-organism by phagocytes, as compared to that of a healthy individual. For instance, 50 phagocytes can when incubated with a tuberculous patient's serum take up 100 tubercle bacilli, while 50 of the same strain of phagocytes when incubated with the serum of a healthy person take up 150 bacilli in the same time. The patient's opsonic index is then the ratio of 100 to 150, or $\frac{2}{3}$, or 0.6.

The actual estimation of the opsonic index can only be carried out in a laboratory, but all that the physician in charge of a case has to do is to fill a specially prepared tube with blood and forward it to the bacteriologist and in 24 hours he can be advised what the patient's opsonic index is and what dose of vaccine should be administered. The method of estimation is as follows:—

(c) Two specimens of blood are obtained (by pricking the finger and allowing the blood to flow into a glass tube), one from the patient and one from a healthy person. These

¹ In part a lecture delivered at University College, London, on Feb. 25th, 1907.

tubes are sealed up by placing the ends of the tubes in a flame and the blood is allowed to clot, forming a clear layer of serum.

(b) 0.5 cubic centimetre of blood is drawn from the finger into a tube containing 10 cubic centimetres of sterile 1.5 per cent. sodium citrate solution and shaken up. Sodium citrate combines with the calcium salts of the freshly shed blood and prevents clotting. The tube is placed in the centrifugal machine for five minutes until the corpuscles have sunk to the bottom and the fluid is pipetted off. 10 cubic centimetres of normal saline solution are placed in the tube and the tube is shaken to wash the corpuscles and then replaced in the centrifugal machine for five minutes. This is repeated twice again and the fluid above the corpuscles is finally removed. A layer of white corpuscles free from serum is now available.

(c) An emulsion of the bacterium in salt solution (1.5 per cent.) is made by pouring the latter over a 24 hours' growth on agar and shaking. The fluid is removed and centrifuged until the right density of emulsion is obtained.

The two specimens of serum, the washed phagocytes and the emulsion of bacteria, are now ready for use and are labelled and placed in a rack or vessel containing wet sand. Two sterile capillary pipettes fitted with rubber nipples are marked at a distance of one centimetre from the end with a blue pencil, and into each are drawn up the following fluids. Into the first, equal volumes of healthy serum, washed blood cells, and bacterial emulsion. Into the second, equal volumes of patient's serum, washed blood cells, and bacterial emulsion. The contents of each pipette are thoroughly mixed and drawn up again into the respective pipettes. The two pipettes are sealed at the capillary ends and both are placed in an incubator at blood heat for 15 minutes. Of course, if the sera of more patients have to be examined at the same time similar pipettes, each containing one patient's serum, washed blood cells, and bacterial emulsion, are placed in the incubator also for 15 minutes and examined against the control. At the end of 15 minutes the two pipettes are taken out of the incubator; a blood film is prepared from each, stained by Leishman's method, and examined under a $\frac{1}{4}$ -inch oil immersion lens, using a mechanical stage. The number of bacteria contained in 50 polymorphonuclear cells is counted in each case, and since normal serum is taken as having an opsonic index of unity, the number of bacteria contained in 50 cells on the patient's slide, divided by the number in 50 cells on the control slide, gives the opsonic index of the patient.

Fallacies may, of course, occur in the hands of inexperienced workers, especially if the tubes be incubated for different periods, or the serum be heated, or the films imperfectly prepared, or the volumes incorrectly measured. But by practice a wonderful degree of accuracy can be attained.

Having determined the patient's opsonic index we have now to see whether we can raise it, if low, by the employment of bacterial vaccines. It is well known that many living organisms produce, during their growth, substances inimical to themselves. For instance, yeast grown on grape sugar produces alcohol, and this alcohol finally stops the growth of the yeast. Many bacteria in the same way produce during their growth substances (antibodies) which are injurious to themselves. Tuberculin contains such antibodies and is hence employed in tuberculous lesions, but in the old days much too large doses were employed and there was no method of checking its effects. Now, very small doses are given and we can tell with great accuracy what the results of each dose are. Nevertheless, tuberculin treatment must still be combined with other methods, and only under such conditions can bacterial vaccines be expected to give the best results.

The employment of sterilised bacterial cultures in the treatment of disease is based essentially on the assumption that by this means we can increase the germicidal substances of the fluids of the body and bring about a more or less marked artificial immunity. It is well known that immunity to snake poison can be induced by giving repeated small non-fatal doses of the toxin. 20 years ago it was shown that pigeons could by this means be made immune to the poison of the rattlesnake. This acquired immunity is, of course, to be distinguished from both natural and inherited immunity and may be either active or passive. Active immunity is brought about in the body of the animal as a result of the stimulus produced by the injection of bacterial cultures; passive immunity is the result of directly injecting

substances which can combine with and neutralise toxic bodies in the infected organism. Thus, in the case of diphtheria, active immunity can be produced in the horse by the injection of gradually increased doses of diphtheria toxin until its serum contains a considerable quantity of diphtheria antitoxin. This serum when injected into a patient suffering from diphtheria can neutralise a certain proportion of the toxin by virtue of the antitoxin which it contains, and so prevent some of the pathological changes in the patient's cells which would otherwise be brought about by the diphtheria toxin. By the injection of such antitoxin passive immunity is said to be produced in the patient.

Natural immunity to poisonous substances is possessed in various degrees by different animals. Thus large quantities of antimony and arsenic can be consumed by pigs without ill-effects, and the vapour of formalin, which is, of course, a strong antiseptic, is not only without effect on certain insects but they actually appear to thrive on it. Typhoid fever, so fatal to man, cannot be induced in the lower animals by inoculation with the typhoid bacillus, nor does the disease occur naturally in them, any more than do measles, scarlet fever, and leprosy. On the other hand, certain species of animals are susceptible to anthrax, such as sheep and cattle, whereas many other of the lower animals are quite insusceptible to the disease. But although some animals are immune to certain diseases and cannot be inoculated with the micro-organisms which produce these diseases, they are, nevertheless, susceptible to doses of the toxin produced by these micro-organisms and injection of typhoid toxin is fatal to many of the lower animals which cannot contract the disease. The toxin of cholera is harmless to the larva of a certain beetle, and if the same dose of cholera toxin is given to one of these and also to a small frog of equal weight the latter dies while the former is unaffected. If, however, the two are inoculated with the bacillus of cholera the frog escapes but the beetle dies. It is evident that this may apparently be explained on the assumption that the leucocytes of the beetle are able to get the better of the cholera toxin but not of the bacilli, and *vice versa* in the case of the frog, but what is not so easy to explain is why the beetle is unaffected by the cholera toxin introduced from outside, while it succumbs to that manufactured in its own body.

The mode of entry is often of the greatest importance in the future development of an invading organism. Thus the organism of Asiatic cholera is extremely fatal when taken into the alimentary canal, although it is almost harmless when injected subcutaneously. Tetanus bacilli and anthrax bacilli, however, when injected subcutaneously are very fatal, but if taken into the healthy alimentary canal they are practically harmless. The bacillus coli is normally found in the human intestinal canal and under such conditions produces no ill-effects because its toxic material is locked up inside the cell, but if the bacillus escapes into some position where by phagocytic or other action its intracellular toxin is set free pathological effects are speedily produced. The mode of entry of the tubercle bacillus and the nature of the bacillus which can cause tuberculous lesions in the human being are subjects which have been dealt with at length by the recent Royal Commission, and we are only concerned here with methods which can arrest the progress of disease in an already infected organism.

An increase of the opsonic content of the blood in disease is brought about by the injection of the appropriate vaccine—e.g., of tuberculin in tuberculosis, of staphylococci in boils and acne, and of gonococci in gonorrhoea. When possible the micro-organism should be grown directly from the patient's lesion and a small quantity of the pure culture, whether staphylococcus, tubercle bacillus, or other organism, triturated with normal saline solution to which $\frac{1}{4}$ per cent. lysol is added. The mixture is heated to 60°C. for an hour in order to kill the bacteria and make the vaccine sterile. The number of bacteria in a given volume is now calculated by mixing one volume with an equal volume of blood and two volumes salt solution and counting the relative number of bacteria and red corpuscles. It is known that normal blood contains about 5,000,000 red cells per cubic millimetre and the number of bacteria per cubic millimetre is therefore readily calculated and a vaccine of the required strength is easily prepared by dilution. An initial dose of 300,000,000 staphylococci, or $\frac{1}{10}$ milligramme of tuberculin, is given with a sterile hypodermic syringe subcutaneously. The injection should cause no rise of temperature and no general or appreciable local reaction. The amount of the dose given

at subsequent injections and the intervals between the doses must depend on the influence produced by the preceding dose on the opsonic index.

If the right dose has been given a short negative phase will be followed by a well-marked positive phase, during which the anti-bacterial power of the blood is increased and the resistance of the patient to the disease increased. After tubercle inoculations this improved power of resistance may be maintained for several weeks, but, as a rule, it falls back again after ten days or a fortnight, and a further dose of the vaccine is necessary. Only the minimal dose must be employed which will produce a satisfactory response and this must not be increased until it ceases to produce its effect. The dose, moreover, must not be repeated until the effect of the preceding dose is passing off. If it were possible to produce a summation of positive phases it would be advantageous to give successive doses at short intervals, so as to produce a maximal favourable effect, but such summation is not possible in the case of tubercle. Each inoculation, therefore, produces its effect independently and it remains to take the greatest advantage possible of the increased elaboration of protective substances which the artificial stimulus has produced.

The results of treatment of some dermatological cases have already appeared in a paper by Pernet and myself in the October, November, and December numbers for 1906 of the *British Journal of Dermatology*. Some cases were also included in a paper of mine in THE LANCET of Jan. 19th, 1907, p. 144. So many other successful cases have now been recorded that the employment of bacterial vaccines must in the future prove of the greatest service in the treatment of disease when controlled by the method which Wright and Douglas have so ably elaborated. In conclusion, I have much pleasure in thanking Professor Sidney H. C. Martin for his kindness, encouragement, and advice.

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A NOTE ON TESTS FOR ACETONE IN THE URINE.

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A FEW words on the tests for acetone in the urine may not be out of place at the present juncture when the conditions of recurrent vomiting with acetonuria are attracting so much attention. The tests ordinarily employed are: (1) the iodoform test; and (2) the sodium-nitroprusside test. The first mentioned is simple and, I believe, yields absolute evidence (with certain exceptions) together with microscopical examination of the iodoform crystals. The smell of iodoform produced when performing this test is unreliable, as a similar smell to that of iodoform is produced when iodine and alkaline solutions are added to urine irrespectively of the formation of iodoform. If acetone is present in small quantities distillation of the urine is advisable.

The sodium-nitroprusside test, which consists in the darkening which takes place on the addition of acetic acid to a solution of sodium-nitroprusside, urine, and liquor potassæ, is, I think, rendered more simple, delicate, and accurate by a slight modification—namely, the substitution of strong ammonia for the liquor potassæ and the elimination of the use of acetic acid. In the ordinary test when the solution of potash is employed there is a uniform reddening of the whole solution which on the addition of acetic acid in the presence of acetone becomes darker when the acid comes in contact with the urine, the darkening passing down as the acid sinks. Therefore, with this test the addition of liquor potassæ to the urine and sodium-nitroprusside yields a red colouration whether acetone is present or not, and it is only after the final addition of acetic acid that the presence of acetone is recognized and then only when there is a fair amount of the latter present. The detection of the presence of acetone is therefore dependent on the darkening of an already darkish red fluid by the final reagent acetic acid, and the degree of darkening, when acetone is present only in small quantities, is not altogether easy to determine. If, however, strong ammonia replace the potash solution the test for acetone is as follows. On adding the ammonia to a solution of sodium-nitroprusside and urine the ammonia solution remains on the

top; thus there is a clear solution uppermost with the urine solution below. Should acetone be present, even in minute quantity, a well-marked and absolutely characteristic ring of magenta (or petunia) appears within from one to three minutes at the junction of the two fluids and gradually spreads upwards pervading the whole of the ammonia solution if acetone is present in considerable amount. In the absence of acetone usually no colouration occurs, but sometimes an orange-red ring forms at the junction of the urine and ammonia solution, but this bears no resemblance to the "acetone ring" described above, hence the presence or absence of the latter is easily ascertained by the method which I believe has not been generally recognised.

The strength of the solution of sodium-nitroprusside is not important, but it is important that it should be prepared fresh and a few crystals dissolved in a test-tube of water are sufficient.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF RUPTURE OF A VERY EARLY EXTRA-UTERINE GESTATION; LAPAROTOMY; RECOVERY.

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THE following case is somewhat unusual owing to the early age of the extra-uterine conception and the entire absence of signs and symptoms preceding the rupture.

On Oct. 28th last I was asked by Dr. M. Aston Key of Southsea to see a young married woman in consultation who was presenting signs of some severe abdominal lesion. The patient was a healthy young woman, aged 23 years, who was married as recently as August 29th, 1906. Shortly after this date she had a regular menstruation period lasting for one week; at the end of September another regular period took place and on Oct. 22nd she again began to menstruate. This last period was rather shorter than usual and ended on the 26th. Otherwise she was in excellent health and attended a concert on the 27th. There had been no history of dyspepsia, hæmatemesis, or melæna. Early in the morning of the 28th on going downstairs she felt very faint and experienced severe pain in the hypogastrium rather to the right side; she revived and fainted again and this recurred several times during the morning. Vomiting occurred once in the afternoon and showed no peculiar characteristics. As she was getting much worse her medical attendant was summoned. When I saw the patient about 6.30 P.M. she was lying on her left side, moaning and in a very collapsed condition. Her skin was blanched; the pulse at the wrist was only feeble, flickering, and uncountable; the pupils were dilated; the abdomen was tumid, not distended, and below the umbilicus it was dull to percussion. She was anaesthetised with ether and an incision was made to the right of the linea alba through the right rectus abdominis muscle below the umbilicus. On opening the peritoneal cavity about two quarts of dark blood and clots escaped. The right Fallopian tube and ovary were normal, but in the region of the isthmus of the left tube there was a small swelling of the size of a hazel nut, from a small opening in which was presenting a small bunch of chorionic villi, which came away during handling and was unfortunately mislaid. The left Fallopian tube was then removed, considerable difficulty being experienced in securing all bleeding points on the uterine wall, some of which had to be included in passing the ligatures. The left ovary was normal. The lower half of the peritoneal cavity was then cleaned with absorbent pads and the wound was closed by peritoneal, muscular, and cutaneous sutures. The patient was in a profound state of collapse and so two pints of saline solution were infused into the right arm intravenously. She rallied soon after the operation, however, and made an uneventful recovery, being able to get up in three weeks' time.

The situation of the pregnancy in the isthmus of the Fallopian tube undoubtedly led to its early rupture. The

tumour, from its size and the smallness of the bunch of chorionic villi, could not have been of more than four weeks' growth.

As regards the diagnosis, the signs and symptoms presented by the patient undoubtedly pointed to internal hæmorrhage of an extensive character and this led me immediately to explore the region of the Fallopian tubes as being the most probable source of the hæmorrhage occurring thus suddenly in a young, healthy, rosy-cheeked woman, particularly as vomiting was a late and unimportant symptom and there was no hæmatemesis or melæna. The slight shortening of the last menstrual period was the only symptom at all indicative of any pregnancy and this one must own was a very slight one. Still, I consider it is always important to make very searching inquiries into the menstrual history and I think that this opinion is confirmed by this case.

Southsea.

NOTES OF A CASE OF STRANGULATED HERNIA ASSOCIATED WITH ACUTE HÆMORRHAGIC PANCREATITIS.

BY WALTER H. BROWN, F.R.C.S. IREL.

THE patient in the following case was a man, aged 60 years, and was admitted into the Leeds General Infirmary on August 2nd, 1903. The previous history was to the effect that he had enjoyed good health up to the day before admission, but on the evening of that day he was seized with a sudden and violent pain across the abdomen between the umbilicus and pubes. He vomited once or twice during the night. On admission the abdomen was somewhat distended and tender. There were a large hydrocele on the left side and a large hydrocele and hernia on the right side. The hernia was irreducible and tender. Shortly after admission he vomited a few ounces of dark fluid having a distinctly faecal odour. His general condition was extremely bad, his pulse was 130 per minute and very feeble, and he was obviously in great distress.

After ether had been administered the hernia was operated upon and was found to consist of a large coil of small intestine, deep purple in colour, but not strangulated completely. The bowel was returned without trouble and the pillars of the ring were sutured. The operation evidently had no material effect towards giving relief; he continued to vomit at intervals and died next day. It may be well to note here that flatus was passed several times after the operation, but none before it.

At the necropsy it was found that the scrotum contained a double hydrocele; behind the one on the right side there was an old hernial sac now empty; the inguinal canal was closed by suture. The lungs were much congested. The heart was normal. After opening the abdomen and removing the liver the parts in the neighbourhood of the lesser sac of the omentum gave way easily. The head of the pancreas was natural in size but very deep-coloured. On the upper aspect of the body of the pancreas there was a greyish slough of about the size of a walnut. The lesser sac was full of dirty curdy fluid resembling pus. The foramen of Winslow was closed. There was extensive fat necrosis of the great omentum and mesentery. The gall-bladder was full of small stones; the spleen was very soft; the kidneys were small and granular.

This was the first case of acute pancreatitis that I have had the opportunity of seeing post mortem. I observed at the time of the operation that the patient was far more ill than could be accounted for by his physical signs. The hernia, however, was irreducible and might, if gangrenous, be responsible for all the symptoms noted. After the operation I felt convinced that some intraperitoneal catastrophe had occurred but the patient's condition did not warrant further operative measures. Nor would any surgical procedure have afforded much chance of saving life, as, for instance, draining the lesser sac, fat necrosis being already present. Whilst it may be possible to diagnose pancreatitis in a given case observed during days of gradual onset I do not see how a surgeon is even to suggest its presence in an acute attack, more especially when the condition is associated with irreducible hernia. In the present case the disease was ushered in with no special symptom other than the familiar "sudden pain in body with vomiting," which symptom in scores of cases disappears and gives no further trouble. Alike from the patient's point of view and the surgeon's it is unfortunate that inflammation of the pancreas may occur without

previous warning of any kind, and may prove fatal in 48 hours without exhibiting any distinctive symptom, so that the nature of the illness is only discovered at the necropsy.

The pancreas physiologically is a peaceful organ, the pancreas pathological can be even as rapidly fatal in its attack, as the most virulent fulminating appendicitis.

Leeds.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Anti-typhoid Inoculation in the Army.—Observations on the Spirochæta of Relapsing Fever and Tick Fever.—A Note on Blackwater Fever in Sierra Leone.—A Pseudodiphtheria Bacillus from a case of Middle-ear Disease.—Bacillus Typhosus from Periosteal Abscess One Year after Typhoid Fever.

A LABORATORY meeting of this society was held at the Royal Army Medical College, Dr. P. H. PYE SMITH, the President, being in the chair.

Lieutenant-Colonel W. B. LEISHMAN, R.A.M.C., gave an account of the progress of Anti-typhoid Inoculation in the Army since the resumption of the method was authorised by the Army Council on the recommendation of the committee appointed by it to investigate the subject. The inoculations were voluntary but every effort was being made to popularise the method by means of lectures to all drafts and regiments proceeding on foreign service. As far as possible the inoculations were carried out before embarkation, but owing to various reasons the second inoculation was sometimes performed on board the transport. For this purpose vaccine was placed on board every outward-bound ship. The inoculations were also being carried out on a large scale in India and elsewhere and 20,000 doses of vaccine had been prepared and issued from the Royal Army Medical College during the last 12 months. Research work in connexion with the method had been carried on uninterruptedly at the Royal Army Medical College by Lieutenant-Colonel Leishman and his colleagues, Major Harrison, Major Grattan, and Lieutenant R. G. Archibald, and a short account was given of the lines of investigation and the practical bearing of some of the results upon the methods of preparing and standardising the vaccine. Numerous vaccines had been prepared from typhoid bacteria killed at different temperatures, by various chemical agents, by desiccation, &c., and their effects tested by measurement of the various protective substances which developed in the blood of inoculated animals. In several instances where the results appeared promising similar tests were carried out on man. The vaccine at present in use was described and an account was given of the mode of preparation and standardisation which had been somewhat modified from Sir A. E. Wright's methods in the light of the experimental work referred to. The bacteria were still killed by heat, but the temperature had been reduced to the minimum degree which would insure death in one hour—53° C. The deleterious effects of higher temperatures had been clearly brought out by some of the experimental work and it was suggested that the comparatively poor results obtained in some instances in the past might have been due to over-heating of the vaccine. The system adopted for ascertaining the protective value of the inoculations was then described, and the result of the inoculation of the 17th Lancers was given. This regiment, the only one which had been exposed to a severe epidemic of enteric fever since the modified vaccine had been in use, had 147 officers and men inoculated out of a strength of 509; they had 62 cases of enteric fever with 11 deaths; all of these occurred among the uninoculated with the exception of two, both being men who had refused the second inoculation; both of these men recovered.

Lieutenant-Colonel LEISHMAN, in a paper on the Spirochæta of Relapsing Fever and Tick Fever, after referring to the interesting nature of the problems awaiting solution in the connexion with many spirochæta infections, described the results of his own observations. His material consisted of films of blood from cases of African tick fever and of films of blood from Austria, Aden, and several parts of relapsing fever from Austria, Aden, and several parts of India; in addition, through the kindness of Professor Karl

Frankel he had had the opportunity of studying the living organisms of tick fever and of relapsing fever, the latter being the strain isolated in America and described by Ivy and Knapp. Lieutenant-Colonel Leishman had noticed the development of these organisms in white mice and, contrary to the usual experience, had found the strains equally fatal. The effect of passage appeared to be an undoubted increase in the virulence of the *Spirochæta* as evidenced by the earlier appearance of the organisms in the blood and their more rapid multiplication. It had failed entirely to confirm Novy and Knapp's description of easily recognisable morphological differences between a *Spirochæta* of tick fever, European relapsing fever, and *Diplo* relapsing fever, and had found wide variations in each case in respect of such features as length of the individual cell, number and depth of curves, tendency to formation of loops and figures of eight, &c. The inconstancy of these features appeared to him to depend upon such factors as the vitality of the organism, the stage of the disease, the method of fixation, &c. From other evidence, such as that of the immunity experiments of Breinl and Fraenkel and of Fraenkel, there appeared to be no doubt of a specific difference between the *Spirochæta* of tick fever (*Spirochæta Duttoni*) and relapsing fever (*Spirochæta Oberleineri*), but further work appeared necessary to prove the existence of two or more varieties of relapsing fever. As regards the biological nature of these *Spirochæta* which Novy and Knapp consider to be true bacteria Colonel Leishman pointed out that considerable differences of opinion and experience existed with respect to several of the points which these authorities considered as demonstrative of their bacterial nature. He had been unable to demonstrate flagella in either organism but had observed the structure which Haudin considered to be an undulating membrane in the *Spirochæta* of relapsing fever. A microscopical demonstration was given of the living organisms and stained specimens are shown of the different varieties both in human and in animal blood. The so-called undulating membrane was also shown in the case of a monkey *Spirochæta* and of *Spirochæta permerlei*.

Major H. W. GRATTAN, R.A.M.C., read a paper on Blackwater Fever in Sierra Leone. In eight out of ten cases malaria had been taken before the onset of "black water." Malarial parasites were present in the peripheral blood of 100 per cent. of cases after the onset of hæmoglobinuria. 100 per cent. of the cases harboured the *Ankylostomum* *moderate*. The red cells fell to 1,107,000 per cubic millimetre and the hæmoglobin to 25 per cent. in the most severe case that recovered. In two fatal cases 28 per cent. and 20 per cent. of hæmoglobin were noted. An absolute polynuclear leucocytosis was noted at the onset of the disease and later when suppression of urine occurred. 13,800 leucocytes per cubic millimetre was the highest count noted; this with 84 per cent. of polynuclears gave 11,592 polynuclears per cubic millimetre. No malarial parasites or pigment were found in the organs post mortem. It was considered that the evidence pointed to the disease being of malarial origin. His reasons were: (1) a previous history of malaria in every case; and (2) the presence of a malarial parasite in the blood of 38 per cent. of cases; and, further, he was of opinion that the disease was due to a special form of malarial parasite allied to, but distinct from, the parasite of malignant tertian. Specimens of blood films containing parasites were shown and charts illustrating the destruction and regeneration of the hæmoglobin and red cells.

Major W. S. HARRISON, R.A.M.C., showed a *Bacillus* resembling the *Diphtheria* *Bacillus* microscopically. It was isolated from an old case of chronic suppuration of the middle ear and was found in practically pure culture in the discharge. The organism stained by Gram, showed metachromatic granules when stained by Neisser's method, produced involution forms very like *Diphtheria* *Bacilli* in agar, and produced acid in broth. It differed from *Diphtheria* in its culture reactions, the growth on serum being thick and creamy, and on agar it gave a thick opaque yellow growth, the agar being gradually coloured brown and eventually becoming dark chocolate.

Major Harrison also showed a *Typhoid* *Bacillus* isolated from a sinus, following a post-typhoid abscess, a year after the attack of typhoid fever. It was extremely involutional, forming long strings similar to the cultures of *Typhoid* *Bacilli* on malachite green media; it gave, however, all the cultural characters of *Typhoid* *Bacilli* and was agglutinated by an anti-typhoid serum. The patient's

serum agglutinated other strains of typhoid bacilli in 1 in 200 to 1 in 400 and his own strain in 1 in 1000; the phagocytic ratio of the patient's serum was from two to four times greater than normal for other strains of typhoid bacilli and as much as 46 times greater than normal for his own strain, and his last high figure was probably accounted for by the fact that the bacillus isolated from the patient was very resistant to phagocytosis in mixtures containing normal serum only. Major Harrison found it difficult to account for the persistence of the organism in the body of a patient whose blood fluids showed such a high phagocytic ratio for typhoid bacilli.

LIVERPOOL MEDICAL INSTITUTION.

Nephrectomy for Renal Sarcoma in Children.—Plexiform Neuroma.—Variations in the "Normal Temperature."—A New Astigmometer.—The Surgery of Warfare and Catastrophe.

A MEETING of this society was held on March 14th, Mr. FRANK T. PAUL, the President, being in the chair.

Mr. K. W. MONSARRAT read a paper on two cases of Nephrectomy for Renal Sarcoma in Children with remarks on the Pathology and the Recent Results of Surgical Treatment. The first case was that of a boy, aged three years, the signs of disease being hæmaturia and abdominal tumour. The growth removed weighed 2 pounds 6 ounces. The child recovered from the operation but died from recurrence in six months. The growth was a sarcoma containing tubules and striated muscle fibres. The second case was that of a boy, aged five years, with abdominal tumour and hæmaturia. The child recovered from the operation and remained well at the end of six months. The growth weighed 2 pounds 2 ounces and was a pure round-celled sarcoma. Mr. Monsarrat found that published records indicated the occurrence of hæmaturia in about a third of the cases. He presented a statistical study of 104 cases published between the years 1897 and 1905 inclusive. These records showed that the present mortality from operation was 26 per cent. and that to the number of complete recoveries a total of seven had been added during the years examined. He considered that operation was justifiable in cases which showed no evidence of metastasis.—The President, Dr. N. PERCY MARSH, Mr. R. W. MURRAY, and Mr. A. STOKES discussed the paper.

Mr. G. G. HAMILTON showed a patient from whom he had removed a large Plexiform Neuroma. There were about 62 cases on record. In this case the tumour grew from the ilio-hypogastric nerve and was incorporated with the neighbouring muscle. It measured 10 inches by 4½ inches and showed numerous strands of nerve thickened to the size of a toothpick, many of them being coiled up into little capsules. There were very few axis cylinders present, the whole nerve being simply a mass of thickened gelatinous endoneurium. Mr. Hamilton's communication was illustrated by several lantern slides.—The pathology of the condition was discussed by Dr. E. E. GLYNN.

Dr. W. CARTER read a short note on Variations in the "Normal Temperature." After recalling the facts that Ogle and Liebermeister had recorded fluctuations varying from 1.8° to 2.3° F. in 24 hours and that Dr. Finlayson had observed that aged people in the Glasgow workhouse infirmary who died without any definite disease generally sank at the hour when in normal health the body temperature was lowest, he stated that on two occasions at distant intervals he had been able by the co-operation of the matron and night nurses of the Royal Southern Hospital to see if an inversion of the ordinary periods of night and day duty affected the normal rise and fall. Each nurse towards the end of her period of three months' night duty took her temperature three-hourly when not asleep in the day, but, as the charts, which were shown, proved, the normal depression which took place under ordinary conditions of life at about 3 A.M. remained fairly constant even after three months of turning night into day and vice versa. It seemed, therefore, to be deeply impressed on the organism and independent of external circumstances, so far, at least, as the trial of three months tended to establish the fact.

Dr. K. A. GROSSMANN explained the mechanism of his Astigmometer and demonstrated a working model.

Mr. ARTHUR J. EVANS in an interesting lecture on the Surgery of Warfare and Catastrophe, illustrated by

numerous lantern-slides from photographs and radiographs taken during the Boer War and after the earthquake in Jamaica, drew attention to the great contrast between the conditions under which surgery was practised in modern wars and those which obtained in sudden catastrophes such as an earthquake. In the one every contingency was attempted to be foreseen and provided for and the organisation was perfect beforehand; while, in the other, all aid had to be organised under the most appalling conditions and literally without a moment's notice.—The President proposed a vote of thanks to Mr. Evans for his lecture and of congratulation upon his escape from the earthquake and the great services which he had been able to render to the injured.—The vote was carried with very hearty cheers.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

The Prognosis and Treatment of Lobar Pneumonia.—Use of the Opsonin Index in the Diagnosis of Tuberculosis.

A MEETING of this society was held on March 6th, the chairman being at first Dr. BYRON BRANWELL and then Dr. J. O. AFLECK, the President.

The President communicated a paper entitled "Clinical Observations and Experiences in the Prognosis and Treatment of Lobar Pneumonia." If it were asked which of the acute diseases possessed the greatest interest for the physician, the answer would undoubtedly be, pneumonia. It could scarcely be answered satisfactorily as to the alleged increase in pneumonia as a disease as there were no direct means of determining its actual incidence in large communities. The Registrar-General's reports did not afford any definite information upon this point. The United States Census Reports for 1900 gave 106.1 deaths from pneumonia per 1000 deaths, against 90.6 in 1890 and 83.3 in 1880. More might be said on the question as to whether pneumonia had assumed a graver aspect of recent years. The President believed that this had been a more serious disease during the past 15 or 16 years than it had been previously. During the later "sixties" of last century his teachers did not regard pneumonia with the anxiety with which it was now the case and Hughes Bennett was wont to exhibit a list of over 100 uncomplicated cases without a death as due to his plan of treatment—viz., no drugs but feeding the patient. During the earlier years of the President's practice patients contracted the disease in a mild form and made good recoveries. When influenza appeared in 1890 pneumonia was one of the most serious of its complications. He felt sure that not a few cases of pneumonia were ushered in by influenza and thus the patient might suffer from the action of a double toxin. If this were so it would not be surprising that pneumonia should have assumed a severer form than was formerly the case. There was no means of foretelling at the beginning how the case would terminate and there were few diseases more treacherous in their liability to deviate from the normal course. In prognosis age was an important factor; excluding infants in whom the death-rate was very high, in the young and middle-aged uncomplicated cases might be expected to run a favourable course. In persons over 60 and especially over 70 years of age the mortality-rate was probably not less but more than 50 per cent. no matter what the previous health might have been. Habits, particularly the alcoholic, might outweigh the advantage of youth and vigor and might precipitate a fatal result. In the Royal Infirmary of Edinburgh in 1899-1900, of 19 cases of alcoholic pneumonia, 17 died; in 1900-01, of five alcoholic pneumonias, all died; in 1901-02, of 22 such cases, 18 died. Pneumonia occurring in the course of chronic maladies was of grave import, as it was also in acute infectious disease; where it followed surgical operations, though it might be grave, it was not always fatal. Pneumonia occurring during the acute forms of insanity was of grave prognosis. In some cases the patient might be overwhelmed by toxæmia from the first and might die in two or three days. Cases which exhibited prominent gastric and abdominal symptoms simulating some visceral lesion often turned out severe. Such cases had been mistaken for appendicitis. When pleuritic pain existed to any extent the prognosis was grave. Cases with copious perspiration and high temperature were serious from the great prostration. Nervous symptoms at the onset might

obscure the diagnosis. In drunkards delirium tremens might be one of the early accompaniments of pneumonia and it was a safe rule to take the temperature and to examine the lungs carefully in every case of alcoholic delirium, for death might occur with startling suddenness in such cases. In children convulsions might be the earliest sign of pneumonia, but did not necessarily imply an evil prognosis. The ability to sleep even for short periods was of the greatest importance. Marked and persistent insomnia was a grave symptom. Cases where no sleep could be induced even by hypnotics often ran an unfavourable course. Delirium to any considerable extent usually indicated an anxious case and it mattered not whether it was of the active or low typhoid form. The temperature did not furnish a trustworthy guide in prognosis. If it continued high (105° F.) with no remissions, the cases were grave. In the aged severe and dangerous types of pneumonia might be associated with low temperatures. The main determining factor in prognosis was the condition of the heart. There was reason to believe that the pneumonia toxin was both a heart and a lung poison. Profound toxæmia might be present while the area of lung involved was very small. The toxin affected both right and left heart equally. The lethal action of the pneumonia toxin on the vaso-motor centres might precipitate a sudden or gradual heart failure. The pulse rate and character were of the greatest importance in prognosis. In favourable cases in adults the pulse-rate seldom exceeded 120, even in the height of the disease. When it reached or exceeded 140 the patient seldom recovered. In none of its features was pneumonia more likely to exhibit its treacherous features than in the pulse. In the course of a few hours a case which had seemed to be going on favourably might become alarming in the extreme by the pulse becoming rapid and small. Such cases were usually fatal very soon after this change. At other times the lowering of blood pressure was slower but progressive and the prognosis was no better. These cases resembled the heart failures in diphtheria and were as resistant to treatment. In old people the rate was less important than the character, emptiness and irregularity being unfavourable signs. A moderate amount of expectoration was probably more favourable than none. Sputum was much less common in apical than in basal pneumonia; rusty sputum was better than bloody sputum. Cessation of expectoration with increasing cyanosis was very ominous. Double pneumonia was grave but almost equally so was complete consolidation of one lung. The President briefly described the chief characteristics of a favourable crisis and any non-conformity with these must be regarded with suspicion and anxiety. A rapid fall in the temperature with a continued rapid pulse, a rise in temperature when it should fall, or any symptoms of faintness or collapse, were of grave import. Sudden death from the mere exertion of sitting up in bed had often happened and therefore very little examination of the chest should be made. They had little power to arrest the progress of such a self-limited disease. The attempt to obtain early cure or abortion by means of sera had not as yet been encouraging. Attempts by depletion, &c., were of doubtful efficacy. The physician's work lay in guiding the case and in dealing with the symptoms which called for special treatment. The President's injunction to himself was, "Beware of meddling too much." The troublesome pleuritic pain might often be relieved by a hypodermic injection of from one-sixth to one-eighth of a grain of morphine. In hospital cases more than half of the patients stated that the application of the ice-bag to the painful side afforded relief; a certain number, however, could not bear it and wished it removed. It seemed most suitable in the young and vigorous and never seemed to have led to any increase in the pneumonic area. Warmth was, as a rule, well borne, but great heat was unnecessary and might aggravate the patient's discomfort. A moderately warm poultice often gave relief. The gamgee tissue jacket was all that was necessary in cases with no pain. Cough if troublesome often required treatment; dyspnoea was often of evil omen. The President's experience with oxygen inhalation had not been small but was disappointing. An ample supply of fresh air was always desirable. When the heart showed signs of failure digitalis, straphanthus, strychnine, and alcohol were useful remedies. Digitalis and strychnine were the most powerful in his hands and alcohol was inferior to strychnine as a stimulant. For insomnia paraldehyde given by the mouth or rectum was one of the best hypnotics. Opium in any form or dose he shrank from administering in the

advancing or advanced stage of a pneumonia. Dulcium might be treated by an ice-bag to the head and hyoscine was also useful. The pyrexia might be reduced by sponging such parts of the body as were easily reached but antipyretic drugs were not advisable from their heart-depressing tendency.—Dr. BRANWELL could never reconcile Hughes Bennett's results as he had always found the disease unassociated with a high mortality. He was certain that an antidotal serum would be found. He had seen cases of pneumonia mistaken for abdominal disease, as gastric ulcer, and even operated upon. He thought that jaundice in cases of right-sided pneumonia was very unfavourable. Dr. Branwell did not take so serious a view of a rapid pulse-rate (140) as the President. Irregularity of the pulse was of greater significance. Copious saffron-coloured sputum in influenza pneumonia was very grave. The expression of the patient was of great value in prognosis. Dr. Branwell prescribed very little alcohol, but thought that digitals, strychnine, and oxygen inhalations were of great value and he would wish to treat such patients by the open-air method.—Professor W. S. GREENFIELD said that in above 70 per cent. of cases vomiting at the onset was a feature. As regards treatment he had found that digitals often produced toxic symptoms and he had never seen any good results from strychnine and his only fatal cases had occurred under its use. It was in no sense a cardiac tonic. In all cases where the heart was failing he used atrophanthus. The ordinary tincture was useless and that of the pharmacopœia of 1835 had always to be prescribed. He employed five minims of this tincture with five minims of tincture of capsicum every three or four hours; then it might be increased to ten minims or even to 15 minims every half hour. Massive doses might be given even in apparently hopeless cases. Even in cases with a leucocyte count of from 3500 to 4000 improvement had resulted from such treatment.—Dr. ALEXANDER JAMES thought that the eruption of herpes was always a very favourable sign in prognosis. He was in the habit of giving a purge at the beginning of the disease and thought it valuable. He employed the ice-bag for the relief of the pleurisy and at the time of the crisis he found *mistura moschi* very helpful.—Dr. G. LOVELL GUILLAND said that the pneumococcus was found very often in the blood in fatal or in complicated cases. Leucocytosis was present in pneumonia, but in very severe cases there might be neither increase nor decrease, as might also happen in very mild cases. The case might be apparently going on well, but if the leucocyte count went on diminishing it was likely to prove fatal. The number of leucocytes should fall within one or two days after the crisis and if it did not then it pointed to serious symptoms. Cases where the eosinophiles persisted even in small amount were likely to do well.—Dr. WILLIAM RUSSELL said that the main factor in treatment was the maintenance of the heart's action. Strychnine acted on the vaso-motor centre and so improved the tone of the vessels. He appealed to Professor Greenfield to bring his experience and views more formally and fully before the society.—Dr. ALEXANDER GOODALL stated that he had been investigating the raw atrophanthus on the market for one of the manufacturing chemists and he had been surprised at the difference—some specimens had no more effect than so much water, while others were very potent and highly toxic.—Dr. W. E. CARNEGIE DICKSON and Professor H. HARVEY LITTLEJOHN took part in the discussion, and the PRESIDENT replied.

Dr. IAN STRUTHERS STEWART and Mr. L. O. PEEL RITCHIE communicated a Note on the Use of the Opsonic Index in the Diagnosis of Tuberculosis. In all forms of the disease early diagnosis was essential to successful treatment. Frequently, however, diagnosis was uncertain because of the indefiniteness of the early physical signs. The method which they submitted and at which they had been working for some time was one which rendered possible a diagnosis of tubercle even when the signs and symptoms were not conclusive. It consisted in the injection of a minute dose of tuberculin R. in conjunction with the observation of the tuberculo-opsonic index of the blood before and after inoculation. The conclusions were based on observations made on 122 consecutive cases of medical and surgical tuberculosis. The cases were divided as follows: 1. Those in which there was reasonable ground for diagnosing tuberculosis. In many diagnoses was based on pathological proof (examination of discharges, operation, &c.), and in the remainder by continued clinical observation. 2. Either normal cases or those suffering from diseases other than tuberculosis.

Several observers had shown that the tuberculo-opsonic index varied slightly in health. The normal limits of variation were from 0.8 to 1.2. The first group (tuberculosis) consisted of 83 cases. The indices of 41 fell within the normal limits and 41 outside. In the second group there were 40 non-tuberculous cases, of which 29 were within and 11 outside the normal limits. A diagnosis based on one examination of the tuberculo-opsonic index would have resulted in an error of diagnosis in one half the number. In the non-tuberculous cases 27.5 per cent. were outside the normal limits and a reliance on this test would have led to error to this extent. In acute tuberculous cases the swinging index might also lead to error in diagnosis. In a paper in conjunction with Dr. D. LAWSON of Banbury it had been shown that if a small quantity of tuberculin R. were injected into a tuberculous patient there was a diminution in the index but the reverse occurred in a healthy case. The method employed was as follows. The patient's blood was taken on the first day. Tuberculin was injected and the index estimated for the first and two succeeding days. The index of 1.0 was obtained from an examination of the blood of two healthy people. The bacilli ingested by at least 120 polymorphonuclear leucocytes were counted. The most suitable dose of tuberculin was 1/10th milligramme for adults and 1/20th milligramme for children. The depth of the negative phase was generally less where the primary index was low than where the primary index was high in an infected person. The usual fall in a tuberculous patient was 0.2. In 62 tuberculous patients inoculated a negative phase was observed in 56, or 90.3 per cent. In 13 cases (normal or non-tuberculous) a negative phase was not obtained after inoculation. The conclusions were: (1) the opsonic index *per se* was an unsatisfactory means of diagnosis, as both tuberculous and non-tuberculous cases fell within and without normal limits; (2) if a negative phase appeared after inoculation the existence of tuberculosis might be diagnosed; and (3) the absence of a negative phase indicated the absence of a tuberculous infection.—Dr. LAWSON (Banbury), Dr. GUILLAND, Mr. HAROLD J. SMITH, and Mr. BIRCHALL took part in the discussion which followed.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Maniacal Chorea.—Moreable Spleen

A MEETING of the Section of Medicine was held on March 1st, Dr. JOSEPH M. REDMOND, the President of the section, being in the chair.

The PRESIDENT of the Academy (Dr. J. MAGEE FINNY) read a paper on Maniacal Chorea, basing it on the clinical report of a case which had lasted nine days from the onset of the chorea and which had been preceded by an attack of rheumatism of a fortnight's duration. The patient, a girl, aged 17 years, was admitted to Sir Patrick Dun's Hospital, Dublin, on June 14th, 1906, with chorea minor, and presented a distinct systolic apical murmur. This murmur was audible up to her death and was considered to be due to organic disease of the mitral valve. On the day following her admission the choreic movements became very violent. With the access of these movements maniacal symptoms set in and so greatly did they overshadow the motorial disturbance that the house surgeon believed the case to be one of acute mania. The temperature was not raised for five days, but on the sixth day it reached 103.4° F. for a few hours and the pulse-rate rose from 80 to 130 on the day of her death. Dr. Finny said that he never saw a human being so tossed about and agitated in every limb as this girl. The skin of her lips, back, arms, and legs was rubbed off from the violence and suddenness of the movements, as no appliances of wadding, bandages, and stockings could be kept on; and at times it required from four to eight persons to restrain her in bed. Calm was obtained—but very temporarily—by chloral, inhalation of chloroform, and the hypodermic administration of hyoscine hydrobromate in doses of 1/10th or 1/20th of a grain. Death was preceded by semi-coma of from six to eight hours' duration. All through the illness (except for the last day or two) intelligence was retained and she could occasionally answer a question in a few words. At the necropsy the brain showed very little gross alteration beyond engorgement of the vessels of the cortex and there was an absence of meningeal inflammation.

numerous lantern-slides from photographs and radiographs taken during the Boer War and after the earthquake in Jamaica, drew attention to the great contrast between the conditions under which surgery was practised in modern wars and those which obtained in sudden catastrophes such as an earthquake. In the one every contingency was attempted to be foreseen and provided for and the organisation was perfect beforehand; while, in the other, all aid had to be organised under the most appalling conditions and literally without a moment's notice.—The President proposed a vote of thanks to Mr. Evans for his lecture and of congratulation upon his escape from the earthquake and the great services which he had been able to render to the injured.—The vote was carried with very hearty cheers.

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A MEETING of this society was held, on March 6th, the chairman being at first Dr. BYRON BRAMWELL and then Dr. J. O. AFFLECK, the President.

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obscure the diagnosis. In drunkards delirium tremens might be one of the early accompaniments of pneumonia and it was a safe rule to take the temperature and to examine the lungs carefully in every case of alcoholic delirium, for death might occur with startling suddenness in such cases. In children convulsions might be the earliest sign of pneumonia, but did not necessarily imply an evil prognosis. The ability to sleep even for short periods was of the greatest importance. Marked and persistent insomnia was a grave symptom. Cases where no sleep could be induced even by hypnotics often ran an unfavourable course. Delirium to any considerable extent usually indicated an anxious case and it mattered not whether it was of the active or low typhoid form. The temperature did not furnish a trustworthy guide in prognosis. If it continued high (105° F.) with no remissions, the cases were grave. In the aged severe and dangerous types of pneumonia might be associated with low temperatures. The main determining factor in prognosis was the condition of the heart. There was reason to believe that the pneumonia toxin was both a heart and a lung poison. Profound toxæmia might be present while the area of lung involved was very small. The toxin affected both right and left heart equally. The lethal action of the pneumonia toxin on the vaso-motor centres might precipitate a sudden or gradual heart failure. The pulse rate and character were of the greatest importance in prognosis. In favourable cases in adults the pulse-rate seldom exceeded 120, even in the height of the disease. When it reached or exceeded 140 the patient seldom recovered. In none of its features was pneumonia more likely to exhibit its treacherous features than in the pulse. In the course of a few hours a case which had seemed to be going on favourably might become alarming in the extreme by the pulse becoming rapid and small. Such cases were usually fatal very soon after this change. At other times the lowering of blood pressure was slower but progressive and the prognosis was no better. These cases resembled the heart failures in diphtheria and were as resistant to treatment. In old people the rate was less important than the character, emptiness and irregularity being unfavourable signs. A moderate amount of expectoration was probably more favourable than none. Sputum was much less common in apical than in basal pneumonia; rusty sputum was better than bloody sputum. Cessation of expectoration with increasing cyanosis was very ominous. Double pneumonia was grave but almost equally so was complete consolidation of one lung. The President briefly described the chief characteristics of a favourable crisis and any non-conformity with these must be regarded with suspicion and anxiety. A rapid fall in the temperature with a continued rapid pulse, a rise in temperature when it should fall, or any symptoms of faintness or collapse, were of grave import. Sudden death from the mere exertion of sitting up in bed had often happened and therefore very little examination of the chest should be made. They had little power to arrest the progress of such a self-limited disease. The attempt to obtain early cure or abortion by means of sera had not as yet been encouraging. Attempts by depletion, &c., were of doubtful efficacy. The physician's work lay in guiding the case and in dealing with the symptoms which called for special treatment. The President's injunction to himself was, "Beware of meddling too much." The troublesome pleuritic pain might often be relieved by a hypodermic injection of from one-sixth to one-eighth of a grain of morphia. In hospital cases more than half of the patients stated that the application of the ice-bag to the painful side afforded relief; a certain number, however, could not bear it and wished it removed. It seemed most suitable in the young and vigorous and never seemed to have led to any increase in the pneumonic area. Warmth was, as a rule, well borne, but great heat was unnecessary and might aggravate the patient's discomfort. A moderately warm poultice often gave relief. The gamgee tissue jacket was all that was necessary in cases with no pain. Cough if troublesome often required treatment; dyspnoea was often of evil omen. The President's experience with oxygen inhalation had not been small but was disappointing. An ample supply of fresh air was always desirable. When the heart showed signs of failure digitalis, straphanthus, strychnine, and alcohol were useful remedies. Digitalis and strychnine were the most powerful in his hands and alcohol was inferior to strychnine as a stimulant. For insomnia paraldehyde given by the mouth or rectum was one of the best hypnotics. Opium in any form or dose he shrank from administering in the

advancing or advanced stage of a pneumonia. Delirium might be treated by an ice-bag to the head and hyoscin was also useful. The pyrexia might be reduced by sponging; such parts of the body as were easily reached but antipyretic drugs were not advisable from their heart-depressing tendency.—Dr. BRANNWELL could never reconcile Hughes Bennett's results as he had always found the disease associated with a high mortality. He was certain that an antidotal serum would be found. He had seen cases of pneumonia mistaken for abdominal disease, as gastric ulcer, and even operated upon. He thought that jaundice in cases of right-sided pneumonia was very unfavourable. Dr. Brannwell did not take so serious a view of a rapid pulse-rate (140) as the President. Irregularity of the pulse was of greater significance. Copious saffron-coloured sputum in influenza pneumonia was very grave. The expiration of the patient was of great value in prognosis. Dr. Brannwell prescribed very little alcohol, but thought that digitalis, strychnine, and oxygen inhalations were of great value and he would wish to treat such patients by the open air method.—Professor W. S. GREENFIELD said that in above 70 per cent. of cases vomiting at the onset was a feature. As regards treatment he had found that digitalis often produced toxic symptoms and he had never seen any good results from strychnine and his only fatal cases had occurred under its use. It was in no sense a cardiac tonic. In all cases where the heart was failing he used atropine. The ordinary tincture was useless and that of the pharmacopœia of 1835 had always to be prescribed. He employed five minims of this tincture with five minims of tincture of capsicum every three or four hours; then it might be increased to ten minims or even to 15 minims every half hour. Massive doses might be given even in apparently hopeless cases. Even in cases with a leucocyte count of from 3500 to 4500 improvement had resulted from such treatment.—Dr. ALEXANDER JAMES thought that the eruption of herpes was always a very favourable sign in prognosis. He was in the habit of giving a piece of the lightning of the disease and thought it valuable. He employed the ice-bag for the relief of the pleurisy and at the time of the crisis he found *mistura moschi* very helpful.—Dr. G. LOVELL GULLAND said that the pneumococcus was found very often in the blood in fatal or in complicated cases. Leucocytosis was present in pneumonia, but in very severe cases there might be neither increase nor decrease, as might also happen in very mild cases. The case might be apparently going on well, but if the leucocyte count went on diminishing it was likely to prove fatal. The number of leucocytes should fall within one or two days after the crisis and if it did not then it pointed to serious symptoms. Cases where the eosinophiles persisted even in small amount were likely to do well.—Dr. WILLIAM RUSSELL said that the main factor in treatment was the maintenance of the heart's action. Strychnine acted on the vaso-motor centre and so improved the tone of the vessels. He appealed to Professor Greenfield to bring his experience and views more formally and fully before the society.—Dr. ALEXANDER GOODALL stated that he had been investigating the raw *strophanthus* on the market for one of the manufacturing chemists and he had been surprised at the difference—some specimens had no more effect than so much water, while others were very potent and highly toxic.—Dr. W. E. CARNEGIE DICKSON and Professor H. HARVEY LITTLEJOHN took part in the discussion, and the President replied.

Dr. IAN STRUTHERS STEWART and Mr. L. O. PEEL RITCHIE communicated a Note on the Use of the Opsonic Index in the Diagnosis of Tuberculosis. In all forms of the disease early diagnosis was essential to successful treatment. Frequently, however, diagnosis was uncertain because of the indefiniteness of the early physical signs. The method which they submitted and at which they had been working for some time was one which rendered possible a diagnosis of tubercle even when the signs and symptoms were not conclusive. It consisted in the injection of a minute dose of tuberculin R. in conjunction with the observation of the tuberculo-opsonic index of the blood before and after inoculation. The conclusions were based on observations made on 122 consecutive cases of medical and surgical tuberculosis. The cases were divided as follows. 1. Those in which there was reasonable ground for diagnosing tuberculosis. In many diagnosis was based on pathological proof (examination of discharges, operation, &c.), and in the remainder by continued clinical observation. 2. Either normal cases or those suffering from diseases other than tuberculosis.

several observers had shown that the tuberculo-opsonic index varied slightly in health. The normal limits of variation were from 0.8 to 1.2. The first group (tuberculosis) consisted of 82 cases. The indices of 41 fell within the normal limits and 41 outside. In the second group there were 40 non-tuberculous cases, of which 29 were within and 11 outside the normal limits. A diagnosis based on one examination of the tuberculo-opsonic index would have resulted in an error of diagnosis in one half the number. In the non-tuberculous cases 27.5 per cent. were outside the normal limits and a reliance on this test would have led to error to this extent. In acute tuberculosis cases the swinging index was also liable to error in diagnosis. In a paper in conjunction with Dr. D. LAWSON of Barchory it had been shown that a small quantity of tuberculin R. were injected into a tuberculous patient there was a diminution in the index but the reverse occurred in a healthy case. The method employed was as follows. The patient's blood was taken on the first day. Tuberculin was injected and the index estimated for the first and the succeeding days. The index of 1.0 was obtained from an examination of the blood of two healthy people. The bacilli ingested by at least 120 polymorphonuclear leucocytes were counted. The most suitable dose of tuberculin was $\frac{1}{10}$ th milligramme for adults and $\frac{1}{20}$ th milligramme for children. The depth of the negative phase was generally less where the primary index was low than where the primary index was high in an infected person. The usual fall in a tuberculous patient was 0.2. In 62 tuberculous patients inoculated a negative phase was observed in 56, or 90.3 per cent. In 13 cases (normal or non-tuberculous) a negative phase was not obtained after inoculation. The conclusions were (1) the opsonic index *per se* was an unsatisfactory means of diagnosis, as both tuberculous and non-tuberculous cases fell within and without normal limits; (2) if a negative phase appeared after inoculation the existence of tuberculosis might be diagnosed, and (3) the absence of a negative phase indicated the at once of a tuberculous infection.—Dr. LAWSON (Barchory), Dr. GULLAND, Mr. HAROLD J. STILES, and Mr. RITCHIE took part in the discussion which followed.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Maniac Chorea—Mortable Spleen

A MEETING of the Section of Medicine was held on March 1st, Dr. JOSEPH M. RUDMOND, the President of the section, being in the chair.

The PRESIDENT of the Academy (Dr. J. MURPHY FINNY) read a paper on Maniac Chorea, basing it on the clinical report of a case which had lasted nine days from the onset of the chorea and which had been preceded by an attack of rheumatism of a fortnight's duration. The patient a girl, aged 17 years, was admitted to Sir Patrick Dun's Hospital, Dublin, on June 14th, 1906, with chorea minor, and presented a distinct systolic apical murmur. This murmur was audible up to her death and was considered to be due to organic disease of the mitral valve. On the day following her admission the choreic movements became very violent. With the access of these movements maniacal symptoms set in and so greatly did they overshadow the motor disturbance that the house-surgeon believed the case to be one of acute mania. The temperature was not raised for five days, but on the sixth day it reached 103.4° F. for a few hours and the pulse rate rose from 80 to 120 on the day of her death. Dr. Finny said that he never saw a human being so tossed about and agitated in every limb as this girl. The skin of her lips, back, arms, and legs was rubbed off from the violence and suddenness of the movements, as no appliances of wadding, bandages, and stockings could be kept on; and at times it required from four to eight persons to restrain her in bed. Calm was obtained—but very temporarily—by chloral, inhalation of chloroform, and the hypodermic administration of hyoscin hydrobromate in doses of $\frac{1}{10}$ th or $\frac{1}{20}$ th of a grain. Death was preceded by semi-coma of from six to eight hours' duration. All through the illness (except for the last day or two) intelligence was retained and she could occasionally answer a question in a few words. At the necropsy the brain showed very little gross alteration beyond engorgement of the vessels of the cortex and there was an absence of meningeal inflammation.

numerous lantern-slides from photographs and radiographs taken during the Boer War and after the earthquake in Jamaica, drew attention to the great contrast between the conditions under which surgery was practised in modern wars and those which obtained in sudden catastrophes such as an earthquake. In the one every contingency was attempted to be foreseen and provided for and the organisation was perfect beforehand; while, in the other, all aid had to be organised under the most appalling conditions and literally without a moment's notice.—The PRESIDENT proposed a vote of thanks to Mr. Evans for his lecture and of congratulation upon his escape from the earthquake and the great services which he had been able to render to the injured.—The vote was carried with very hearty cheers.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

The Prognosis and Treatment of Lobar Pneumonia.—Use of the Opsonin Index in the Diagnosis of Tuberculosis.

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Abdominal hysterectomy was performed with some difficulty occasioned by the shortness of the broad ligaments resulting from the previous operation and the presence of enlarged pelvic glands which were only recognised on opening the abdomen. The pelvic glands were removed, those in the obturator canal forming a mass two inches long and half an inch broad. Sections of the cervix showed early adenocarcinoma, some of the acini being free from infiltration. There was definite carcinoma in the obturator and pelvic glands. The uterus contained pus and sections of its wall showed round-celled infiltration with destruction of the endometrium. The patient made a good recovery. The case showed that an extensive infiltration might take place in the pelvic glands with very early disease of the cervix.—Dr. Alexander Stookes (Liverpool) mentioned a case of Single Condyloma of the Cervix in a patient five months pregnant. There was no other evidence of syphilis except pigmentation of the thighs.—Dr. Arthur J. Wallace (Liverpool) made a short communication on a Modification in the Technique of Ventrofixation of the Uterus. The subsequent occurrence of intestinal obstruction in a patient on whom he had performed ventrofixation as well as recorded cases of a similar accident in the practice of some other operators led him to modify his procedure in the technique of the operation. He had noticed that when occasion arose for opening the abdomen of patients who had previously been subjected to this operation a window existed in the utero-vesical pouch below the suspended uterine body. This space would sometimes admit four fingers and through it a loop of bowel could readily pass. To obviate this a complete peritoneal diaphragm was formed from the vesical and utero-vesical peritoneum before suspending the body of the uterus.

HUNTERIAN SOCIETY.—A meeting of this society was held on March 13th, Mr. John Poland, the President, being in the chair.—Dr. George Carpenter read a paper on Nephritis in Infants. According to some American authors albuminuria with passage of casts was common in infants, especially during the course of gastro-intestinal disorders. In Dr. Carpenter's own experience, however, albuminuria in infants was rare; he found it in only two out of 62 cases in the out-patient room. In both these cases there was a marked diminution in the amount of chlorides in the urine. Cases of nephritis undoubtedly occurred in infants, with the usual signs and symptoms. The disease might begin during intra-uterine life. Syphilis played some part in the etiology; there was retarded development of the kidneys in congenital syphilis. Some other toxins might also be a cause of the disease. An important point to remember was that in infantile nephritis, whether of syphilitic origin or not, the kidneys might appear to be normal to the naked eye.—Dr. David B. Lees read a paper on the Administration of Salicylates. He considered that sodium salicylate was as directly antagonistic to acute rheumatism as was mercury to syphilis or quinine to malaria. The drug was often given in doses which were really quite inadequate, because it sometimes caused unpleasant symptoms, and also because there was a prevalent idea that salicylates acted as cardiac depressants. As regards the unpleasant symptoms, the occurrence of which, except vomiting, was rare in children, omission of two or three doses usually lead to their disappearance. Dr. Lees always gave double doses of sodium bicarbonate—e.g., ten grains of bicarbonate of sodium with five grains of salicylate of sodium, which was not a cardiac depressant. The dose should be increased daily or every second day until the maximum was reached. In adults this might be 450 grains in 24 hours. One of Dr. Lees's patients, a boy, aged 15 years, took 600 grains in 24 hours, and then 500 grains six days a week for three weeks. There was no need to discontinue the drug during an attack of pericarditis. If sodium salicylate was given without sodium bicarbonate a condition of acid intoxication very much resembling diabetic coma might be produced. This condition might also be produced by aceto-salicylic acid. In chorea small doses of sodium salicylate were not much good; the dose should be from 200 to 300 grains per diem. Aceto-salicylic acid was especially useful in chronic cases. The objection to this drug was that it could not be given with an alkali.—Mr. Harold L. Barnard read a paper on Intussusception, based on an analysis of 187 cases operated on at the London Hospital. 135 occurred in babies under one year old, 165 under ten years of age. Only four cases occurred in infants under the age of three months. 131 patients were male and 56 were female. He considered that

two factors of great importance in the etiology were lack of nervous control of the ileo-colic sphincter and hypertrophy of the lymphatic nodules of the lower end of the ileum. Prolapse of the mucous membrane of the ileum through the ileo-colic sphincter might occur, like prolapse of the rectal mucous membrane through the anus, and act as the starting-point of the intussusception. The diagnosis was usually easy, but colitis might simulate intussusception and vice versa. The best treatment was immediate operation, though according to Mr. McAdam Eccles's statistics the results of injection were just as good.—Mr. Douglas Drow, Mr. Hugh M. Rigby, Mr. Hugh Lett, and Mr. Hugh Davies discussed the paper. They were none of them willing to accept Mr. Barnard's theory of the causation of intussusception as explaining all cases, as cases in which the caecal coli formed the apex of the intussusception were not uncommon. They were all of opinion that preliminary injection or inflation was useless, as although these methods of treatment often effected partial reduction they did not effect complete reduction.

INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this society was held on March 8th, Dr. D. S. Davies, the President, being in the chair.—Dr. J. E. O'Connor, barrister-at-law, read a paper upon Combined Sanitary Districts. He said that the chaotic and disorganised state of the sanitary medical service had long since become a by-word and that by its improvement the public, and especially the poor, would be greatly benefited. With a view to securing such improvements he recommended the giving of power to the Local Government Board compulsorily to combine sanitary areas for the purpose of appointing a joint medical officer of health; the consolidating of appointments of medical officers of health with supervision of their salaries by the Local Government Board; the payment of official expenses such as the cost of travelling from one part of a district to another; and the provision of clerical assistance. At the present time combined districts appointing whole-time medical officers of health embrace about one-sixth of the area of the country. In Dr. O'Connor's opinion efficiency in rural sanitary administration would be most easily and effectively obtained by combining the remainder of the lesser urban and rural districts. He considered that there was no need for the sweeping alterations in local government recommended in the recent report of the Select Committee on the Housing of the Working Classes—alterations which, apart from the widespread dissatisfaction which they would engender in the precise class that they were intended to benefit, were open to many administrative objections. If the committee had obtained evidence from the members of the Society of Medical Officers of Health who were engaged in the administration of the Public Health Acts in country districts it would have learned that the necessity for administrative improvement was even greater in the small urban districts which it left untouched than in the rural districts which it would extinguish. If it had had before it evidence as to the disabilities under which even the medical officers of combined districts suffered it might have spared its censure on officials who were the victims of inept legislation and might have directed more attention to the indifference of successive Governments to the administrative supervision of the public health. He did not consider that the county was a suitable unit for the apportionment of duties among medical officers of health but advocated the formation of more or less arbitrary combined districts of about 500 square miles in area and with a population of about 100,000. A district of this size he considered could be supervised by one medical officer of health provided he was given suitable clerical assistance.—Mr. Herbert Jones said that the medical inspectors of the Local Government Board, when advising a combination of sanitary districts, were in the habit of stating that the services of a "young and active medical officer of health could be secured at a salary of £500 per annum." This salary would, however, in reality be reduced by official expenses to less than £400.—Mr. W. Gruggen stated that a large district in Hertfordshire had become disintegrated through rural areas becoming urban districts and a local medical officer of health had been appointed.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on March 6th, Dr. S. Moritz, the President, being in the chair.—Dr. Moritz delivered his presidential address on the Diagnosis of Pulmonary Tuberculosis in its Earlier Stages. He pointed out that though

of the brain or cord. On microscopic examination some small vessels of the cortex in the Rolandic area were found to be thrombosed; in others collections of cells with oval nuclei lay heaped up in the perivascular lymphatic spaces. The spinal cord presented nothing abnormal. The cerebro-spinal fluid was examined bacteriologically for Wassermann's cocoon (diplococcus rheumaticus), but with negative results. The cultures remained sterile. No other organ presented any abnormality except the heart, which was small and in an atrophied condition. The mitral and other valves were not inflamed. Dr. Finny called attention to the agreement between the clinical inference that rheumatism and chorea were due to the same poison and the recent bacteriological work of Poynton and Holmes, which demonstrated that the diplococcus of rheumatism was present in the brain and membranes of the cord, as well as in the fringe of vegetation around the mitral orifice and in the mitral valve itself—so commonly found in chorea and in rheumatism. Thus the same micro-organism has been found in various organs—brain, spinal cord, and heart. This organism, termed the diplococcus rheumaticus, has been found in rheumatism and in chorea and according as the toxin produced by it attacked the psychical or the motorial centres of the human subject, so the case would be characterised by great mental disturbance (mania) or by violent choreic muscular movements or both.

Dr. J. CRAIG said that chorea was now described rightly as a specific fever. There was always a certain amount of acute dilatation of the heart in the early stage, with a cardiac murmur that would subsequently disappear. Chorea was merely a complication or manifestation of the rheumatic state. As regards treatment he had modified his belief in the administration of large doses of arsenic.

Dr. THOMAS G. MOORHEAD read an account of a case of Moveable Spleen.

BRITISH GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on March 14th, Mr. W. D. Spanton, the President, being in the chair. The President showed a specimen of Sarcoma of the Parovarium removed from a patient, aged 42 years, who had been married 16 years, had two children, and one miscarriage 12 years ago. Her health was good until five years ago when she had neuritis of the limbs and head. On opening the abdomen a parovarian cyst was found in the left mesosalpinx. The cyst wall was extensively infiltrated with spindle-celled sarcomatous growth probably of endothelial origin. The growth was removed and the patient made a good recovery. The President also showed a specimen of large Uterine Myoma with Sarcomatous Outgrowth, removed by abdominal hysterectomy from a widow, aged 49 years. Convalescence was satisfactory. Dr. J. A. Mansell Moullin exhibited a Fibroid Uterus containing a foetus of four months removed from a patient, aged 28 years, who was pregnant for the first time and complained of great abdominal pain and tenderness. Examination suggested ectopic gestation. When the abdomen was opened a cervical fibroid was found which would probably have interfered with delivery at term. Dr. H. M. Macnaughton-Jones showed a specimen of carcinoma of the vagina from a patient who afterwards developed carcinoma of the ovary. Mr. F. Bowreman Jessett exhibited a specimen of Carcinoma of the Ovary involving the sigmoid flexure removed from a patient, aged 48 years, who complained of a vaginal discharge which occurred irregularly, being sometimes sanguineous and at other times watery. She was a healthy-looking, well-nourished, active woman. No abnormality was discovered on abdominal examination, but by the vagina the cervix was found to be eroded and thickened, and bimanually a small tumour was found connected with the posterior surface of the uterus which was enlarged but quite mobile. As the discharge seemed to come from the erosion local treatment was recommended with good result. 16 months afterwards an abdominal tumour was discovered extending nearly to the umbilicus and somewhat fixed. This was connected with a tumour in the pouch of Douglas, closely attached to the posterior surface of the uterus. Operation was advised and on opening the abdomen a large tumour presented itself with numerous adhesions to intestines and omentum. After separating these the tumour was found to be so closely adherent to the sigmoid flexura that it was necessary to resect the portion of intestine involved.

Convalescence was complicated by tympanites and constipation which required reopening of the wound. In 14 days the temperature rose and pain became severe. These symptoms were followed in a few days by a fecal fistula at the lower angle of the wound. The fistula closed in a few weeks and the patient progressed satisfactorily. The growth proved to be an alveolar carcinoma. Mr. E. Stanmore Bishop read a paper entitled "Mobile Kidney with a Description of an Operation for Anterior Nephropexy." The only form of importance was the wandering kidney. Two stages existed, the first being one of descent and the second that of loosening of the ureteral attachment to the spine. As the result of the first there was bending of the ureter and subsequently stagnant urine, then kinking of vessels and dragging of the duodenum and biliary ducts. The results of the second stage on the left side were traction on the pericardium through the diaphragm with anginal attacks, constipation and sapremia, followed by hysteria and neurasthenia. The objections to the posterior methods of operating were stated. In any further method the kidney should be supported from below and be placed at a proper height. Through a transverse incision in front the liver was raised and the hepatic flexure was depressed. The kidney was pushed up to its proper level. A transverse incision was made through the peritoneum and the capsule was cut through in a curved line which was then turned down and the edge fixed. The peritoneum was then replaced and sewn up. An incision was made through the skin and tissues posteriorly over the lumbar muscles. Fixation sutures of chromic or iodised gut were passed through the kidney from the front, with due regard to vessels and nerves, to the posterior incision, and were there tied, after which both wounds were closed. This operation had been performed ten times with satisfactory results in all but the first case, where the capsule was not utilised.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held at Sheffield on March 15th, Dr. Edward O. Croft, the President, being in the chair. Dr. Archibald W. Cuff (Sheffield) described a case of Ruptured Isthmic Ectopic Gestation. The patient, who was 34 years of age and had been four times pregnant, had two miscarriages each at about the fifth month. Menstruation was regular up to the last period which was a week late. After an interval of 30 days she was suddenly seized with intense pain in the lower abdomen which rapidly became worse. There was considerable collapse, the pulse-rate was 120, the temperature was sub-normal, and respiration was sighing. Abdominal section was performed within six hours of the onset of the first symptom. The abdomen contained free blood and the isthmus of the right Fallopian tube was found to be the seat of an early gestation which had ruptured. Dr. Cuff also related a case of Uterine Fibroid in a woman, 35 years of age, and four months pregnant, who suffered from abdominal pain and constant vomiting. Her temperature was 101° F., her pulse-rate was 120, and she looked very ill. The size of the abdominal swelling exceeded that of a four months pregnancy and on the left side a hard, excessively tender swelling could be felt. It could be moved independently of the uterus and this together with the fact that it had rapidly increased in size pointed to its being a solid ovarian tumour with a twisted pedicle. Abdominal section revealed a uterine fibroid of the size of a fetal head springing posteriorly from the left cornu of the uterus. Enucleation was performed and a second and smaller fibroid was removed. Superficial and deep sutures were used to close the uterine incision and the abdominal wall was sutured in three layers. There was no interference with the progress of the pregnancy. Dr. John E. Gemmell (Liverpool) read notes of a case of Early Carcinoma of the Cervix Uteri treated by Abdominal Hysterectomy and Pelvic Dissection. Five years previously he had operated on the patient for an adenomatous ovarian cyst on the left side and hydrosalpinx on the right side. She remained in good health until the summer of 1906, when she began to have pain in the left leg and thigh. On admission to a hospital in January, 1907, there was marked cedema of the left leg. Per vaginam the uterus was found to be as large as in the third month of pregnancy, of soft solid consistence and fixed; the cervix was hard and irregular and bled easily. Early epithelioma of the cervix was diagnosed with fibroid of the uterus.

the disease was far advanced and the patient exhausted. Judging from the very conflicting literature on the subject and from his own observations, he was of opinion that pregnancy had a very uncertain effect upon the course of Graves's disease, sometimes ameliorating but more often aggravating it. There was, therefore, no reason to preclude girls with exophthalmic goitre from marriage.—The paper was discussed by the President, Dr. A. H. K. Barbour, Dr. N. T. Brewis, Dr. James Ritchie, and others.—Dr. David Newman described several cases of Lesion of the Bladder, illustrating the cystoscopic appearances by the opaque projector. The first three cases were examples of sacculated bladder, in two of which the diverticulum contained a calculus. In one of them the calculus would probably have escaped observation without the assistance of the cystoscope. The mucous membrane of the bladder was practically normal. The colour, except immediately around the opening of the sacculi, was pale, but the lips of the opening were deeply congested, rounded, and thickened, and in contrast to the bright red lips of the opening the calculus was seen as a pale white object. Dr. Newman also described three cases illustrating certain causes of painful micturition in women, not usually recognised. In the first case there was at the margin of the neck of the bladder a crowd of very delicate filar processes with bulbous ends extending from the margin inwards for a distance of about a third of an inch; the papillae were pale in colour, except at the tips, where they were bright red and almost of the colour of blood. They were quite translucent and presented an edematous appearance. The symptoms were practically those of a vesical calculus; removal of the outgrowth, which was of inflammatory origin, gave complete relief. In another case the lesions were little nodular growths not larger than a barley-corn, oval in shape, of a bright red colour, and protruding from the mucous membrane very much like the granulations in chronic pharyngitis. This lesion was frequently seen in rheumatic subjects and unless a cystoscopic examination was made the symptoms might be assigned to other causes.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 7th. Dr. W. C. Chaffey, the President, being in the chair.—The President showed a child, aged seven years, with a Constant Slow Pulse, 40 to 50 beats in the minute, also an apical systolic murmur, but no dilatation of the heart. He also showed a child with Spastic Paraplegia which he considered to be due to congenital abnormality in the pyramidal tracts and not to injury at birth.—Dr. E. Hobhouse showed a case of Spastic Paraplegia (Diplegia) in a child.—Dr. Walter Broadbent showed a man with Charcot's Disease of the Left Knee-joint, there being painless effusion, grating of the bones, and looseness of the ligaments. The patient had Argyll-Robertson pupils and no knee-jerks, but there was no ataxia.—Dr. D. G. Hall showed a similar case of Charcot's Disease of the Knee and a remarkable case of Charcot's Disease of the Right Shoulder which had come on painlessly and very rapidly in which an x-ray photograph showed considerable loss of the head of the humerus; the arm could be moved into almost any position, natural or unnatural. He also showed a woman with Leontiasis Ossea of the Face and Tertiary Nodes of the Tibia and Right Femur.—Dr. A. J. Hutchison showed photographs and microscopic specimens from a case of Osteosarcoma of both Superior Maxilla which at first simulated double antral suppuration.—Dr. Broadbent read a paper on Some Myocardial Diseases, pointing out that myocarditis was often neglected because there was no cardiac murmur. He also dealt with the physical signs of cloudy swelling, the shortening and weakening of the first sound, and the variations in different acute diseases, and laid stress on the dangers of dilatation of the stomach in these diseases.—The paper was discussed by the President, Dr. C. H. Benham, Dr. Hutchison, Dr. A. M. Dalry, Dr. H. C. Lecky, and Mr. W. D. Calvert.—Dr. Broadbent replied.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 1st. Dr. J. Lindsay Steven, the President, being in the chair.—Dr. J. Walker Downie read notes on Six Cases of Sarcoma of the Nose. The masses of the ethmoid, including the middle turbinal, or in some the septum involved. The growths resembled simple mucous polypi. Epistaxis, pain during any manipulation with

the tumour, and any distension and hypertrophy of the nasal bones were suspicious symptoms and called for careful microscopic examination of the tumour. Early diagnosis and thorough removal were very important. Where the tumour was entirely intranasal it should be removed by punch forceps, cauteries, and the electric cautery. Where the septum was involved and the area widespread Roux's operation should be performed.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on March 15th. Dr. J. R. T. Conner, the President, being in the chair.—Mr. C. Gordon Watson read a paper on the Treatment of Tuberculous Disease of the Knee. He said that in early cases rest should be enforced, as this checked inflammation and so prevented deformity. A moulded undressed leather splint should be worn for six months after all active symptoms had subsided. Tuberculin injections and passive congestion might be used in future in the treatment of tuberculous arthritis. Suitable hygienic conditions were most important. The following generalisations briefly expressed Mr. Watson's conclusions on the operative treatment. Mixed infection spelt doom to the joint. There were two knees worth having: the moveable, when it was stable; and the fixed, when it was straight. Crasions seldom produced either. Fibrous ankylosis spelt fixation and failure. The tubercle bacillus sometimes wrecked a child's joint; but erosion and excision were the worst offenders. In the young adult excision was very good; in the old amputation made the best of a bad job.—Dr. W. Langdon Brown read notes of a case of Frontal Cerebral Abscess and showed the specimen. He also showed a microscopic specimen of an Anglo-mammoma.—Mr. W. Campbell McDonnell read notes of a case for diagnosis.

Reviews and Notices of Books.

Judicial Statistics, England and Wales, 1905. Part I., Criminal Statistics. London: Wyman and Sons, 1907. Pp. 211. Price 2s.

THIS volume of criminal statistics for 1905 contains the usual information relating to the movement of crime and to the judicial proceedings in criminal cases during the year in question, together with the customary returns as to coroners' inquests, reformatory and industrial schools, criminal lunatics, and habitual drunkards. The figures are arranged in the tabular form adopted on the revision of the criminal statistics in 1892. The tables are preceded by a lengthy and interesting introduction written by Sir John Macdonell, C.B., Master of the Supreme Court, who, it will be recollected, contributed a valuable introduction to the statistics for 1893. On the present occasion he has dealt exhaustively with the figures for the year under review and has also devoted special consideration to certain points of general sociological interest as to which he has been at pains to obtain supplementary information. As a result, his introduction forms one of the most remarkable studies of crime that have appeared in this country for some years.

The first question usually asked with reference to these statistics is, What do they tell us of the tendency of crime? The answer suggested by the official figures is that during the last few years crime, at least in its more serious forms, has increased absolutely and relatively to population. In 1905 the number of indictable offences reported to the police and the number of persons tried for such offences were larger than in the preceding year and considerably in excess of the average figures for the period 1901-05, and the frequency of serious crime during that quinquennial period was again considerably greater than in the five years 1896-1900. If, however, we carry the comparison back over a longer term of years we find that the general trend of movement has been decidedly downwards. Thus, while the average number of persons per 100,000 of the population tried for indictable offences in 1901-05 was 175, in 1857-60 it was 263. In this more extended survey the year 1899 is seen to

the finding of tubercle bacilli in the sputum made the diagnosis of pulmonary tuberculosis absolutely certain, the diagnosis often had to be made when tubercle bacilli were not found, for there might be no sputum, or it might contain no bacilli or show them only at intervals, this latter condition being of frequent occurrence. Iodide of potassium and a wet pack sometimes promoted the expectoration of characteristic sputa. The serum diagnosis of Arloing and Courmont gave in 12 per cent. of tuberculous cases a negative, and in 33 per cent. of clinically non-tuberculous cases a positive, reaction. Injections of tuberculin were not always free from danger and a positive reaction only proved the presence of a tuberculous focus somewhere, which focus might moreover be active or latent. The President then gave the particulars and the results so far obtained by opsonin testing at the Delamere Sanatorium. These led him to the conclusion that the opsonic index formed no trustworthy diagnostic sign for pulmonary tuberculosis as it might be normal, high, or low. French's sign also was of no help; after small injections of tuberculin, namely, there need not be a long-lasting negative phase in the phthisical, as this negative phase was occasionally absent and frequently found of short duration. The President concluded that the diagnosis of early pulmonary tuberculosis must still be made not by bacteriological methods but by the consideration of the symptoms and physical signs. He reviewed the former, laying special emphasis on the significance of persistent rises of temperature, hæmoptysis, digestive troubles, &c. In regard to the last he recommended careful percussion and auscultation over the posterior apices of the lung after the patient had been at rest and before he had been made to breathe deeply, as only in this way some abnormalities in the sounds due to temporary obstruction of a bronchus could be heard, which sounds disappeared after several deep inspirations. He further reviewed the significance of other physical signs, as well as the results of Roentgen ray examination.—Mr. J. E. Platt related the case of a man, aged 60 years, in whom he had performed the operation of gastro-jejunostomy for a carcinoma of the pylorus causing marked obstruction. On the fourth day after operation the left submaxillary gland had become swollen and painful and on the sixth day the left parotid gland also. A few days later the glands were incised and considerable quantities of pus were evacuated. After the operation the patient had been greatly distressed by an extremely dry condition of the mouth. The abdominal wound had healed by primary union, and with the exception of the suppuration in the salivary glands the patient had made a good recovery and had had relief from his symptoms for many months after the operation. The pathology of the condition was discussed, and it was pointed out that the suppuration was the result of a septic condition of the mouth and deficient secretion of saliva allowing organisms to travel upwards along the ducts of the salivary glands. In the majority of cases the suppuration had been preceded by a very dry condition of the mouth, and in many cases the patient had been fed for some time by nutrient enemata. The comparative rarity of this affection in the submaxillary gland was referred to.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.—A meeting of this society was held on March 8th, Mr. Mayo Collier, Vice-President, being in the chair.—Dr. P. H. Abercrombie showed a case of a male, aged 62 years, in whom he had performed Thyrotomy for the removal of Epithelioma of the Right Vocal Cord. The suspicions aroused by the clinical appearances had been made certain on examination by Dr. V. H. Wyatt Wingrave of a piece of the growth removed by Dundas Grant's laryngeal forceps. Operating at an early stage the exhibitor had been able to excise the growth thoroughly.—Dr. Abercrombie also showed another case in which he had performed Thyrotomy two years ago for Epithelioma of the Left Vocal Cord and in which no recurrence had taken place. In both operations he had performed a preliminary tracheotomy and had inserted into the trachea a Hahn's cannula.—Dr. Abercrombie likewise showed a case of "Tuberculoid" Disease of the Left Tonsil in a woman, aged 67 years. The patient went to hospital complaining of sore-throat confined to the left side, of about two months' duration. On inspection the left tonsil was seen to be enlarged and covered with a whitish exudation and at its upper border extending on to the palate was a nodular, ulcerated area. The left side of the palate, the epiglottis, the left arytenoid, and the left ventricular band were

congested and oedematous. The glands at the left angle of the jaw were enlarged and tender. The first explanation of these appearances was that the disease was either tertiary syphilis or malignant disease. The microscopic findings, however, showed, in the opinion of Dr. Wyatt Wingrave, that the tonsil was the seat of granular deposit of the tuberculous type. No tubercle bacilli were found in the tissue.—Mr. Mayo Collier showed a case of Laryngeal Tuberculosis in a male the subject of long-standing tuberculous disease in the lungs and ribs.—Mr. W. J. Chichele Nourse showed a case of Tuberculous Disease of the Larynx in which enormous swelling of the left arytenoid region existed.—Mr. Mayo Collier thought that these cases should be treated by tracheotomy in order to give the larynx rest and time to recover from the severe inflammatory reaction, otherwise the condition would go on from bad to worse until the tumefaction and pain would effectually prevent swallowing, when the patient would rapidly sink from inanition.—Mr. H. S. Barwell and Mr. J. Bark could not agree with Mr. Mayo Collier in his advice. Their experience of tracheotomy had been very discouraging. They preferred to remove the tuberculous masses with punch forceps if the necessity for interference arose.—Dr. Andrew Wylie showed a case of Paralysis of the Left Vocal Cord of Four Years' Duration in a young man due to pressure on the left recurrent laryngeal nerve by large masses of enlarged lymphatic glands in the root of the neck.—Dr. Patrick Dempsey and Dr. S. Horace Law considered the glands in Dr. Wylie's case to be the seat of tuberculous disease.—Dr. D. McKenzie was of opinion from the long persistence, the size, the extreme hardness, and the discrete character of the glandular masses that they were of the nature of lymphadenoma.

SOUTH-WEST LONDON MEDICAL SOCIETY.—A meeting of this society was held on March 13th, Dr. M. Mackintosh, the President, being in the chair. Dr. Herbert P. Hawkins gave an address on Constipation and Dilatation of the Colon with some results of treatment. After briefly detailing the salient features of the condition formerly known as idiopathic dilatation of the colon, Dr. Hawkins showed a typical example and demonstrated the presence of the chief signs. In this case, an infant, aged six months, whose grandfather had been under Dr. Hawkins's care for the same condition and who died from it at the age of 40 years, there was a history of constipation from birth, requiring active interference at the eighth day, alternating with diarrhoea. There had been no vomiting and there seemed to be no pain. The abdomen was distended and a large loop of distended colon ending in the left iliac fossa was well marked and showed peristaltic movements. On examination per rectum the bowel fitted on the finger like a glove and no superior opening could be felt, but a stiff tube could be passed upwards through which small quantities of liquid fecal matter had been drained away. Dr. Hawkins then showed lantern slides illustrating other cases and the anatomical and pathological features of the condition. He maintained that the adult form was of the same nature and origin as that of the child and was to be regarded as a rare and exceptionally long-lived instance of the congenital form. In no case was there an organic obstruction to be found; the dilatation and hypertrophy producing a funnel-shaped portion of colon, of which the lower end was usually in the pelvic colon, led to the supposition that the condition was due to a tight muscular contraction of the bowel in this position, or, what was an equally effective obstruction, paralysis of a segment of the bowel. Patients were, as a rule, in good health until the onset of a fatal toxæmia; it was essential that such cases should be recognised in an early stage, as operative interference might be, and had been, successful. The operation advised was short circumferential bowel to a point below the supposed obstruction; colotomy was not a desirable measure, and the removal of the dilated colon had on some occasions been followed by a fresh dilatation.

EDINBURGH OBSTETRICAL SOCIETY.—A meeting of this society was held on March 13th, Dr. J. W. Ballantyne, the President, being in the chair.—Sir J. Halliday Croome read a paper on Exophthalmic Goitre in its Relation to Gynecology and Obstetrics. He said that his personal experience led him to believe that there was no interdependence between Graves's disease and gross pelvic lesions. Disorders of menstruation were frequently associated with exophthalmic goitre, menorrhagia being the symptom when the disease was early and progressive, and amenorrhœa only when

from an anatomical and a surgical standpoint. Lecture I. is divided into two parts, (1) The Temporal Bone at Birth; and (2) The Surgical Anatomy of the Labyrinth. Under the first heading the bone as a whole, as it appears at birth, is minutely described and subsequently the middle-ear tract and the consistence of the outer antral wall are dealt with. The author points out the paths by which infection may pass from the middle ear to the meninges and also explains why sinus thrombosis is so rare at this time of life. In discussing the surgical anatomy of the labyrinth the operative treatment of Ménière's disease is referred to and the writer takes the hopeful view that in the future sufferers from this disease will receive relief at the hands of the surgeon. In Lecture II. the changes that occur in the bone during growth are set forth at length and amongst other things the reason of the comparatively late development of the mastoid process is explained. Then follow three most instructive chapters on the relation of the lateral sinus to the surface, the consistence of the outer antral wall and mastoid process, and the variations in the middle ear and antrum. From the surgeon's point of view these chapters are quite the best in the book and the illustrations, reproduced from photographs, are beyond criticism. The third lecture is devoted to the surgical anatomy of the structures met with in the performance of the radical mastoid operation. It contains much useful and valuable information relating to guides to the antrum, precautions in opening the antrum, and the relations of the facial nerve in the adult. A brief but concise account of Wallace's and Parry's operations for division of the auditory nerve brings the chapter to a successful termination. The book is profusely illustrated by photographs of the specimens shown at the Hunterian lectures and should prove of great value to the anatomist and to the surgeon.

LIBRARY TABLE.

War with Disease. By FREDERICK F. MACCABE, M.B.Dub., Medical Officer, South of Ireland Imperial Yeomanry. Second edition. London: Baillière, Tindall, and Cox. 1907. Pp. 125. Price 1s. net.—The second edition of this book, which is dedicated, by permission, to Field-Marshal H.R.H. the Duke of Connaught, has, the author says, been demanded much sooner than he had dared to anticipate and he adds that he is indebted for the demand to two factors: first, that a few regiments have ordered a large number of copies for distribution amongst the men of the regiment; and secondly, to favourable notices in the press. He has included in this edition a special lecture on "Health and Fitness," which he delivered to the recruits of the cavalry regiments stationed in Ireland during the year. Since Dr. Maccabe first delivered the lectures contained in this little book he has repeated them to the officers of the Staff College in Camberley. For this audience he went a little more deeply into the scientific reasons for the suggestions made. He has now amplified these parts and has reproduced the lectures as he delivered them at the Staff College. He has added as a second part of this book the introductory lectures which he gave to his ambulance section, in the hope that medical officers of both Yeomanry and Volunteer regiments may adopt the idea of making their ambulance classes of greater use to the regiment and to the public generally than mere renderers of first aid can ever hope to be. Dr. Maccabe has certainly made his chapter on anatomy most interesting and as he says "alive," but we venture to think that he must be joking when he writes that "my South of Ireland Yeomanry class knew their anatomy at the close of the course as well as the average medical student." In commenting on the extracts from Surgeon-General Havard's Report on the Russian Camps in

Manchuria, the author selects three special points: First, the use of soup in camp and on the march, for, as he says, "Hard-working men must have liquid in some form or other. It is to be hoped that in all manœuvres in future the rash will be for the soup-cart and not for the too-often poisoned water-cart." The second point he dwells on is the use of hot, to say nothing of vapour, baths at the front. As his third point he asks medical officers to use their influence to get the hard, indigestible, and very constipating ration biscuit abolished in favour of brown bread, as the Russians have done with such good results. We consider the book to be a valuable one. Each page is well written and the different subjects are presented with a pleasing freshness.

Dissections Illustrated. By C. GORDON BRODIE, F.R.O.S. Eng. With plates drawn and lithographed by PERCY HIGLEY. In 73 coloured plates and 37 diagrams. Second edition, revised. London: Whittaker and Co. Price 25s. net.—Gordon Brodie's "Dissections Illustrated" is an atlas already familiar to many medical men; to those not acquainted with it its nature may best be indicated by saying that the lithographic plates of which it consists closely follow in appearance, colouring, and range the well-known plates of Professor G. V. Ellis but are on a reduced scale. Most of the drawings are from original dissections by the author. In form the atlas is handy and portable and the illustrations convey a very good idea of the head, the neck, and the limbs as seen in ordinary dissections. In comparison with certain atlases of more recent date the illustrations of the thorax and abdomen leave very much to be desired. The central nervous system and the joints and bones are not illustrated at all.

Traité des Variations des Os de la Face de l'Homme et de leur Signification au Point de Vue de l'Anthropologie Zoologique. (Treatise on the Variations of the Bones of the Face in Man and their Signification from the Point of View of Comparative Anthropology.) By Dr. A. F. LE DOUBLE, Professor of Anatomy at the School of Medicine of Tours. Paris: Vigot Frères. 1906. Pp. xx. + 471. Price 25 francs.—The results of an immense amount of painstaking investigation and of wide reading are embodied by Professor le Double in this monograph. The exhaustive way in which the subject is treated will be appreciated when it is realised that a bulky volume of over 450 pages is devoted to the variations and abnormalities of the bones of the face alone. The descriptions are minute and exhaustive; many tables of measurements are given, collected from various sources, and numerous illustrations in the text add to the value of the work. The bearing of the facts of comparative anatomy on the variations met with is discussed at length in every case. There is included a short appendix to a former treatise by the same author on the variations of the bones of the cranium in man. The book is provided with full indices, and to those interested in the subject will prove a veritable mine of information. The author claims, and we believe correctly, that it is the only work of the kind which at present exists.

Hygromedry. By HENRY EMERSON WETHERILL, M.D. Philadelphia: Published by the Author (Press of W. Ellis Johnson and Co.). Fourth edition. 1906. Pp. 82. Price \$2.50.—The new word in the title of Dr. Wetherill's book denotes what he elsewhere calls medical hygrometry, or the quantitative estimation of the water vapour given off from limited areas of the skin. He uses two instruments for this purpose. One of them, called the hygromed or medical hygroscope, is a small shallow circular box of aluminium, with eight holes in the bottom. It has a transparent celluloid top and contains a graduated scale over which a pointer is moved by the contraction and elongation of a hygrosopic membrane. The perforated portion of the instrument is placed over the area of skin to be tested and the water vapour entering the box moves the pointer

mark the extreme limit of the receding movement which was observable in serious crime during the last quarter of the nineteenth century; the first years of the present century have shown an opposite tendency, though the increase in crime is so far relatively slight. The movement of crime taken as a whole is, however, of very little real significance to the social observer; to judge of its meaning it is necessary to discriminate between the various forms of delinquency, as we can in some measure do by means of the legal classification of offences, though of course their correspondence with psychological and ethical divisions is very imperfect. When we look at the matter from this point of view we find that the increase in serious crime is confined to offences of acquisitiveness, while crimes of violence and of lust have, on the contrary, diminished in frequency. The enormous numerical preponderance of crimes of acquisitiveness—they constitute nearly nine-tenths of the total amount of indictable crime—makes their oscillation decisive of the general movement. For the most part offences of this class are dependent on economic conditions and vary inversely with the prosperity of the country. The editor has brought out this relationship very strikingly in a diagram showing the number of receiving orders in bankruptcy and the number of persons tried for larcenies per 100,000 of the population in each year from 1885 to 1905; the remarkable likeness between the two curves is strongly suggestive of a connexion between this mode of delinquency and the prevalent state of trade. The other varieties of crime are, of course, much less immediately related to economic conditions and are, moreover, very often influenced by such conditions in a quite different way, so that it is nowise surprising to find that very frequently, as was the case in 1905, their movement does not coincide with that of crimes of acquisitiveness. Of the more purely impulsive disorders of conduct attempts to commit suicide also showed an increase in frequency, the number of such attempts in 1905 being 2342, the highest figure yet recorded. In this connexion it may be remarked that actual suicide also increased, the number of deaths under that head being 3515, as against 3327 in 1904. The slight check to the upward movement in these two manifestations of suicidal impulse, which was apparent in 1904, has not, therefore, been maintained.

Non-indictable offences, which include a large number of acts and omissions that are only criminal in a technical sense, are of relatively small value as indications of the moral health of the community. It is worth noting, however, as a confirmation of the inferences drawn from the statistics of indictable crimes, that assaults, wilful damage to property, and cruelty to children, which are probably allied to the more serious crimes of violence, have, like these latter, decreased in frequency; the number of prosecutions for assault in 1905 (52,811) is, indeed, the smallest on record. There has also been a considerable fall in the prosecutions for drunkenness, which numbered 219,276, as against 227,403 in 1904. Whether owing to a real growth in vagrancy, or as a result merely of increased activity on the part of the police, stimulated by the greater interest which has been taken in the question recently, there has been a decided rise in the number of convictions for begging and sleeping out, the total for the year (27,496) being the largest yet recorded. From an analysis of the figures it appears that the large majority (over 90 per cent.) of offenders of this class are men, and that nearly half of them are between 21 and 40 years of age. The editor suggests that the striking predominance of males in the tramp class would go to prove that scarcity of employment cannot be a very important factor in causing vagrancy; but against this we have to remember that prostitution is available as an alternative for women. The growing complexity of social life leads, of course, to the creation of many new crimes, so that in certain classes of

non-indictable offences the figures show an increase. An interesting illustration of this point is to be seen in the prosecutions in relation to motor-cars which, in 1905, were nearly twice as numerous as in the preceding year.

The number of criminal lunatics received during the year was 196, which is considerably below the average. Of this number 114 were certified after conviction, while 15 were certified before trial, 28 were found insane on arraignment, and 39 were found "guilty but insane." As in previous years, there is a striking difference between the more serious crimes of violence and the other classes of delinquency, with respect to the time when the existence of insanity is ascertained, over 98 per cent. of insane homicidal offenders being certified at or before trial, while the corresponding proportion in non-homicidal crime is less than 25 per cent. This difference may be in part explained by the course which is sometimes taken of dismissing the criminal charge in minor offences by insane persons and certifying the culprit as a pauper lunatic; it is to be regretted that no statistical information is given as to the number of cases so dealt with and the character of the offences.

Of the matters discussed in detail by Sir J. Macdonell the statistics of homicide are specially interesting. Including under that term cases of murder and of manslaughter, he shows that these offences have decreased considerably within the last 20 years, the number per 100,000 of the population having fallen from 1.32 in 1886-90 to 0.84 in 1905. Homicide is, as a rule, a crime of men, the proportion of women amongst convicted murderers not being more than about 1 in 7. In Scotland and Ireland there is a similar predominance of males. Amongst the victims, on the other hand, women are in a majority of 3 to 2. With regard to age incidence, it is found that about 59 per cent. of the persons convicted are from 21 to 40 years old. A remarkable point is the frequency of a sexual tie between the murderer and his victim; thus, of 487 men sentenced to death since 1886, 124 had killed their wives and 115 their sweethearts or mistresses. Homicidal crime is met with chiefly in the lower order of the labouring population of seaports and manufacturing towns; it is rarely committed by habitual criminals. The generally impulsive character of the crime is shown in the frequent choice of such domestic weapons as chairs, choppers, pokers, and the like; poison is rarely used—in only about 6 per cent. of cases. More murders are committed on Saturday than on any other day of the week, while the lowest figure is found on Sunday. In about one-fifth of the cases the crime is committed between 10 P.M. and midnight, and in nearly half between 8 P.M. and 2 A.M.

On the questions of juvenile and female offenders, on recidivism, and on the characters of the criminality in certain large cities, Sir J. Macdonell also gives much interesting information which, however, hardly admits of summarising. The absence of data relative to the criminal individuality and the insufficiency of details on several points, such as the different varieties of recidivism, the sexual incidence in attempts to commit suicide, and so on, to which attention was drawn last year, must still qualify our praise of a volume which, even with these slight defects, can compare favourably with the criminal statistics of any European State.

The Surgical Anatomy of the Temporal Bone from Birth to Adult Life. By ARTHUR H. CHEATLE, F.R.C.S. Eng., Aural Surgeon to King's College Hospital and to King Edward VII.'s Hospital for Officers. London: J. & A. Churchill. 1907. Pp. 131. Price 5s. net.

This book is the outcome of the Hunterian lectures delivered by Mr. Cheatle at the Royal College of Surgeons of England in 1906 and, as might be expected, contains a very thorough and accurate description of the temporal bone both

from an anatomical and a surgical standpoint. Lecture I. is divided into two parts, (1) The Temporal Bone at Birth; and (2) The Surgical Anatomy of the Labyrinth. Under the first heading the bone as a whole, as it appears at birth, is minutely described and subsequently the middle-ear tract and the consistence of the outer antral wall are dealt with. The author points out the paths by which infection may pass from the middle ear to the meninges and also explains why sinus thrombosis is so rare at this time of life. In discussing the surgical anatomy of the labyrinth the operative treatment of Ménière's disease is referred to and the writer takes the hopeful view that in the future sufferers from this disease will receive relief at the hands of the surgeon. In Lecture II. the changes that occur in the bone during growth are set forth at length and amongst other things the reason of the comparatively late development of the mastoid process is explained. Then follow three most instructive chapters on the relation of the lateral sinus to the surface, the consistence of the outer antral wall and mastoid process, and the variations in the middle ear and antrum. From the surgeon's point of view these chapters are quite the best in the book and the illustrations, reproduced from photographs, are beyond criticism. The third lecture is devoted to the surgical anatomy of the structures met with in the performance of the radical mastoid operation. It contains much useful and valuable information relating to guides to the antrum, precautions in opening the antrum, and the relations of the facial nerve in the adult. A brief but concise account of Wallace's and Parry's operations for division of the auditory nerve brings the chapter to a successful termination. The book is profusely illustrated by photographs of the specimens shown at the Hunterian lectures and should prove of great value to the anatomist and to the surgeon.

LIBRARY TABLE.

War with Disease. By FREDERICK F. MACCABE, M.B.Dub., Medical Officer, South of Ireland Imperial Yeomanry. Second edition. London: Baillière, Tindall, and Cox. 1907. Pp. 125. Price 1s. net.—The second edition of this book, which is dedicated, by permission, to Field-Marshal H.R.H. the Duke of Connaught, has, the author says, been demanded much sooner than he had dared to anticipate and he adds that he is indebted for the demand to two factors: first, that a few regiments have ordered a large number of copies for distribution amongst the men of the regiment; and secondly, to favourable notices in the press. He has included in this edition a special lecture on "Health and Fitness," which he delivered to the recruits of the cavalry regiments stationed in Ireland during the year. Since Dr. Maccabe first delivered the lectures contained in this little book he has repeated them to the officers of the Staff College in Camberley. For this audience he went a little more deeply into the scientific reasons for the suggestions made. He has now amplified these parts and has reproduced the lectures as he delivered them at the Staff College. He has added as a second part of this book the introductory lectures which he gave to his ambulance section, in the hope that medical officers of both Yeomanry and Volunteer regiments may adopt the idea of making their ambulance classes of greater use to the regiment and to the public generally than mere renderers of first aid can ever hope to be. Dr. Maccabe has certainly made his chapter on anatomy most interesting and as he says "alive," but we venture to think that he must be joking when he writes that "my South of Ireland Yeomanry class knew their anatomy at the close of the course as well as the average medical student." In commenting on the extracts from Surgeon-General Hayward's Report on the Russian Camps in

Manchuria, the author selects three special points: First, the use of soup in camp and on the march, for, as he says, "Hard-working men must have liquid in some form or other. It is to be hoped that in all manoeuvres in future the rush will be for the soup-cart and not for the too-often poisoned water-cart." The second point he dwells on is the use of hot, to say nothing of vapour, baths at the front. As his third point he asks medical officers to use their influence to get the hard, indigestible, and very constipating ration biscuit abolished in favour of brown bread, as the Russians have done with such good results. We consider the book to be a valuable one. Each page is well written and the different subjects are presented with a pleasing freshness.

Dissections Illustrated. By O. GORDON BRODIE, F.R.C.S. Eng. With plates drawn and lithographed by PERCY HIGLEY. In 73 coloured plates and 37 diagrams. Second edition, revised. London: Whittaker and Co. Price 25s. net.—Gordon Brodie's "Dissections Illustrated" is an atlas already familiar to many medical men; to those not acquainted with it its nature may best be indicated by saying that the lithographic plates of which it consists closely follow in appearance, colouring, and range the well-known plates of Professor G. V. Ellis but are on a reduced scale. Most of the drawings are from original dissections by the author. In form the atlas is handy and portable and the illustrations convey a very good idea of the head, the neck, and the limbs as seen in ordinary dissections. In comparison with certain atlases of more recent date the illustrations of the thorax and abdomen leave very much to be desired. The central nervous system and the joints and bones are not illustrated at all.

Traité des Variations des Os de la Face de l'Homme et de leur Signification au Point de Vue de l'Anthropologie Zoologique. (Treatise on the Variations of the Bones of the Face in Man and their Signification from the Point of View of Comparative Anthropology.) By Dr. A. F. LE DOUBLE, Professor of Anatomy at the School of Medicine of Tours. Paris: Vigot Frères, 1906. Pp. xx.—471. Price 25 francs.—The results of an immense amount of painstaking investigation and of wide reading are embodied by Professor le Double in this monograph. The exhaustive way in which the subject is treated will be appreciated when it is realised that a bulky volume of over 450 pages is devoted to the variations and abnormalities of the bones of the face alone. The descriptions are minute and exhaustive; many tables of measurements are given, collected from various sources, and numerous illustrations in the text add to the value of the work. The bearing of the facts of comparative anatomy on the variations met with is discussed at length in every case. There is included a short appendix to a former treatise by the same author on the variations of the bones of the cranium in man. The book is provided with full indices, and to those interested in the subject will prove a veritable mine of information. The author claims, and we believe correctly, that it is the only work of the kind which at present exists.

Hygromedry. By HENRY EMERSON WETHERILL, M.D. Philadelphia: Published by the Author (Press of W. Ellis Johnson and Co.). Fourth edition. 1908. Pp. 82. Price \$2.50.—The new word in the title of Dr. Wetherill's book denotes what he elsewhere calls medical hygroscoy, or the quantitative estimation of the water vapour given off from limited areas of the skin. He uses two instruments for this purpose. One of them, called the hygromed or medical hygroscope, is a small shallow circular box of aluminium, with eight holes in the bottom. It has a transparent celluloid top and contains a graduated scale over which a pointer is moved by the contraction and elongation of a hygroscopic membrane. The perforated portion of the instrument is placed over the area of skin to be tested and the water vapour entering the box moves the pointer

to a position on the scale which is taken as marking the relative humidity. The other method consists in the use of filter paper which has been treated with cobalt chloride, a salt progressively varying in colour from pale pink when moist to blue when well dried. A piece of this prepared paper is placed on the skin under glass, and after ten minutes its hygrometric condition is estimated by comparison with a standard graduated scale of tints. Dr. Wetherill gives a variety of details with respect to the clinical use of these contrivances. He has found, for instance, that the moisture of the skin gradually decreases with the oncoming of uræmia and sufficient notice is thereby given for commencing treatment. He says that there seems to be a normal diurnal change in the moisture of the skin not entirely accounted for by the daily change of temperature. In one case mental (not muscular) fatigue was accompanied by an increase of moisture in the palms of the hands. Short descriptions of hygrometric apparatus suggested by other investigators, as well as an account of a simple form of centrifuge, will be found in Dr. Wetherill's pages.

A Second German Course for Science Students. By H. G. FIEDLER, Professor of German at the University of Birmingham, and F. E. SANDBACH, Lecturer in German at the University of Birmingham. London: Alexander Moring, Limited. 1906. Pp. 76. Price 2s. 6d.—This is a companion volume or supplement to a similar work by the same authors which was reviewed in THE LANCET of June 23rd, 1906, p. 1764. It is a collection of 24 typical extracts from articles published in recent numbers of well known German scientific periodicals; almost all of them deal with questions of chemistry and physics, but there is one on the technology of iron and steel and one on the analysis of graphic curves by the planimeter. The notes at the end of the book explain various German grammatical peculiarities and give some translations of unusual words. It is generally found that much practice is required before a foreigner can read a German author easily and still more practice before he can produce a readable and idiomatic translation in his own language. The present volume is an excellent introduction both to reading and translation. Roman characters are used throughout; in the reference to the combination ss (a single letter in German character) on p. 67 we should have liked to see some mention of the practice (happily rather uncommon) of transliterating it as sz, so that "dass" becomes "dasz" and "gross" becomes "grosz."

JOURNALS AND MAGAZINES.

The Biochemical Journal.—The February number of this journal contains, in addition to two papers of purely botanical interest, the following papers of physiological value:—1. The Extraction by Casein of Trypsin Adsorbed by Charcoal, by Mr. S. G. Hedin. It is shown that casein is capable of extracting trypsin adsorbed by charcoal. This gives strong support to the view that the proteins combine with trypsin before they are broken up by the latter. 2. The Diastatic Ferment in the Tissues in Diabetes Mellitus, by Dr. F. A. Bainbridge and Dr. A. P. Beddard. Experimental evidence is given of the presence of a diastatic ferment in the liver and muscles of diabetic patients. In two cases a diastatic ferment was found in the blood and in two others it was absent. 3. An Improved Method for the Determination of Sugar in Blood and other Tissues, by Mr. E. S. Edie and Mr. D. Spence. The method consists in defibrinating the blood with aseptic precautions, dialysing with a measured quantity of 0.9 per cent. sodium chloride solution for about 45 hours in an ice-chamber, boiling the saline fluid, and adding an excess of Fehling's solution. The precipitated cuprous oxide is then washed, dried, ignited, and weighed as cupric oxide. By this method of determining the amount of sugar present

in blood evidence was obtained that the sugar exists in part as free sugar, in part in combination with protein or lecithin, the remainder being a polysaccharide or hydrolysible sugar. The serum alone contains sugar which was not found in the corpuscles. 4. A case of Specific Adsorption of Enzymes, by Mr. S. G. Hedin. It is shown that the α - and β -proteases in the spleen of the ox are adsorbed in the same proportions by charcoal, while kieselguhr adsorbs the α -protease more readily than the β -protease.

The Edinburgh Medical Journal.—The March number of this journal is of more than average interest. It opens with an address by Professor W. Osler on Cerebro-spinal Meningitis, in which some of the peculiarities of this disease are pointed out and reasons are given for deprecating any scare on the subject. The first Morison lecture (1907), by Dr. A. R. Urquhart, of which we have already published an abstract,¹ deals with insanity, with special reference to heredity and prognosis, and emphasises the dependence of mental states upon bodily conditions. Dr. F. H. A. Marshall and Dr. W. A. Jolly write on the influence of the ovary upon the uterus and conclude that the former gland supplies a "hormone" inducing menstruation and also some chemical substance necessary for the nourishment of the embryo in the early stages of pregnancy. Mr. B. G. A. Moynihan records some instructive cases of conditions in the large intestine simulating malignant disease.

The Scottish Medical and Surgical Journal.—Neurology is to the front in the original articles of the March number of this periodical. Dr. John Thomson and Dr. Stuart McDonald record two cases of meningococcal meningitis and suggest that attenuated meningococci may exist in the naso-pharynx of healthy children and be capable in certain circumstances of giving rise to virulent outbreaks. Dr. W. Elder and Dr. Nena Ievers give notes of five cases of the same disease in its epidemic form and state that some benefit seemed to be derived in two of these from injections of De Renzi's anti-pneumococcal serum. Mr. J. Hogarth Pringle writes on hæmorrhage from the sinuses of the dura mater and Mr. J. S. Fraser on perichondritis of the auricle following the radical mastoid operation.

The Quarterly Journal of Microscopical Science. Edited by E. RAY LANKESTER, F.R.S., with the cooperation of ADAM SEDGWICK, F.R.S., SYDNEY J. HICKSON, F.R.S., and E. A. MINCHIN, M.A. New Series, No. 201 (Vol. LI, Part 1), February, 1907. With lithographic plates and text figures. London: J. and A. Churchill. Price 10s. net.—The articles contained in this number of the journal are: 1. On the Parietal Sense Organs and Associated Structures in the New Zealand Lamprey (*Geotria Australis*), by Arthur Dendy, D.Sc., professor of zoology in King's College (University of London), with two plates. Dr. Dendy has had the opportunity of studying the anatomy of the brain of *geotria* in the "velasia" stage of development and describes with much minuteness of detail the pineal eye, or rather pineal eyes, for there is clear evidence of the existence of a pair, though differing greatly in histological characters and probably in function, the right pineal organ being either the most highly developed or the organ that has undergone least degeneration. This is a very interesting article and the illustrations are excellent. 2. Studies in Spicule Formation, by W. Woodland, demonstrator of zoology, King's College, London, Part 5, dealing with the scleroblastic development of the spicules in ophiuroidea and echinoidea and in the genera *antodon* and *synapta*. The article is illustrated by two plates. 3. In a second article, accompanied by a plate, Mr. Woodland describes the Scleroblastic Development of

the Spicules in some Mollusca and in one Genus of Colonial Ascidians. 4. In a third article Mr. Woodland enters into a preliminary consideration as to the possible factors concerned in the production of the various forms of spicules. 5. On *Neurosporidium Cephalodiscus n.g.n.sp.*, a Sporozoon from the Nervous System of *Cephalodiscus Nigricans*, by W. G. Ridewood, D.Sc., and H. B. Kantham, B.Sc., with two plates. 6. Gametogenesis and Fertilisation in *Nematus Ribesii*, by L. Doncaster, M.A., with a plate. 7. The Molluscan Radula, its Chemical Composition and Some Points in its Development, by Igerma B. J. Sollas, with a plate. 8. Observations on Tooth Development in *Ornithorhynchus*, by J. T. Wilson and J. P. Hill, with three plates.

New Inventions.

APPARATUS FOR ELEVATING THE HIPS IN BED.

Messrs. F. Davidson and Co., 29, Great Portland-street, London, W., have recently sent me a new apparatus for elevating the hips in bed which I feel sure will prove of the greatest value in all cases where the patient is very weak and helpless. I was in this condition myself about a year ago and one of the greatest troubles to me and to my nurses was the impossibility of preventing my slipping down the bed in consequence of the middle of the mattress under my hips sagging down to a lower level than that part of it under my shoulders. This trouble and discomfort I find is quite obviated by the use of the apparatus Messrs. Davidson and Co. have made for me. It consists of an oblong wooden frame, which is placed upon and across the bed. To that frame is attached another in such a

FIG. 1.

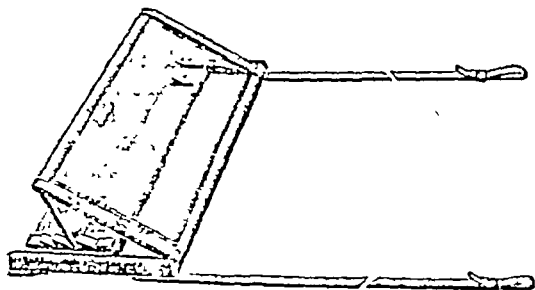
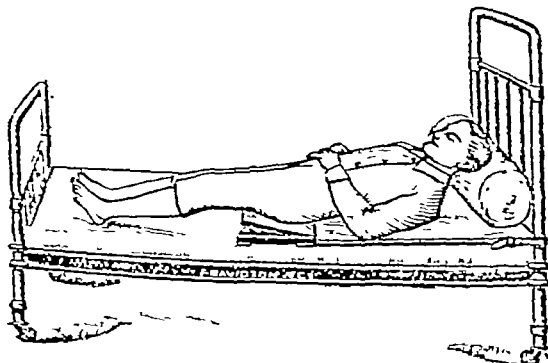


FIG. 2.



way that the side of it nearest the foot of the bed can be raised to any extent and there fixed. The space surrounded by this upper frame is filled in with spring wire, like that of a mattress, for the hips to rest upon. The lower frame has a strap and buckle upon each side, by which it can be attached to the upper posts of the bed which may often be found to require to be placed under the patient

so that one side of the upper frame comes just above the hips into the hollow of the back, the opposite one crossing under the raised thighs a little above the knees. (See Fig. 2.)
Tunbridge Wells.
EDWARD G. GILBERT, M.D. Durh.

A NEW ETHYL CHLORIDE INHALER. WITH IMPROVED ASEPTIC FACE-PIECE.

THERE are so many ethyl chloride inhalers that one hesitates before recommending another. Nevertheless, I believe there is still room for one, such as I suggest, which combines simplicity, efficiency, and reliability. As seen by the illustrations (Figs. 1 and 2) a tap which regulates the

FIG. 1.

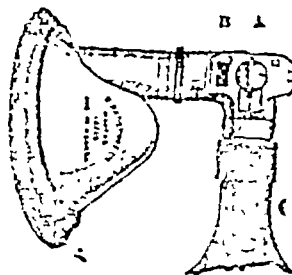
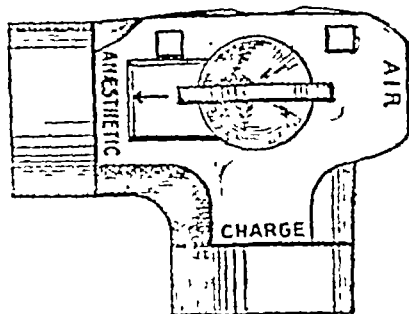


FIG. 2.



administration of the anæsthetic is introduced between the face-piece and the bag. To charge the bag the tap is turned so that the indicator points to "Charge" and the ethyl chloride is injected through a small hole in the tap indicated at A in Fig. 1. The tap is then turned to "Air," thus securing the ethyl in the bag until quite ready to begin. With the tap in this position the face-piece is applied and the patient breathes air only which enters through the inlet seen in the side of the tap B in Fig. 1. At the beginning of an inspiration the tap is turned so that the indicator points to "Anæsthetic," as seen in Fig. 2. This movement closes the air inlet and opens the communication between the face-piece and the bag. This inhaler is specially convenient when a few minutes' continuous anæsthesia may be necessary, for without disturbing the face-piece air can be admitted to the patient, the anæsthetic can be shut off, and the bag can be recharged. The aseptic advantage of the improved face-piece will be evident. The face-piece being connected at its upper end instead of at its centre protects the other parts of the anæsthetic apparatus from contamination in the event of the patient spitting, coughing, or being sick. When desired the apparatus can be fitted to a Clover's inhaler.

The inhaler and face-piece have been made for me by Messrs. Rauschke, Limited, surgical instrument makers, Leeds.

ALEXANDER D. SHARP, M.D. Brux., F.R.C.S. Edin.,
Honorary Surgeon, Nose and Throat Department,
Leeds Public Dispensary.

BRISTOL GENERAL HOSPITAL.—The following scholarships have been awarded as follows: Clarke surgical scholarship (£15) to Mr. J. F. Blackett; Sanders scholarship (£22) to Mr. J. F. Blackett; Martyn Memorial scholarship (£10) to Mr. V. B. Green-Armytage; Henry Marshall prize (£11) to Mr. J. W. J. Willcox; and Lady Habersfield prize (£27) to Mr. W. J. Veale.

THE LANCET.

LONDON: SATURDAY, MARCH 23, 1907.

The Security of Tenure and Annual Reports of Medical Officers of Health.

PUBLIC health legislation, whether under this or any other Government, is liable to prove a somewhat halting process and it is only when the harvest of death garners its sheaves in very high places that any enthusiasm for preventive medicine is manifested. But even such enthusiasm is prone easily to be damped when a powerful deputation representing the trusts or trades likely to be affected prejudicially threatens with opposition the Minister more immediately concerned with the measure in question. It is needless to furnish illustrations of this invertebrate condition; they are daily before our eyes. But the regrettable part of this state of affairs is that this molluscos attitude obtains even with regard to matters concerning which Royal commissions or departmental committees have made unanimous reports and recommendations. It is generally conceded that so long as medical officers of health hold their appointments subject to the caprice of the local authorities, so long will such officers hesitate to make recommendations and to write reports which are likely to give offence to butchers, farmers, dairymen, jerry builders, or others who may happen to be members of these local authorities. An officer appointed annually, triennially, or quinquennially is not unlikely to hesitate before he, in effect, serves a nuisance notice upon his chairman, and equally the sanitary inspector may find it convenient to avoid the slaughter-houses, cowsheds, or insanitary property of members of his district council. In existing circumstances the medical officer of health is fortunate if his council can be prevailed upon to appoint him without any reference to the duration of his appointment and with a moiety of his salary paid out of the county funds with the concurrence of the Local Government Board. In cases such as these the position of the officer is reasonably secure, as he can only be removed with the consent of the central health authority. So far there is not a very large number of such appointments but we are glad to see that the town council of Rochester has recently shown its appreciation of the services of its medical officer of health by reappointing him without specifying any time limit.

In cases where medical officers of health are in general practice and devote only a part of their time to their official duties there may sometimes be advantages in the compulsory union of districts and the appointment of a whole-time officer, and, as was pointed out some years since by Mr. CHARLES E. PAGET, the county medical officer of Northamptonshire, it would be well to improve the machinery for effecting such combinations. Probably, however, some fundamental change will have to be made

if the greatest use is to be made of medical officers of health; and some rather drastic alterations, more particularly as regards rural districts, have recently been proposed by a select committee of the House of Commons which was appointed to consider the Housing of the Working Classes Amendment Bill which was, we believe, largely promoted by Dr. MACNAMARA, the present Parliamentary Secretary of the Local Government Board. The Bill in question aimed at facilitating the housing of the working classes in rural districts but the recommendations of the select committee take a much wider view of the whole problem than was contemplated by the Bill and it is clear that if such recommendations are accepted a new Bill will be called for. The committee furnishes as an appendix to its report several of the reports of medical inspectors of the Local Government Board dealing with the unsatisfactory arrangements which at present obtain in rural districts for the appointment of medical officers of health and sanitary inspectors, and much importance is attached to these reports by the committee; indeed, it would appear that such reports have formed very largely the basis of the conclusions arrived at. Although there are some ambiguous points in the report in question there is much that is useful and as a whole the document is commendably vigorous and independent. In so far as the medical officers of health and their annual reports are concerned, the committee considers that the indifference of rural district councils towards sanitation and housing is reflected in the lack of zeal or activity on the part of the officers. The memorandum of the Local Government Board relative to the annual reports of medical officers of health is, in the view of the committee, too indefinite and it suggests that where such reports indicate slackness or apathy more satisfactory reports should be insisted upon. Certainly, some of the reports of medical officers of health are of a very meagre nature, no mention being made of existing defects or of pressing sanitary requirements and too much being made of the fact that the death-rate is a low one or that the place is well suited for a health resort.

As regards Part III. of the Housing of the Working Classes Acts, the committee is of opinion that sanitary powers cannot be intrusted to comparatively small local bodies some of the members of which may be owners of cottage property or builders or agents having a direct interest in putting restraint on the administration of the existing laws. Consequently, it is recommended that the administration of the Public Health and Housing of the Working Classes Acts should be transferred from rural district councils to county councils, leaving to the rural district councils concurrent powers to build under Part III. of the Housing of the Working Classes Act, 1890, subject to confirmation by the Local Government Board. It is further advised that the appointment of a county medical officer or officers of health should be compulsory and that proper qualifications for such officers should be prescribed and insisted upon by the Local Government Board, this Board also issuing a more precise memorandum of instructions as regards annual reports and requiring strict compliance with them. It is not quite clear from the report whether these recommendations refer to county medical officers alone or to all medical officers of health, and indeed there is

much in the report which indicates some confusion of thought on the part of those who are responsible for it. They do not, for instance, appear to have appreciated the fact that the duties of county medical officers of health have not hitherto been prescribed by the Local Government Board. This and certain other points of doubtful meaning are probably due to the fact that very few medical officers of health were called to give evidence and that those medical inspectors of the Local Government Board whose reports have evidently much influenced the committee's decision were not apparently invited to attend. But all these details fade into insignificance before the fact that the committee has grasped to the full the importance of security of tenure and the improvement and independence of the annual reports of medical officers of health, and the fact is, no doubt, recognised that improvement of the reports is largely dependent upon security of tenure.

Pyorrhœa Alveolaris.

THE Erasmus Willson lecture on Pyorrhœa Alveolaris recently delivered by Mr. KENNETH W. GOADBY is a valuable addition to the knowledge of that refractory disease of the teeth.¹ Although early loss of the teeth accompanied by an inflammatory condition of the gums has been recognised since the days of AMBROSE PARÉ, it is only within recent years that the disease has become so prevalent that the attention of the general body of medical practitioners has been drawn to its far-reaching and harmful effects. In the lecture Mr. GOADBY mainly devoted his attention to giving a *résumé* of the bacteriological researches which he has made during the last ten years and to drawing attention to the use of the vaccine treatment on the lines advocated by Sir A. E. WRIGHT. In all 90 cases of the disease were examined bacteriologically, in addition to the various conditions such as gingivitis, ulcerative stomatitis, and so on; from these investigations very little evidence was obtained of any one organism occurring with sufficient regularity to suggest its causal relationship with the disease. The chief fact brought out seems to be that a very large variety of organisms is found in the gums in ulcerative conditions and that the bacteria found in gingivitis and ulcerative stomatitis show a very curious similarity to those found in pyorrhœa. Mr. GOADBY gives a very detailed bacteriological analysis of 36 cases in which certain general symptoms were present and describes the cultural characters of the organisms isolated. In certain cases he isolated a lactose-fermenting bacillus and this organism would seem to have suggested to him that the infection in pyorrhœa alveolaris may come from contaminated milk. In referring to this point he remarks: "McCONKEY has shown that these lactose-fermenting bacteria are primarily of faecal origin and that they gained access to milk, from which they had been isolated by him in a large number of instances. In attempting, therefore, to discover the original source of infection in alveolar pyorrhœa the presence of these lactose fermenters naturally requires consideration. Further, cocci of both the staphylococcal varieties are often present in milk and may exhibit some degree of virulence. In the absence

of any other obvious source of infection it would seem highly probable that the organisms to which at any rate the general symptoms attendant upon suppuration along the alveolar margin and at the alveolar process itself are due may come from contaminated milk." Mr. GOADBY also refers to the points that pyorrhœa alveolaris is a frequent sequela of infectious disease during which the patient has for some time been upon a milk diet and that the disease frequently occurs in several members of the same family and would seem to consider these points evidence that milk may be the original source of infection. The idea is certainly a novel one but we must confess that his evidence hardly seems to justify his suggestion. In the treatment of the disease he seems to have had some measure of success with the injection of vaccine of the different organisms and he brings forward certain facts which are of more than passing interest. He states that in curetting of even two or three sockets of affected teeth an increase of constitutional symptoms often takes place, and he considers that delayed healing is common and frequent when multiple extraction has been performed in cases of general pyorrhœa and as a precaution thinks it is inadvisable to remove more than two or three teeth at a single sitting. Most practitioners would, we imagine, dissent from this view but it is remarkable how facts easily apparent are often overlooked and it is certainly a question well worthy of attention. With the current idea that removal of the affected teeth arrests the local tissue destruction and cures the disease he does not altogether agree, and he cites a case where even after the removal of the teeth the patient lost weight, the opsonic index at the time of extraction being 0.6 and 0.5 respectively to the staphylococcus aureus and the mouth staphylococcus albus. At the end of one year the opsonic index was the same but as the result of inoculation during six months she gained 2 stones in weight, the index rose to 1.1, and chronic rheumatism from which she had suffered almost entirely disappeared. It would certainly appear that vaccine treatment may prove of some value but much more evidence and experience are necessary before anything like a definite opinion can be given. In reading through the paper we cannot help feeling that valuable a contribution as it is to the bacteriology and treatment of advanced conditions of alveolar destruction it sheds but little light upon the more important question of etiology. Why is the disease so prevalent at the present day? What are its true causes? These are the questions to be settled. The solution will probably be found by investigations carried on along lines quite other than the bacteriological.

The New French Lunacy Bill.

DURING the past half century the lunacy laws of most countries have undergone great changes. Nevertheless, up to the present time the French have adhered to the Act which came into force so long ago as June, 1838. When we consider the date of its enactment it may undoubtedly be looked upon as a very enlightened piece of legislation. But great changes have taken place since then and in most civilised countries the tendency has been more

¹ THE LANCET, March 9th, 1907, p. 633.

and more to protect the liberty of the subject; consequently in lunacy matters the public have long ago decided that they should be adequately protected against the risk of wrongful detention in an asylum. Bills have from time to time been considered by the French Senate or the Chamber of Deputies but for some reason or other they have all been abandoned. The law as it now stands permits a person to be sent to a lunatic asylum in two ways, (a) that which is known as the "placement volontaire," in which case the patient is detained under the order of a relative or friend, supported by one medical certificate; and (b) the "placement d'office," which is chiefly used in the case of violent or dangerous lunatics and is carried out on an order of a police commissary, a mayor or magistrate, supported by one medical certificate. Most persons will agree that such requirements are insufficient to insure the patient against hasty, if not wrongful, detention. Especial objection must be taken to the method known as "placement volontaire," for assuming that the person making the order directly or indirectly derives any benefit from the removal of his relative or friend to an asylum the certificate of one medical man can scarcely be regarded as sufficient guarantee that the case has been thoroughly considered, for it is possible that the physician may have been misled by false or exaggerated statements as to the conduct of the patient. It is true that in England to-day urgent private cases may be removed to a mental hospital under the order of a relative and one medical certificate but here it must be borne in mind that such an order only remains in force for seven days from its date, during which time further statutory papers have to be obtained, otherwise the patient must be at once liberated. In this country the methods of procedure vary according to whether the patient belongs to the private or pauper class, and by a pauper is meant any person who is unable to pay for treatment in private care, licensed house, mental hospital, or special paying wards in a borough or county asylum. The private patient can only be detained upon a reception order signed by a judicial authority, which order is granted upon the presentation of a petition and a statement which are signed whenever possible by a near relative and supported by two medical certificates.

In the case of pauper lunatics one certificate only is required, a justice of the peace making an order for detention after seeing the patient and being satisfied as to his insanity. Therefore in this country no person can be detained as a person of unsound mind unless his case has been considered by a judicial authority, whereas in France under the "placement volontaire" no such official consent is necessary. It is true that the director of any lunatic asylum, whether public or private, has within 24 hours of the patient being admitted to the establishment to furnish a certificate which is transmitted to the prefect stating that the patient is really insane, and 15 days later another certificate has to be furnished. In England the medical officer has to furnish to the Commissioners in Lunacy a medical certificate regarding the mental and bodily health of the patient not less than two clear days and not more than seven clear days after admission. This certificate is followed by another at

the expiration of one calendar month, and further the reception order has to be continued by means of certificates which have to be furnished at periodical intervals throughout the patient's residence under care, even if this extends to 40 or 50 years. In addition to these precautions patients are periodically visited by members of the Lunacy Commission, and in the case of private licensed houses in the country visits are also paid by justices of the peace who are specially appointed to make such inspections. In France a monthly official visit is paid by a member of the tribunal who is evidently an official without any special training and therefore cannot be looked upon as a competent judge as to whether a patient should be detained or granted his freedom.

If the new Bill which has recently passed the Chamber of Deputies becomes law the liberty of the subject will be more carefully protected. A judicial authority will have to be applied to before an order is made for detention in an asylum. The old medical certificate is replaced by a detailed medical report which has to be sent in to a magistrate, and this magistrate has the power of demanding an inquiry before the certificate takes effect. We think that it would be wiser both in the interests of the patient and the physician who certifies that in the case of private patients the law should require two medical certificates to be provided by independent medical men. This would insure the patient being seen by at least two physicians prior to his removal to an institution and in the event of any litigation for wrongful detention arising in the future there would be less likelihood of a verdict of negligence or malpractice being found. The certificate to be sent in at the end of 24 hours by the director of the asylum will be a much more detailed one than is the case at present and copies of it will be sent to both the procurator of the Republic of the district in which the asylum is situated and also to the corresponding official of the district whence the patient came. Fifteen days later another certificate has to be sent in to the same persons. It is not clear that either of these persons is capable of deciding the question as to whether a person is insane and a proper subject for detention in an asylum, and in any case such an authority cannot compare with our Lunacy Commission for competency. Finally, confinement in the asylum is not definitely decided upon until the president of the tribunal has agreed to it, after having thoroughly studied the different certificates which have been sent in. Further, if anybody lodges the smallest objection the president of the tribunal cannot come to a decision except after consulting with his court and having heard expert opinion. We do not believe that any such clauses will ever become law. Surely all this red tape cannot be required to protect the liberty of the subject and we further venture to think that such a law would be most prejudicial to the interests of the patient both from the curative and from the social standpoint, when we realise what publicity such inquiries must entail. The making of lunacy laws is always difficult but the day is past when legislators should give way to ignorant agitators. By all means let the person and the property of the insane be protected but let it also be borne in mind that there is another point of infinite importance, the recovery of the patient from his malady.

Thus in the endeavour to protect the patient neither should laws be made the working of which is vexatious to those who have the care of the insane, nor should they be so cumbersome as to prevent the possibility of early treatment.

Innotations.

"Me quki nimis."

THE DEATH OF M. BERTHELOT.

THE death of M. Berthelot, under painfully dramatic circumstances, following so closely upon that of M. Moissan creates a wide gap in the ranks of distinguished French chemists. The illness of his devoted wife had sorely affected the health of the great savant and the news of her sudden death proved to be such a shock to him that he never rallied and he entered the unknown practically in her company. M. and Madame Berthelot died in Paris on March 18th. Marcelin Pierre Eugène Berthelot was born in 1827 in Paris and was the son of a physician. His genius quickly showed itself in the early years of his education and his success in gaining a prize in an open competition on scientific subjects decided his career. At the age of 24 years he entered the Collège de France, in which he occupied the position of assistant to the lecturer on chemistry and thus his opportunities of gaining an insight into the teachings of chemical science widened. In spite of the number of great and fruitful investigations which he undertook with extraordinary energy and skill, he found time to serve the Government of his country. He was Minister of Public Instruction in 1885, four years after he had been elected a life senator, and in 1895 he was appointed Minister of Foreign Affairs. Berthelot's contributions to chemical science are known on account of their immense importance to the wide world over. He attacked the great problems of the constitution of matter with extraordinary energy and success. He laid the foundations of organic synthesis and was practically the founder of thermo-chemistry. Our knowledge of the chemical constitution of glycerine and the fats is largely due to Berthelot's keen insight and analytical acumen. He showed that the fats were natural glycerine ethers of various fatty acids. The outcome of these researches was a stimulus to the industry of glycerine making and the manufacture of stearine candles. The results of his beautiful investigations on this subject were embodied in a work entitled "*Sur les Combinaisons de la Glycérine avec les Acides*," a masterpiece of research which gained for him the admiration of the whole scientific world. In the same masterly manner he produced his comprehensive work, "*Chimie Organique fondée sur la Synthèse*" in 1880. In 1879 he published the fruits of his attack on thermo-chemical problems ("*Mécanique Chimique fondée sur la Thermo-chimie*"). Lastly, chemical literature was considerably enriched by the publication of his classical work "*Les Origines de l'Alchimie*." France and the whole scientific world have indeed lost a giant of research in the death of M. Berthelot; he has left a magnificent record of fruitful labour, he has gone before as a splendid example to those who are engaged in the earnest pursuit of the same momentous problems, and for years and years to come the results of his genius must shine forth.

THE IRISH UNIVERSITY QUESTION.

THE Irish University question bristles with as many points of dispute as does a sea urchin with prickles, and it is almost impossible to discuss it without entering upon regions of controversy where the medical man is an intruder. But

it is not difficult to see that the scheme of the late Chief Secretary cannot commend itself to scientific teachers and students. The scheme, it is understood, provides that Trinity College, Dublin, which is the university of Dublin, should be abolished and that a new university bearing the old name should be founded, including Trinity College; Queen's College, Cork; Queen's College, Belfast; and a new college for Roman Catholics in Dublin. Maynooth; Queen's College, Galway; and Magee College, Londonderry, were to be affiliated institutions. The present Royal University was also to be done away with and all its existing graduates were to be attached by Act of Parliament to the University of Dublin. This scheme, like most schemes which try to please everyone, pleases no one, so that the consolidation of forces aimed at by the scheme could be only consolidation in appearance. Trinity College is naturally unwilling to lose its ancient prestige and to become a mere college of a university created by Act of Parliament. The senate of the Royal University does not receive a death warrant with pleasure, the leaders of Roman Catholic opinion, both clerical and lay, condemn the scheme, and Lord Justice FitzGibbon in his refusal to accept it may be taken to express the opinion of a large section of non-Roman Catholics. Moreover, all the heads of the various colleges concerned object in the main, though here and there support is forthcoming. There is another scheme which finds some support—namely, that the University of Dublin should in future consist of two Colleges, Trinity College as at present, and the hypothetical New Roman Catholic College. But to this scheme both parties concerned object. The Roman Catholic hierarchy and many of the Roman Catholic laity are apparently willing to have their new College made an integral part of the existing Royal University. This is the scheme which was adopted in the minority report of the late Royal Commission and signed by Sir Edward Fry, Sir A. W. Rücker, and Mr. S. H. Butcher.

THE UNION OF THE LONDON MEDICAL SOCIETIES: THE POSITION OF THE MEDICAL SOCIETY OF LONDON.

As our readers know, the Medical Society of London has stood aloof from the combination of the London medical societies and reference was made to the matter by Mr. O. A. Ballance, the President of the Medical Society of London, in his speech at the recent festival dinner of the society. We regret that our necessarily brief note upon this dinner could not include fuller details of the speeches, but the following passage in Mr. Ballance's speech is of great interest at the present moment. "Perhaps it may be expected of me," said he, "that I should say something about the union of societies (of which many of us are members) which has recently taken place and which has been so much before us during the last two years. London is so vast that no one society and no union of societies can satisfy the whole wants of the profession. There must and ever will be many societies, but we the Medical Society of London wish the union of societies which has taken place a brilliant future and great prosperity. No one can doubt that union is a good thing and that it is better to pull together, rather than in isolation. I have already expressed the good wishes of the Medical Society to the union of societies. May I also express an earnest hope that we, the Medical Society of London, may be the recipients of the same kindly feelings, the same hearty sympathy, and the same friendly and generous acts from the union of societies as we have been accustomed to receive from each of the uniting societies before they became amalgamated into one great and powerful body. There are three societies of considerable antiquity in London which are all doing good work and whose membership is for the most part

made up of general practitioners. I refer to our own society, to the Hunterian Society, and the Harvelian Society. I should like to throw out the suggestion that in some way or other these societies might be affiliated together. They would still have to carry out their ordinary work separately and in different parts of London, but perhaps we might meet once a year altogether for some common object or purpose, and later perhaps we might become affiliated to the specialist and scientific societies which have united together and which will have their home in future at 20, Hanover-square." It will be seen that Mr. Ballance furnishes a reason for the absence of the Medical Society of London from the great coalition which has not been hitherto put forward—at least, we do not remember to have heard the argument before. We cannot help regretting, for our part, that this or other reasons prevailed with the Medical Society to the extent of preventing their adherence to the new amalgamation, but we are certain that all members of the new amalgamation, a large proportion of whom will rightly be general practitioners, will continue to wish good fortune to the Medical Society of London.

THE STANDARDISED SAUSAGE.

THE sausage is a common subject of jest since it is so often regarded as a convenient vehicle for materials which when undisguised certainly do not appeal to us as being suitable or even wholesome for the purposes of food. Whatever objectionable plan may have been practised in regard to the compounding of sausages in past times it seems probable now that on the whole sausages are made with wholesome ingredients, thanks to a careful system of inspection of our meat supplies. Though, however, the sausage may contain innocuous substances there can be little doubt that it affords opportunity for the perpetration of considerable fraud upon its patrons. This is not surprising when we find that there is absolutely no legal or authoritative definition of a sausage. The sausage that contains 90 per cent. of bread and 10 per cent. of meat is just as much a sausage as that which contains meat and bread in the inverse proportion. It is clearly, illogical and unfair to the purchaser that such should be the case. As a rule, the sausage is looked upon as supplying the place of meat and as a meaty and not farinaceous food, and doubtless it is bought with the idea that it supplies the same nutritious qualities as does meat itself. Moreover, the average price of sausages per pound is approximately that of the meat of which they are supposed to be made. When, therefore, the sausage contains, say, 75 per cent. of bread and the purchaser is charged from 8d. to 10d. or 1s. per pound for it, a very decided fraud is surely being perpetrated upon him. At all events, it will be agreed that bread is very dear which costs as much as 10d. or so per pound. Such a figure in point of fact represents about ten times as much as the value of bread at the present time. In our view this species of fraud is every whit as bad as putting a cheap substitute in butter or coffee and yet the practice continues unhindered and uncontrolled by any statute. Purchasers of the sausage are to be found largely amongst poor people and the fraud is practised probably for the most part in poor neighbourhoods. Generally speaking the tampering with the nourishing quality of food is bad enough but when the practice affects those who struggle most for a living, who find it hard to procure nourishing meals at all, it becomes monstrous. Surely it is time that the sausage should be standardised and that the selling of a commodity by that name should be an offence unless it is proved to contain a reasonable amount of meat. There is nothing to be said against a well-made sausage which is prepared with sound meat. On the

contrary, it affords a valuable, convenient, and appetising food, and that being so, the sausage should be standardised so as to prevent it from being loaded with a cheap substitute which is nearly always bread or broken and waste biscuits. We can see no difficulty about introducing such a desirable reform and abolishing a palpable fraud. The practice may not poison people but it certainly swindles them.

THE VIRTUES OF THE OLD APOTHECARIES.

THE medical profession is generally supposed to have been at a very low ebb in point of learning and disinterestedness during the middle years of the eighteenth century. It is instructive, therefore, to find an apothecary, who was also well known in literary circles in his day, taking up the cudgels in his colleagues' behalf. In his once much-admired work on the "Government of Children," published in 1753, James Nelson complains that, owing to the prevalent distrust of the medical profession, parents are unwilling to call in a practitioner when their children are ailing. The passage in which he defends the profession as a whole is curiously modern in tone and even in detail.

As for the calumnies, the sneers, and the misrepresentations of ignorant and designing people, such as apothecaries and physicians being in league together, and playing into one another's hands; the eleven-pence in the shilling; the cramming people with physic they do not want; and much more of the like nature; these are things that scarcely deserve any notice. I have now been full thirty years in the business; have seen and done far from an inconsiderable share; have attended with physicians of every rank, from those who first enter'd into practice up to those who have reach'd the summit; yet cannot charge either any single physician, or myself, with even an attempt to enter into an association to the prejudice of mankind. On the contrary, I have seen some who have laboured with disinterested zeal for their benefit; not merely because they could not have their fees, but because they would not take them. Were I cannot help observing how much the world is misled by appearances; because people see an apothecary with a good suit of cloaths on, they conclude he is above want; and because they see another in a chariot, they pronounce him rich; so too because a very few physicians make fortunes, they conclude that all the profession are wealthy. But how fallacious is all this! There is no profession, no trade in the kingdom, which we call genteel, that has so few rich men in it as the different branches of physic. Many a man in it, sensible that the world would have no opinion of his skill, if he appeared to disadvantage, keeps up a part with aching heart; many a chariot is in daily danger of breaking down; and many owe their stability more to their own parsimony, to their wives' portion, or some other fortunate event, than to the produce of their business.

SANITARY ADMINISTRATION IN PAIGNTON.

THE high standard of sanitation which some "health resorts" are accustomed to claim for themselves would not always be maintained were there not in each place a candid friend or an outspoken medical officer of health. Paignton enjoys the somewhat unusual position of possessing both in some degree. The candid friend tells us "that illness of various sorts seems to be epidemic" and alleges that cases of infectious illness are continually being heard of. Apparently, too, until quite recently illness and malaise were attributed to a sewer which leaked, and bathers encounter sewage near the shore under certain conditions of tide and wind. Isolation accommodation is said to be inadequate and owing to cases of enteric fever occupying the hospital cases of scarlet fever have to be left in their homes. Although it does not appear that the zymotic death-rate is a high one, a town such as this, with a population of some 9000, ought not to have such a prevalence of scarlet fever as is indicated by the notification returns, while as regards enteric fever its continued presence year by year is not a reassuring circumstance; nor ought a health resort of this character to have an infantile mortality of 125 per 1000 births. We are told also by a local critic that the water is unsafe to drink unless it is boiled but on the other hand it is alleged that such boiling is only called for in consequence of the hardness of the existing supply. Similarly the floating sewage is accounted for by the presence at times of the Channel fleet, the disposal of the

excrement of which is not under the control of the Paignton district council. As regards the disposal of refuse a destructor is said to be necessary—"urgently needed" are the words of the medical officer of health—while the action taken by the council in the matter of a new water scheme, which is to cost a large sum of money, is, the medical officer of health asserts, most unbusiness-like and attended with an air of mystery which he finds it difficult to understand. In his view the officials ought to know what is proposed to be done in the matter of water-supply to the various parts of the town. Then, again, the district councillors are apparently disregarding their own by-laws which provide that any road over 100 feet long must be 36 feet wide. The medical officer of health now tells us in his annual report that the district council is proposing to expend public money on making a road 600 feet long and 24 feet wide. Without additional knowledge we can express no further opinion than to endorse cordially the statement of the medical officer of health when he observes that "the work of your officials is difficult enough without its being possible for the public to turn upon us and say, your council itself does not carry out its own by-laws. If Paignton is to retain its good name as a first-class town this course of procedure must be stopped, or it will thereby bring self-government into disrespect and ridicule." In connexion with this statement and the attitude of medical officers of health generally we may draw attention to our leading article in the present issue on the security of tenure and annual reports of medical officers of health.

EARLY RUPTURE OF THE PREGNANT TUBE.

ON p. 805 of our present issue Dr. O. A. Scott Ridout has recorded a very interesting case of extra-uterine gestation which ruptured two days after the cessation of the last period. The patient, a young nullipara, had been married only two months previously and had been in excellent health, the only abnormal circumstance which she had noticed being that her last period had not continued for as many days as usual. On the morning of the second day after the cessation of this period she was seized with sudden collapse and the signs of internal hæmorrhage, and Dr. Ridout, on opening the abdomen, found an early tubal pregnancy situated in the isthmus of the left Fallopian tube which had ruptured into the abdominal cavity. The case is in many respects a typical example of the usual course pursued by this variety of tubal gestation. It is not unusual for a pregnancy in this portion of the tube to rupture within the first month of the date of conception and from the position of the ovum rupture of the tube is more common than tubal abortion, although tubal abortion in the majority of cases of tubal gestation is more frequently met with in the proportion of 4 to 1. Professor Taylor has pointed out that in many of these cases there is a condition of atrophy of the tubal wall and he is inclined to think that this is an important factor in causing the early rupture. Others have called attention to the same fact and whether it is associated with some atrophy of the tubal wall or not, at any rate most of the recorded cases of very early rupture are examples of isthmal pregnancies. One of the most remarkable cases of this kind is that recorded by Dr. Rumley Dawson,¹ in which on the fifteenth day from the certain date of insemination the tube ruptured. It is characteristic of such early cases that as a rule the tube ruptures without any apparent cause as happened in Dr. Ridout's case. Whether there is any atrophy present or not to explain the early rupture no doubt it is predisposed to by the fact that there is very little room for the development of the ovum in this portion of the tube and therefore

an early rupture of the gestation into the peritoneal cavity may naturally be expected. The large amount of bleeding which occurs when the minute size of the ovum is considered is astonishing. In the present case the small swelling found on opening the abdomen was only of the size of a hazel nut, and in a case recorded by Professor Howard Kelly in which the patient had not missed a period and bled to death, the swelling in the isthmal portion of the tube measured only one centimetre by two centimetres. In another case of the kind recorded by the same author in which the patient had gone two weeks over her time the little bluish mass in the tube measured only 1.5 centimetres in diameter, although two and a half litres of blood were removed from the abdominal cavity. The diagnosis of these dangerous cases is, as a rule, easy since there is no other condition except acute poisoning which will cause such dangerous symptoms of collapse in an otherwise healthy patient.

"SUNLESS MANCHESTER."

A CORRESPONDENT writes:—"Such is the heading of some communications to the Manchester papers respecting the gloomy overhanging pall of smoke so patiently tolerated by the long-suffering people, though it has a perpetually injurious influence on the life of both man and plant. This recognition of the evil springs up afresh from time to time and then after a while the 'smoke nuisance' seems to be forgotten again. Whether the recent revival of interest in the matter will lead to anything practical in the way of remedy cannot yet be told. Professor Weiss has spoken of the amount of light of which we are robbed by smoke and fog and of the difference found between the light in London and that at Torquay. 'It was like night as compared with day almost.' And as 'it [light] is an essential factor in the growth of plants everything must suffer in big towns like Manchester, not merely from fog, but under ordinary conditions.' Many years ago Mr. John Leigh, at that time medical officer of health of Manchester, drew attention to the sooty, tarry coating of the leaves of plants and to the choking of the stomata of the leaves in plants condemned to struggle for life in the Manchester of his day; and Professor Weiss says that the microscope shows each breathing pore to be filled with a little plug of black matter. But worse even than the diminution of light, due to the large quantity of carbon in suspension in the air, is the effect of the acid from the sulphur in the burnt coal, which, getting into the pores, attacks the tissue and causes the plant to shrivel up. A practical illustration of the presence of acid in the air can be obtained on any damp drizzly morning in the smarting of the eyes produced by the descending drops. Some ten or more years ago Dr. G. H. Bailey of the Victoria University made careful investigations as to the Manchester atmosphere and it is to some degree satisfactory that he does not think it is as bad now as it was then. The anti-smoke crusade was at first directed more against the various works in and around the town than to the grates and chimneys of private dwellings and at the time it was quite justifiable, for the numerous tall chimneys belched forth dense masses, rather than clouds, of black fuliginous smoke. Dr. Bailey thinks there is more enlightenment than there was among the city authorities, manufacturers, and others and that something has been done to improve the state of things and it must be acknowledged that black smoke from the tall chimneys is less in evidence than it used to be. It is now coming to be seen that 'the great trouble is from the miles and miles of small houses in such districts as Hulme,' from which the smoke does not get away but 'with a moist and heavy atmosphere it flows downwards.' Dr. Bailey found that some of the worst parts of Manchester for smoke at the ground level were the parts without factories,

¹ Transactions of the Obstetrical Society of London, vol. xi.

Professor E. Knecht has stated that one effect of smoke is not, perhaps, often considered—namely, the reduction of temperature. When travelling on the Continent he noticed in passing through one great manufacturing town an appreciable lowering of the temperature and that when they had passed beyond it there was a return of the warmth which they had experienced before. The absence of sunlight means also that its beneficial effects in the destruction of many pathological bacteria are also wanting, and though we cannot yet measure our loss in this respect, yet we know it must be great. Of the remedial measures Dr. Bailey would place careful stoking almost before the use of the various smoke-consuming contrivances which require constant intelligence in the using if their benefits are to be obtained. The cheapening of gas and its more extensive use for heating and cooking would also lessen visible smoke. That it might be cheapened when a profit of £50,000 goes to the relief of rates is evident, and this money would be more useful if devoted to lowering the price of gas for cooking and heating purposes and so lessening the production of smoke from private chimneys. Professor Weiss also suggests that the sanitary committee, in addition to the power of inspecting drains and closet fittings and of condemning the faulty ones, should, for the benefit of future tenants, have the power of compelling the builders to put in efficient grates. Mr. T. O. Horsfall has frequently drawn attention to the Arnott grate or stove as economical in the consumption of coal and effective in lessening the production of smoke. Unfortunately, however, it does not now seem to be made. At a meeting of the Manchester Association of Engineers held on March 9th the adoption of mechanical draughts in the firing of boilers was strongly advocated as securing the complete combustion of fuel and preventing the production of black smoke. One advantage would be welcomed by lovers of the picturesque as there would be no necessity for the erection of the lofty chimneys so disfiguring to the Lancashire landscape. Perhaps it may turn out that in the multitude of counsellors there may be safety and that some effective means may be devised for lessening the gloomy conditions under which the life of Manchester is carried on." We may point out that we have pleaded for such a desirable state of things in an annotation in THE LANCET of August 13th, 1904, under the heading of "The Passing of the Chimney."

THE DETECTION OF ACETONE IN THE URINE.

THE importance of a trustworthy test for acetone in urine is such that the improved modification of the sodium-nitroprusside reaction described in a note by Mr. Basil J. F. Jacksontaylor, published in another column, will be read with interest. Hitherto this test has depended upon the darkening which takes place on the addition of acetic acid to a solution of sodium nitroprusside, urine, and liquor potassæ. Mr. Jacksontaylor now suggests the substitution of strong ammonia for the liquor potassæ and the elimination of the use of acetic acid. Strong ammonia solution is accordingly added to a solution of sodium nitroprusside and urine. The strong ammonia solution if added carefully remains clear on the top of the fluid. "Should acetone be present, even in minute quantity, a well-marked and absolutely characteristic ring of magenta appears within from one to three minutes at the junction of the two fluids and gradually spreads upwards, pervading the whole of the ammonia solution if acetone is present in considerable amount." We have tried this test in THE LANCET Laboratory and find that it responds admirably. When carried out in the manner directed the test provides a simple and trustworthy method of diagnosing a urine containing acetone and is a decided advance on the tests hitherto employed. Strong ammonia solution keeps its place on the

top of the urine and the diffusion of purplish colour can readily be observed even when the amount of acetone present is small. We have received a pencil drawing showing the upward diffusion of the reaction but the test cannot be strikingly illustrated unless the drawing is coloured.

THE PAYMENT OF MEDICAL MEN UNDER THE MIDWIVES ACT.

At the last monthly meeting of the Rotherham corporation the following recommendation of the midwives committee was carried after considerable discussion:—

The committee recommend that the council agree to pay a fee of £1 1s. where a medical gentleman is called in, at the request of a midwife, in cases of flooding, convulsions, and rupture of the uterus upon the following terms and conditions—namely: These payments will be made contingent on a certificate and report being furnished by the medical attendant to the midwives' committee of facts within the knowledge of the medical practitioner which may appear to the authority necessary to the elucidation of the case. They will also be contingent on the carrying out by the medical practitioner at the earliest possible moment of any procedures arising out of the visit for which the sum of £1 1s. will be considered an inclusive charge. All cases, in fact, to be treated as cases of emergency by the medical practitioner called in. These payments will only be made in the foregoing circumstances where the income of the family does not exceed the following rate:—

Man and wife	...	...	...	21s. per week.
Parent or parents and 1 child	...	...	...	23s. "
Parent or parents and 2 children	...	...	...	25s. "
Parent or parents and 3 children	...	...	...	27s. "
Parent or parents and 4 children	...	...	...	29s. "
Parent or parents and 5 children	...	...	...	31s. 6d. "
Parent or parents and 6 children	...	...	...	33s. "
Parent or parents and 7 children	...	...	...	35s. "

The matter was brought before the corporation of Rotherham by the Rotherham and District Medical Guild and we congratulate the Guild, the borough, and Dr. Alfred Robinson, the medical officer of health, upon the decision. It is an obvious blot upon the Midwives Act that there is no provision for the payment of the medical services which in certain conditions it is compulsory upon the registered midwife to seek, and the corporation of Rotherham has made a progressive move in dealing with the point as it has done.

THE LOCAL GOVERNMENT BOARD AND PRECAUTIONS AGAINST CEREBRO-SPINAL FEVER.

As an outcome of the attention which is being given to epidemic cerebro-spinal meningitis and of the knowledge now obtained regarding the relation to this disease of Weichselbaum's meningococcus experimental work has lately been undertaken with a view to obtain a satisfactory serum for the prophylaxis or curative treatment of the disease. In particular a serum has been prepared by Professor W. Kolle from horses which have been rendered immune with cultures of the meningococcus. We are informed that the President of the Local Government Board has now authorised investigations to be made in the medical department of the Board with a view to ascertain whether the value of particular sera, especially for prophylactic purposes, can be determined by animal experiment, and whether any special mode of preparation is likely to increase the effectiveness of "anti-meningococcus" preparations of this kind. In view of threatened extensions of cerebro-spinal fever in the United Kingdom this inquiry is timely and the results obtained will be looked for with interest.

HISTOLOGY AND BACTERIOLOGY OF HUMAN AND BOVINE TUBERCULOSIS.

THE Royal Commission on Tuberculosis has just issued the first of the supplemental volumes which were promised in its second report. The volume in question is a report made to the Commission by Dr. Arthur Eastwood on comparative histological and bacteriological investigations of the relationship between human and bovine tuberculosis.¹ Dr. Eastwood

¹ London, Wyman and Sons, Fetter-lane; Edinburgh, Oliver and Boyd; Dublin, E. Ponsonby. Cd. 3378. Price 2s. 6d.

records and compares the nature of morbid processes set up experimentally by tubercle bacilli of human and bovine origin respectively, and also the cultural characters of bovine and human bacilli from a variety of different sources. The general result of his observations has led Dr. Eastwood, in reporting to the Commission, to emphasize the underlying unity of the morbid processes produced experimentally by infection with every variety of human and bovine tubercle bacillus. The Commission, in its second report, drew freely on Dr. Eastwood's observations, and the volume now issued illustrates the magnitude and thoroughness of the research which has been made into this aspect of the subject. We hope to revert later to some of the questions raised by this valuable report.

HEALTH STATISTICS OF THE PEABODY BUILDINGS.

THE forty-second annual report of the governors of the Peabody Donation Fund contains some most satisfactory statistics relating to the health condition during 1906 of the 19,737 residents of the buildings owned by the Trust. It is pointed out in the report that the birth-rate among the residents was equal to 30.5 per 1000, exceeding the general London rate by 3.8; that the death-rate did not exceed 12.5 per 1000 and was 3.2 below the mean rate in London; and that the rate of infant mortality was only 8.9 per 1000 births, against 133.0 in the whole of London. It appears that the buildings occupy nearly 33 acres in various parts of the metropolis and that the mean density of population on this area is equal to 603 persons per acre, or nearly ten times the mean density throughout London. The low death-rate of 12.5 per 1000, among a population with a mean density of 603 per acre, affords conclusive proof that a high proportion of persons to an acre is not necessarily dangerous to health. Tested by another standard it is clear that there is no overcrowding in the Peabody Buildings. The Census Commissioners in their report on the census in 1891 adopted as a standard of overcrowding any excess in ordinary tenements beyond two occupants per room. It appears from the Peabody report under notice that at the end of last year the governors of the trust had provided 12,323 rooms for the artisan and labouring poor of London, exclusive of bathrooms, laundries, and lavatories; as these rooms contained a population of 19,737 persons, the average number of persons per room did not exceed 1.6, well within the standard of overcrowding adopted by the Census Commissioners. The report states that the average weekly earnings of the head of each family in residence at the close of last year did not exceed £1 1s. 9d., showing that the residents are of a distinctly working-class character. That in a distinctly working-class population of nearly 20,000, for the most part residing in the north of London, the rate of infant mortality should be as low as 8.9 per 1000, affords striking testimony of the value of the Peabody Trust and should afford the greatest encouragement to those who are labouring to reduce the waste of infant life which is now the most unsatisfactory feature of English public health administration.

LESSONS IN THE MANAGEMENT OF INFANTS.

"I HAVE no hesitation in saying that in my opinion the proper time to teach girls about babies is from 10 to 13 years of age." These are the words of Mr. Benjamin Broadbent, the ex-mayor of Huddersfield, in his preface to a leaflet¹ by Mrs. Watson on the subject of the care of infants. This little publication of 12 pages has been prepared with a view to its being used in public elementary schools for the instruction of girls. It is written in the very

simplest language and contains quite enough information for the instruction of girls of this age. The first of the five lessons is devoted to the subject of baby's food, the second deals with the preparation of artificial foods, the third with washing and clothing, the fourth with sleep and fresh air, and the fifth with general hygienic rules, and the whole concludes with a list of questions which it is suggested should be put to the girls at the end of each lesson. In every respect this is an admirable little book, the advice given is quite sound, and the information is correct, while there is nothing in it to offend the most sensitive sense of delicacy, although, as Mr. Broadbent says, "it is a difficult matter to prepare girls for motherhood without endangering the freshness and sweetness of their innocence."

DISEASES OF THE URINARY ORGANS AT THE NECKER HOSPITAL.

A COMPLETE course of clinical demonstrations upon diseases of the urinary system will be held at the Necker Hospital, Paris, under Professor Albarran, commencing on April 18th. The course will last three months and will include about 60 lectures. The symptomatology and the diagnostic points of the various diseases will be lectured upon and illustrated by the exhibition of patients. Those attending the lectures will be given opportunities for the practical examination of patients as well as for instruction in the handling of cystoscopes and various other instruments used in the diagnosis and treatment of urinary disorders. Three lectures will be given per week in the Salle de la Terrasse, commencing at 2.30 P.M. During the first month those attending the courses will attend the consultations held every morning in the Salle de la Terrasse and during the two other months they will accompany Professor Albarran when he goes round the wards and at his demonstrations at the bedside. The number of those who can attend the class is limited. All information as to the conditions necessary to be observed for attending the classes can be obtained from Dr. Ertabischeff, chef de clinique of the Necker Hospital.

EIGHTH INTERNATIONAL CONFERENCE OF RED CROSS SOCIETIES.

WE understand, although no official information seems to have been given, that the Eighth International Conference of Red Cross Societies will be held in London from June 10th to 15th. We do not know who are responsible for the arrangements, but it has been said that their Majesties the King and Queen will receive the delegates at Windsor and amongst the entertainers will be the Marquis and Marchioness of Salisbury, Lord Rothschild, and others. It is believed that our guests will number about 200, and these will include some of the most distinguished men from all the continental States of Europe, America, Japan, &c. Several of these gentlemen will be accompanied by their wives and daughters. The Central British Red Cross Society has been dissolved and a new substitute is in course of organization. This is very much to be regretted, as we fear that the members of the older societies, many of which have existed for nearly 40 years, will change their opinion as to this being a practical nation. We once possessed a national society, but this has been swept away, and far more than a year attempts have been made to replace it, but hitherto without much result. The conference will afford an opportunity for us to learn something about the work in other countries, and we hope that a hall of sufficient space will be secured to enable some hundreds of persons interested in Red Cross work to attend the sittings of the congress and to learn something as to the manner in which it is regarded in other countries. This is

¹ Lessons on the Care of Infants, by Mrs. Watson. Copies may be obtained from Mr. B. Broadbent, Gateshead, Lindley, Huddersfield, at 1d. each, or 9d. per dozen.

a matter in which the whole Empire is concerned and the sooner the utmost publicity is given to the scope of the conference and the manner in which it is to be conducted the easier it will be to give satisfaction to our guests, not only socially but also in forwarding the objects for which they are coming to visit us. In connexion with the conference an exhibition of ambulance material is to be arranged and we should be glad to have some information as to this to place before our readers.

BILL FOR PASTEURISING ALL MILK SOLD IN NEW YORK CITY.

ACCORDING to the *New York Medical Record* of March 2nd a Bill providing for the pasteurisation of all milk sold in New York City has been introduced into the New York State Assembly. By the operation of the proposed measure the dealing in, and selling of, any milk in New York City which has not been pasteurised would bring upon the parties handling the milk imprisonment for not less than six months or a fine of £100 or both. It is provided by the Bill that the Commissioner of Health shall designate pasteurising stations at which every quart of milk taken into the city must be put through the process of pasteurisation and that the city must construct such stations. Following the process a stamp will be put upon the milk receptacle by the health authorities, whereupon the dairy and milk companies and any others whose milk has been subjected to the process may take their milk and deliver it. The Bill also makes provision for the confiscation and destruction of any milk found to be unpasteurised. Authority is also given for the appointment of a large number of additional milk inspectors. The Bill is very sweeping in its character and its introduction may be said to be due to the vigorous crusade in favour of pasteurising milk which has been carried on for some time by the lay journals of New York city.

EPIDEMIC CEREBRO-SPINAL FEVER.

CASES of cerebro-spinal fever continue to be reported from various localities, but there is no epidemic prevalence except in Glasgow and Belfast. On March 13th the medical officer of health of Chelsea reported to the borough council that a child in Ives-street, Chelsea, had been attacked by the disease and had been removed to a hospital. A fatal case has occurred at Little Corbey, midway between Brompton and Carlisle. Cases have also been reported at Tollesbury on the Essex coast, in Shropshire, and at Bolsover in Derbyshire. In Glasgow on March 15th there were 112 cases under observation as compared with 101 on March 8th; as mentioned in THE LANCET of March 16th, p. 763, the daily announcement of the cases notified and the deaths has been discontinued, but on March 18th the medical officer of health issued a statement showing that during the past fortnight there had been 93 cases and 55 deaths, as compared with 90 cases and 60 deaths in the preceding fortnight. There have been two fatal cases in Greenock, four in Kirkintilloch, one at Kilwinning, and one in the Olney district of Aberdeenshire. The Registrar-General's returns state that during February there were 140 deaths attributed to the disease in the eight principal towns of Scotland, being 66 more than in January. Of these 111 were registered in Glasgow, 13 in Edinburgh, 8 in Paisley, 5 in Leith, and 3 in Dundee. In Belfast the total number of cases notified up to the present time is 185, and there have been 104 deaths. In Dublin there has been no new case since March 6th; in all there have been 15 cases with 11 deaths, and on March 15th there were four patients under treatment.

THE Department of Public Health of Queensland, in a bulletin dated Feb. 2nd, states that 3 more cases

of plague have been notified since the date of the former bulletin, Jan. 26th. Case 16 was inadvertently omitted from the last bulletin and in proper sequence of cases from the New Farm area it should be numbered case 10a. The patient was a female, aged 14 years, coming from James-street, New Farm, and being a sister of patients Nos. 6 and 7 and a daughter of the patient No. 15. She was attacked on Jan. 25th with bubonic plague and is progressing favourably. The 3 cases admitted during the week—viz., 17, 18, and 19—were 3 males, aged respectively 49, 42, and 52 years. They were all attacked between Jan. 24th and 26th and were members of the cleansing gang working in the infected area. They were all employed in removing produce from Garnett's Store and probably contracted the disease from infected dust while engaged in cleansing. During the week two of the patients died. With regard to Port Douglas no further cases have occurred since the last bulletin. As regards the Mauritius a telegram from the Governor received at the Colonial Office on March 15th states that 1 case of plague was reported during the week ended March 14th, and there was 1 death from the disease.

H.R.H. Prince Christian, the Danish Minister, the Portuguese Minister, the Greek Minister, the Swedish Minister, the Archbishop of Canterbury, the Bishop of London, the Archbishop of Westminster, and the Chief Rabbi will support H.R.H. the Prince of Wales at a dinner, at which he has graciously consented to preside, to be held at the Hotel Cecil on May 14th in aid of the National Sanatorium for Workers Suffering from Tuberculosis. Mr. Alfred de Rothschild will kindly lend his hand for the occasion.

THE Queen has graciously intimated to the Lord Mayor that she will open "The Queen's Fête" in aid of cripple children at the Mansion House on Thursday, June 13th. Her Majesty has also consented to receive purses from children on the occasion in behalf of the fund.

THE King has been pleased to appoint Mr. William Henry Power, O.B., F.R.S., F.R.C.S., Medical Officer of the Local Government Board, to be chairman of the Royal Commission on Tuberculosis in the room of Sir Michael Foster, K.C.B., deceased.

THE Pirogoff Society of Russia is agitating for permission to call a pan-Russian congress of Russian medical men for May 8th next.

Dr. F. M. Sandwith has been elected lecturer in physics in Gresham College in succession to the late Dr. E. Symes-Thompson.

MILITARY MEDICAL VICTIMS TO THE PLAGUE IN CRONSTADT.—The *Novos Vremya* reports that on March 2nd Dr. Schreiber of the 11th Eastern Siberian Rifles attached to the Military Medical Academy, died from plague which he had contracted in the fort "Emperor Alexander I." at Cronstadt. His remains were incinerated and will be kept in an urn at the fort named. It has been found necessary to state that he was carefully nursed throughout his illness, the contrary having been reported in the press. Unfortunately, although it was hoped that the case was an isolated one, the information is now forthcoming that Dr. Podlevsky of the 3rd Caucasian Rifle Battalion, who was also attached to the Military Medical Academy and was engaged in the anti-plague serum laboratory in the fort named at Cronstadt, has been attacked by the same disease, presumably, says the above journal, whilst conducting the necropsy on the body of Dr. Schreiber. The latest intelligence from the fort is that Dr. Podlevsky is improving in health; his temperature was falling and he was fully conscious.

THE RÔLE OF THE BLOOD PLASMA IN DISEASE.

BY HARRY CAMPBELL, M.D., B.S. LOND., F.R.O.P. LOND.,
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V.¹

In the last section we arrived at the conclusion that with the exception of genuine senile change disease never sets up spontaneously in a normally evolved cell. Indeed, we may go further and say that when disease arises in a cell it is, except in the case of genuine senile decay, almost always the result of noxious cell environment.

It is necessary here to attach a precise meaning to the term "cell disease." It has to be remembered in this connexion that the vital activities of the component cells of the organism fall under two heads and we may call them the egotistic and the altruistic. The primary concern of every cell is egotistic, the maintenance, namely, of its own vigorous vitality. Its secondary and, as it were, accidental function, is the altruistic one of administering to the needs of the organism as a whole, whether by controlling and coördinating its activities (neurons), by elaborating ferments and hormones or eliminating poisons (gland cells), or by providing for massive movement (muscle cells). It is true that it is for the most part in the discharge of their normal altruistic functions that the cells find the conditions most suitable to their individual health; but not necessarily so, for it may happen—and I would lay particular stress on this fact—that a cell may fall altruistically and yet maintain a vigorous egotistic life. This may not be the case with such a simple function as muscular contraction; it is probable that failure here necessarily implies some serious affection of the muscle cells, but the altruistic functions of the nerve and gland cells are of a much more subtle nature, and one can well understand how a group of neurons forming, say, a vaso-motor centre, might fail in properly regulating the calibre of the vessels which they control, or how, again, glands, such as those of the stomach, of the pancreas, or of the adrenals, might fail in elaborating their ferments and hormones in appropriate quality and quantity; one can well understand, I say, how such nerve and gland cells might fail altruistically and yet, individually considered, maintain a healthy and vigorous vitality. Nay, the very vigour of a cell may constitute an altruistic defect, as when the adrenals yield an excess of adrenalin and thus cause secondary evils (including very possibly atheroma); or when the gastric glands secrete a superabundance of hydrochloric acid, and so give rise to dyspepsia and the many evils which follow in its train; or, again, when in the primipara the mammary glands become from excess of activity unduly turgid, and thus set up pain and general nervous disturbance.

It is manifest, then, that a cell may gravely fail in some altruistic function and yet, individually considered, be perfectly healthy; only when the cell becomes the seat of actual degeneration (discoverable or not) and thus fails in vital activity, can it be said actually to be diseased. And I repeat that, with the exception of primary senile decay of the cell, disease as thus understood, rarely, if ever, affects the cell spontaneously (i.e., independently of some noxious influence operating upon it), certainly never if it be normally evolved. But though disease seldom or never occurs spontaneously in the cell, it often arises spontaneously in the organism. This arises from the fact that though spontaneous cell disease is rare, spontaneous failure in altruistic cell function is unfortunately common enough, and such failure is inconsistent with the health of the organism,² interfering, as it does, with that harmonious interaction between the various parts of the body which is necessary to health. Should the disturbance thus resulting be unaccompanied by gross organic change, the cells still preserving their individual health, it is spoken of as "functional"; it may, however, go on to gross organic change, and there is then actual disease (degeneration) of the

individual cells.³ We thus see how organic disease, involving actual disease of individual cells, may spontaneously break out in the organism, not through the spontaneous occurrence of actual disease in cells, but through a failure in their altruistic function, and one, moreover, which is perfectly consistent with their individual health; and in point of fact spontaneous organic disease, when not due to primary senile cell degeneration, practically always occurs in this way.

Altruistic cell defects may arise from defect in the constitution of the zygote, or they may be acquired as the result of external influences operating upon the organism to which the zygote gives rise. Only in the former case can the disease resulting from them be said strictly to be spontaneous, for only then can the external environment be wholly exonerated from a share in causation. The condition of the zygote giving rise to altruistic cell defect may be of the nature of a "genetic variation," arising, that is, *de novo*, and in this case the resulting disease would be innate, but not inherited; or it may be hereditary when the resulting disease would not merely be innate but inherited.

It was pointed out in Section I. that the gland cells take precedence of all others in determining the composition of the plasma and the nature of the metabolism in general, a fact which prepares us for the conclusion that it is largely through the gland cells that disease is inherited. Many individuals are from the very beginning of their career defectively endowed in respect of the gastric, pancreatic, adrenal, and other glandular structures. The gland cells in question may be endowed with a vigorous vitality and, individually considered, be perfectly healthy, though defective in one or other of their altruistic functions, and such defects may lead to actual defects in the organism. Where, however, disease results from altruistic cell defect it may not be possible, owing to the close interdependence of the various cells in the body, to say whether that defect is inherent in the gland cells or whether it has been secondarily induced in them through defect, innate or acquired, of some other cells. Sometimes, however, it is manifestly induced. Thus, in Addison's disease the defect of the adrenal glands is often due to tuberculous infection—i.e., to an external agent in the shape of a specific micro-organism. Again, the changes which take place in the thyroid and parathyroid glands in exophthalmic goitre are of a kind most unlikely to occur spontaneously in the individual gland cells; we may, indeed, regard it as certain that they are due to some specific environmental influence brought to bear upon them, probably through altruistic cell defect in some other part of the organism, and in so far as this disease is hereditary it is apparently due, not to any inherited weakness in the thyroid or parathyroid gland cells, but to the inheritance of a defect elsewhere.

The defect in the pancreatic cells on which pancreatic diabetes depends, though it might conceivably be inherent in them from the beginning, is probably always induced, for not only does the pancreas in this disease often show gross organic changes which are clearly not spontaneous, but the disease often begins quite suddenly, and it is well-nigh inconceivable that a multitude of independent cells should at one and the same time fail from purely spontaneous causes. This view does not, however, preclude the possibility of an inherent susceptibility to damage on the part of the affected pancreatic cells. In such a disorder as hyperchlorhydria the case for inherent gland defect appears strong, the fault here consisting in excessive vigour in respect of one particular function—i.e., the secretion of hydrochloric acid.

Perhaps even more potent than the glandular system to set up secondary disease and to transmit inherited disease through altruistic failure of its constituent cells is the nervous system, and there are many reasons why it should be. Not only can the nervous system directly control the activities of the muscle and gland cells which are anatomically connected with its efferent nerves, but it can indirectly control the activities of all the cells in the body through its influence on the composition and circulation of the plasma. Another reason is the extreme structural complexity and delicate organisation of nervous tissue, by virtue of which it is not only more liable than other tissues to structural defect,

¹ Articles I., II., III., and IV. were published in THE LANCET of Feb. 2nd (p. 313), 9th (p. 375), and 23rd (p. 635), and March 16th (p. 754), respectively.

² I am supposing that a sufficient number of cells are involved in the failure, otherwise there would be no appreciable effect upon the health

³ In a former section I spoke of disease as always involving some degree of cell dissolution, even though it is frequently so slight as to be undetectable. This referred to disease of the cell. It is, however, possible—theoretically at least—to get a functional disease of the organism, one involving simply a want of harmony in its activities, without any necessary cell dissolution. In most functional diseases, however, there is some undetectable cell dissolution.

but also more impressionable and more vulnerable. The degree of this structural complexity will be the better realised when it is remembered that the individual neurons are of all cells the most highly organised, and further, that the mutual arrangement of contiguous neurons is much more complicated than is that of the constituent cells of other tissues. In the case of such tissues as the muscular and the glandular this relationship is a matter of comparative indifference; contraction and secretion can be carried on quite satisfactorily by each muscle and gland cell independently of its relation to neighbouring muscle and gland cells. In the case of nerve centres, on the other hand, the mutual arrangement of individual neurons is a matter of the highest importance, since it is largely in virtue of the complex inter-relationship of its constituent neurons that the nervous system is able to carry on its controlling and coördinating functions, and it is chiefly also by reason of it that nervous tissue so greatly transcends all others in structural complexity.

The above considerations lead us to infer that many diseases usually regarded as wholly non-nervous in origin actually originate in the nervous system. Such a disease as idiopathic granular kidney affords a possible case in point: the renal degeneration in this affection is certainly brought about through the plasma, and as we have seen that the composition of the plasma is greatly under the control of the nervous system, who knows but the particular plasmic defect on which this affection depends may be traceable to the nervous system? It has also to be borne in mind that defect in one part of the nervous system may be responsible for disturbance in another part of it, and when the characteristic symptoms of the disease are due to this secondary disturbance, the part thus secondarily disturbed may erroneously be regarded as the one primarily at fault. On the other hand, there can be no doubt that spontaneous nervous diseases often do not originate in the nervous system at all, but result from spontaneous altruistic defect in some non-nervous tissue, especially in those engaged in elaborating the plasma, such as the digestive and hormone-forming organs. It is probable that many forms of nervous diathesis originate in this way, the nervous system being perfectly normal to begin with. Consider, for instance, the different effects on the nervous system of a hyper- and a hypo-active thyroid gland: the one gives rise to a restless, nervous, katabolic temperament; the other to one that is sluggish, apathetic, and anabolic.

The foregoing considerations point to the conclusion that spontaneous disease is of two kinds: that in which the cells of the organism become spontaneously diseased (= degenerated) and that in which spontaneous failure in altruistic cell function sets up secondary disease; and further, that with the exception of primary senile cell degeneration, spontaneous disease nearly always arises in the latter way. Indeed, it is difficult to be sure whether non-senile cell disease ever breaks out spontaneously. The most probable instances of its occurrence are afforded by such diseases as Friedreich's disease and the idiopathic muscle palsies, but even in these we cannot be sure that the degenerations characteristic of them break out spontaneously in the affected cells, and that they are not secondarily induced. If they are spontaneous we must confound that the affected cells have from the beginning of their career been abnormal, but no evidence of such abnormality is at present forthcoming; so far as is at present known the cells which become affected remain up to a certain period perfectly normal; at all events they appear for a time to discharge their functions normally, and this is the only available test of their normality. It is, however, conceivable, that they are from the very beginning defectively endowed; one can conceive, e.g., that in the idiopathic muscular palsies the affected fibres are defective in ferment-forming capacity,⁴ and that at a certain stage of their career this defect suddenly becomes emphasised. But if even in the case of such nerve degenerations in which the case for primary spontaneous degeneration appears strongest, we cannot with certainty postulate a spontaneous degeneration of the neurons, what shall we say of the other degenerative affections of the nervous system? I think we may safely conclude that, with the exception of primary senile degeneration of the neurons, they are all secondarily induced, as the result of noxious environmental agencies operating for the most part through the plasma.

Hence in all cases where there is actual disease of the individual cells, be they gland cells, muscle cells, neurons, or what not, we should suspect the operation on them of some noxious influence. This may be either plasmic or non-plasmic, the former playing much the larger part.

Constitutional disease.—When in a disease the blood plasma is disordered and this plasmic affection gives rise to any of the essential phenomena of the disease, we speak of it as a constitutional, or blood disease. In many cases of this kind—e.g., gout, tabes dorsalis, peripheral neuritis, the specific fevers, and all other recognisable bacterial disorders—we have no difficulty in recognising the disease as being essentially plasmic in nature; but if my conclusions as to the rarity of spontaneous cell disease be correct, and as to the wide rôle played by the plasma in inducing cell disease, it is obvious that there must be many diseases belonging to this category in which the plasmic origin is overlooked. Some of these I now propose to consider—namely, paralysis agitans, granular kidney, Graves's disease, myxedema, Addison's disease, acromegaly, diabetes, and insanity.

Paralysis agitans is generally looked upon as a primary affection of the nervous system. Although no definite nervous degeneration is found in association with this disease it is impossible to doubt that the nervous system is profoundly affected in it; and, indeed, no one can observe a series of these cases without convincing himself that he is dealing with a constitutional affection involving not only the nervous system but other tissues as well, and that all the essential phenomena of the disease are plasmically induced. Paralysis agitans is, in fact, a generalised symmetrical affection of a kind which could only be produced through the plasma. It is true that the characteristic tremor often begins hemiplegically, but this is only one among many symptoms of the disease, and even more constant than the tremor, and always in my experience antedating it, is the muscular rigidity, which is always symmetrical. Now are we to suppose that each of the countless cells, nervous and non-nervous, which are disordered in this disease, spontaneously and synchronously takes on morbid action? Or are we to suppose that a common noxious influence is brought to bear upon them, forcing them to disordered action? Surely the latter is the correct assumption. Now there is only one medium through which this common influence can act—i.e., the plasma.

I recently saw a case which is interesting in this connexion. The patient was said to be suffering from a nervous disease which had been variously diagnosed by various physicians. After her medical attendant had given me a brief description of the case I said to him, "I do not expect to be able to give the disease a name, but I have little doubt from what you have told me that it is essentially a plasmic disease, one in which the plasma is profoundly affected." The patient was a woman, aged about 50 years. She was sitting in the middle of a drawing-room, propped up in an invalid's chair. She did not stir as I entered the room but continued to gaze steadily in front of her; nor did she once turn her face when she spoke, and all her conversation was in slow measured tones. She was anæmic and emaciated and displayed considerable rigidity in the muscles of the neck and trunk and some also in the legs. She complained of pain in several joints, some of which were swollen, and of shooting pains in her extremities, with numbness and anesthesia in her hands and feet. There was no tremor. What was the diagnosis? I said to the medical attendant: "It is, as I anticipated, useless to attempt to give any one name to this disease. The central fact to bear in mind is that it is a plasmic disease. The blood is in a very bad way, for not only is it impoverished, as shown by the marked anæmia and emaciation, but poisoned, and probably also defective in respect of its hormonal constituents; we have in consequence to deal with a symptom-complex which may be described as a blend of several diseases in atypical form—to wit, hysteria, peripheral neuritis, rheumatoid arthritis, and paralysis agitans." The patient had, in point of fact, all these diseases. Now I venture to think that it would be impossible to grasp the real significance of such a case as this were the part played by the blood plasma in disease not kept clearly in view. And in connexion with this case I would recall the remark made in a previous section as to the utter impossibility of giving a special name to every case of disease which comes before us. In the case in question the plasma was defective in divers ways, and, as so frequently happens, the patient was afflicted with an illness which was a complex of many disorders.

⁴ I refer here to those muscle ferments which are needful to the normal nutrition of the muscle bio-plasma.

Here I would point out that it must not be supposed that because in any disease, nervous or other, the parts are not affected symmetrically the disease is not therefore of plasmic origin. It is true that all plasmically induced diseases, be they functional or organic, tend to be symmetrical, the plasmic poisons—when there is toxæmia—picking out the corresponding cells on each half of the body, but there is never complete symmetry; sometimes, indeed, there is decided asymmetry. This may be partly explained by the fact that the poison is not equally distributed to all parts of the body, but probably better by the fact that corresponding parts on the two sides are not necessarily identical in structure. I have myself seen uramic convulsions confined to one side of the body, and it is well known that the tremor of paralysis agitans, which (as I have sought to show) is a plasmic disease, generally starts hemiplegically, while differences in the involvement of the two sides of the body can practically always be made out in such unmistakably plasmically induced diseases as tabes dorsalis and peripheral neuritis. We must not, therefore, assume that because a disease is not strictly symmetrical it is not of plasmic origin. Not only may the two sides of the body not be symmetrically affected, but among a group of similar cells on one side some may be affected more than others: in progressive muscular atrophy, e.g., some of the neurons belonging to one particular muscle hold out much longer than others; indeed, of two adjacent neurons one may be apparently intact when the other is destroyed; in acute yellow atrophy, again, apparently healthy liver cells may be mixed up with the debris of dead ones, while even in advanced granular kidney some of the renal epithelia seem to be wholly unaffected.

Granular kidney affords an admirable instance of a disease in which the essential lesion (i.e., renal degeneration) and the chief clinical manifestations are produced through the plasma. There are no grounds for assuming that the renal degeneration which occurs in this disease is spontaneous. When the disease is caused by gout or lead poisoning it is acknowledged by all that the renal change is plasmically induced, and one would expect this also to be the case when it occurs idiopathically, as it may do, in those living under perfectly healthy conditions, and that, too, quite early in life. It is at least highly improbable that multitudes of independent renal cells should spontaneously begin to degenerate in exactly the same way at one and the same time; much more likely is it that even in these so-called idiopathic cases some noxious influence is at work on the renal cells. This influence must be either nervous or plasmic, and as there is no evidence that the characteristic renal changes can be brought about by the direct action of the nervous system, we must assume that they are produced through the plasma. Apparently the blood in this disease contains a substance which is destructive to the renal epithelium; we must assume that this nephrolysin results from some chronic metabolic disturbance in some tissue or tissues unknown, and that in this way the plasma is furnished with a constant supply of the poison, for granular kidney is always progressive—once started it continues with such fatal persistence to the end.

Just as the renal changes of granular kidney are plasmically induced, so also are the general manifestations of the disease—e.g., the high blood pressure, the cardio-vascular changes, the tendency to inflammations, and the not infrequent anæmia and cutaneous pigmentation. How far these effects are due to the primary plasmic defect which is responsible for the renal degeneration, how far to the retention in the blood of effete products consequent upon that degeneration, or how far to the absorption into it of broken-down renal epithelium, which is known to be capable of sending up the blood pressure,* we cannot say. One thing is, however, certain—i.e., that all the essential phenomena of the disease are produced through the blood plasma. It seems very doubtful whether failure in the excretory functions of the kidneys enters into the causation of the disease at all, except during the later stages, inasmuch as all its characteristic phenomena are observed long before the kidneys begin to show signs of failure.

As I have already hinted, aberrations of hormonal function probably figure largely in disease, though we as yet know but little concerning them. There are, however, certain well-defined diseases which can be more or less definitely traced

to disease in some hormone-producing tissue. Such are Graves's disease, myxœdema, Addison's disease, and acromegaly. In regard to myxœdema and Addison's disease, few will be prepared to deny a hormonal causation; there are some, however, who are less inclined to admit that the chief phenomena of Graves's disease are due to an altered state of the blood plasma consequent upon the faulty action of the thyroid or parathyroid glands; or, again, that the characteristic phenomena of acromegaly are secondary to disease of the pituitary body. But whatever view we may hold as to the exact pathology of these four diseases, there can be no doubt that their essential phenomena are produced through the plasma, inasmuch as there is no other medium capable of bringing them about. Myxœdema is now acknowledged by all to be a plasmic disease; but even if we had not practical evidence of the fact in the shape of a diseased or absent thyroid, and of the beneficial effect produced in this affection by administering thyroid extract, we might on *a priori* grounds safely infer its plasmic origin: only through the plasma could the generalised modification in nutrition characteristic of it be produced. Only through this medium, again, could the characteristic phenomena of Graves's disease—such as the rapid metabolism, the emaciation, sweating, pigmentation, and agitation—be produced. Addison's disease is so obviously an affection of the blood that there is hardly need to advance proof of the fact. The occurrence of pigmentation alone attests it, and it is manifest that the nutrition of the tissues generally is profoundly affected in this disease; moreover, the great fall in the blood pressure observed in it is just what one would expect to get in a disease having as a constant accompaniment degeneration of a tissue known to yield a powerful vaso-constrictor substance. Exactly the same arguments apply to acromegaly: only through the blood would it be possible for its characteristic anatomical changes to be set up. There is no medium other than the plasma capable of producing a widespread symmetrical overgrowth of osseous and fibrous tissue, and it is scarcely conceivable that some billions of cells should spontaneously take on this morbid form of activity. Apart from these considerations we have in acromegaly unmistakable evidence of blood alteration in the shape of pigmentation, sweating, and other cutaneous phenomena. The nutritive changes met with in this disease are, in fact, just as certainly plasmic in origin as are those which characterise puberty.

Diabetes is manifestly another plasmic affection: the plasma contains a superabundance of grape sugar. It is probable, however, that it is a plasmic affection in another sense, not merely, that is, in respect of the excess of sugar, but in the sense (in many cases at least) that some initial antecedent defect of the plasma is responsible for the hyperglycæmia. This conclusion can be arrived at *a priori*.

I have already advanced arguments in favour of the view that in pancreatic diabetes the disorder of the pancreatic cells which causes the diabetes is due to a noxious influence operating on them. This noxious influence almost certainly works through the plasma. But however the cells of the pancreas be disordered, it is evident that the disease of them can only cause diabetes in one way—i.e., through the plasma, by so altering its composition as to interfere with the normal metabolism of saccharide material. It is certain that the hyperglycæmia, whether secondary to the disease of the pancreas or some other organ, results from some peculiar condition of the plasma. In all cases of genuine diabetes there sooner or later comes a time when sugar is passed in the urine, even though all carbohydrates are omitted from the food, and, indeed, when food is withheld altogether. The sugar in such cases can only have one source—i.e., the tissues—and we must either assume that the plasma so influences these as to compel them to yield sugar in abnormally large quantities or that it is deficient in some substance needful for the utilisation of sugar; in other words, we are compelled to assume that the essential cause of diabetes lies within the plasma. I see no grounds for assuming, as some do, that the pathology of diabetes in the early phases of the disease, when the glycosuria can be eluded by withholding carbohydrates, is different from what it is in its later phases.³ It is essentially the same throughout. "We may conclude, in short, that genuine diabetes mellitus is from the beginning to the end of its course due to a faulty condition of the blood,

³ H. Batty Shaw has advanced evidence in favour of this view. He concludes that "kidney substance can alone be the cause of the rise of blood pressure met with in renal disease," Goulstonian Lecture III., THE LANCET, May 28th, 1906, p. 1461.

⁴ Pavy holds that the presence of sugar in the blood causes the protoplasm of the tissues to break down into sugar. "On Carbohydrate Metabolism," F. W. Pavy, M.D. Lond., LL.D., F.R.S. 1906.

leading to a faulty metabolism of sugar, and one can hardly doubt that this faulty blood state is due to defective metabolism of some tissue or tissues which normally yield to the blood something which is essential to the normal metabolism of sugar. During the early phases of the disease the specific blood defect is comparatively slight, so that the glycosuria can be held in check by curtailing the carbohydrate diet, but during the latter phases it is so pronounced that glycosuria occurs even during complete starvation." This passage in inverted commas was written in ignorance of the most recent expert opinion on the physiology of sugar metabolism and was arrived at deductively. It was therefore with great interest that I read the latest pronouncement on the subject by an accomplished physiologist: "The primary cause of the accumulation of sugar in the blood in pancreatic diabetes is the withdrawal from the blood of some internal secretion yielded by the pancreas necessary for the utilisation of dextrose,"* and later the same authority adds that there can be no doubt "that a want of destruction of dextrose must be the cause of the glycosuria." Pavy, on the other hand, attributes pancreatic diabetes to the absence from the plasma of something needful for the assimilation rather than for the destruction of carbohydrate.[†] It will, however, be observed that on either view pancreatic diabetes results from a plasmic defect.

We have seen that all the characteristic symptoms of insanity can be produced by certain substances (such as drugs and bacterial poisons) operating through the plasma; and also that alterations in the hormonal constituents of the plasma (such as happen, e.g., in Graves's disease) may cause virulent "nervousness." Facts such as these prepare us for the conclusion that insanity may be plasmically induced; and there is unmistakable evidence that this is actually the case. Thus insanity is known to be sometimes caused by chronic alcoholism, and by the specific fevers, in which cases the essential cause obviously operates through the blood; and there can be no doubt that many other forms of mental disease are similarly induced. Indeed, it is probable that most cases of insanity, other than those due to such causes as trauma, some cases of tumour, and primary senile degeneration, are essentially plasmic in origin.

We are compelled to assume that with the exception of cases of this kind the plasma takes some part in the causation of all those cases of insanity in which gross structural changes are met with in the cerebral neurons; for on the principle already laid down such changes must be due to some noxious influence operating upon the affected neurons, and nervous influence being incompetent to bring them about we can only conclude that they are produced through the plasma.

When pronounced structural changes have taken place in the brain complete recovery from insanity is impossible; but in the absence of such changes there may be complete recovery. As in the former cases, so in the latter, we must assume the existence of a noxious environment operating upon the disordered neurons, for we may lay it down as an axiom that *spontaneous disorder and spontaneous recovery of a cell are incompatible*. Such an occurrence would imply an inherent tendency on the part of the disordered cell spontaneously to deviate from the normal at a certain point in its vital cycle and at a later period spontaneously to recover—an assumption for which there is no kind of warrant. Recovery from a disease is *ipso facto* proof that the disordered state of the cells responsible for it has been induced in them through their environment.

The noxious influences which may so disturb the cerebral neurons as to cause insanity may be either plasmic or non-plasmic, or a combination of both; but as a matter of fact all the non-plasmic causes, other than tumour and trauma, operate chiefly and essentially through the plasma. Among them may be mentioned mental causes (e.g., excitement, suspense, fear, and excessive intellectual effort), and such reflex causes as eye-strain. Now all the mental causes mentioned lead to marked plasmic alteration, upsetting as they do digestion and the functions of internal secretion and excretion; they may, indeed, modify the composition of the plasma and the metabolism of the entire organism in an incredibly short space of time; fear, for instance, may in a few moments lead to a perceptible change in the odour of the sweat and breath. The reflex causes of insanity probably also act largely by influencing the plasmic environment

of the cortical neurons. Thus, when severe eye-strain is the starting point, as it actually may be, it probably acts chiefly by disturbing the general health and thus modifying the composition of the plasma; it may conceivably act also by reflexly causing vaso-motor disturbance of the brain, and in this way interfering with the proper circulation of the plasma.

We thus see that the blood plasma plays a preponderating part in the causation of insanity; and it is probable that when there is an innate tendency to this affection, it is rather because of an innate tendency for the plasma to become disordered in a way calculated to set it up, than because of an innate tendency on the part of the cortical neurons to become spontaneously disordered. In suggesting this I am not denying that the cerebral organisation may be such as to predispose to insanity.

Doubtless many of the plasmic changes which take place in chronic insanity develop in the course of the disease and are not responsible for the primary outbreak, though necessarily adding their quota to the clinical picture of the disease. Such plasmic changes result inevitably from the constant action and reaction taking place between the blood and the tissues. There can, however, be little doubt that in most cases of insanity the blood is from the very beginning of the disease specifically altered, and that this specific blood state is its essential cause. It is probable that the most sane individual would become insane if his brain were constantly fed with the blood of a chronic lunatic, and not only so, but that he would suffer from the same kind of insanity; just as, contrariwise, it is probable that in most cases of insanity without serious brain disorganisation the constant feeding of the brain with healthy blood would effectually re-establish the normal mental balance.

Summary.—The functions of the component cells of the organism may be considered from the egoistic and the altruistic standpoint, and it is possible for a cell to fall altruistically and yet possess a vigorous vitality, and thus, considered individually, be free of disease; a cell cannot be said to be actually diseased unless it degenerates and falls in vitality. Cell disease as thus defined rarely occurs spontaneously in the cell. Spontaneous disease in the organism is, however, quite common and, when it occurs, generally results from altruistic failure in cell function, interfering with the normal harmonious interaction between the various parts of the body, and thus causing functional or even organic disease.

(To be continued.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on March 14th, Mr. HENRY MORRIS, the President, being in the chair.

Mr. J. Ernest Lane was introduced and having made a declaration in the terms of the oath prescribed by the Charter of 1800 was admitted a member of the Court of Examiners.

The PRESIDENT reported the death on Feb. 19th of the Hon. Sir William Hales Hingston, M.D., LL.D., D.O.L., of Montreal, an honorary Fellow of the College, and he stated that he had written to Lady Hingston to express the sympathy and condolences of the Council.

The PRESIDENT reported the delivery of the Erasmus Wilson lectures by Mr. Willmott H. Evans, Mr. Reginald Cheyne Elmslie, and Mr. Kenneth W. Goadby. He also reported the delivery of the Hunterian oration by Mr. Henry T. Butlin. The best thanks of the Council were given to Mr. Butlin for his oration and he was requested to publish it. The President also reported the delivery of the Arris and Gale lectures by Mr. J. F. Dobson and Dr. Bertram L. Abrahams. The President further reported the delivery of the Hunterian lectures by Mr. W. Sampson Handley, Mr. J. W. Thomson Walker, and Mr. J. Howell Evans. The President reported that Mr. William Wright's Hunterian lectures had been unavoidably postponed owing to his illness.

The PRESIDENT stated that in pursuance of the Bradshaw bequest he had chosen Mr. Bickman J. Godlee as Bradshaw lecturer for the ensuing collegiate year.

Sir Gilbert Blane's medals were awarded to Staff Surgeon James William Wilcocks Stanton, R.N., for his journal of

* Recent Advances in Physiology, &c. Edited by Leonard Hill. Pp. 312-334.

† Op. cit., pp. 70 et seq.

H.M.S. *Suffolk*, 1905, and to Surgeon Bernard Ley, R.N., for his journal of H.M.S. *Algerine*, 1904.

Mr. A. Pearce Gould was re-elected as representative of the College upon the Senate of the University of London.

Dr. J. Ward Cousins was re-elected as representative of the College on the Central Midwives Board.

It was announced that a letter had been received from the secretary of the London School of Medicine for Women, inclosing a list of 2708 signatures in support of the petition to the Council in favour of the admission of women to the examinations of the College.

A letter was read from Dr. Arthur Keith reporting his attendance as the representative of the College with the deputation to the Prime Minister to urge the importance of a national anthropometric survey, and giving a short account of the grounds upon which the importance of this survey was urged and of the reply of the Prime Minister. A vote of thanks was accorded to Dr. Keith for his services as the representative of the College.

Looking Back.

FROM

THE LANCET, SATURDAY, March 21st, 1829.

YELLOW FEVER AT GIBRALTAR.

This formidable epidemic has at last ceased to rage; and, since the 16th of January, it has been deemed unnecessary to enforce any longer the quarantine, and the other sanitary measures. The number of patients who were affected with the yellow fever, amounts to 5,270, to which, it appears, no less than 1300 must be added, who were not entered in the official accounts; 1412 of the above number were soldiers, and amongst them the mortality was 1 to 3.41; amongst other patients, it was only 1 to 4.15; the absolute number of deaths was 1658.

M. Chervin, whose researches on the nature of yellow fever have been given in a former number of THE LANCET, was sent by the Académie Royale de Médecine of Paris to Gibraltar, in order to observe the epidemic. In his last communication to the Académie, he declares the disease at Gibraltar to be identical with the yellow fever of the West Indies; and asserts, that the most scrupulous investigations he made, during his stay at Gibraltar, with respect to the contagiousity or non-contagiousity of the disease, have only contributed to confirm his former opinion on the subject. M. Chervin was accompanied by M. Louis, who, soon after his arrival at Gibraltar, had a slight attack of the disease, from which he recovered within a short time. As soon as the official report of MM. Chervin and Louis has been laid before the Académie Royale, an extract of it shall be given to our readers.

SUBSTITUTE FOR HOPS.*

To the Editor of THE LANCET.

SIR,—In THE LANCET, No. 287, (Feb. 28, 1829,) it is stated that Mr. Yosy made a communication to the Medico-Botanical Society, respecting the use of the common buckbean, or marsh-trefoll, as a substitute for hops, and for which they presented him with their silver medal. I can attest as to its proving an excellent succedaneum in this respect; for, about the year 1820, when hops were at an exceedingly high price, I prepared a considerable quantity of extract from the plant, of which I sold a great deal.

If I be correct in my remembrance, a small pill box full, containing nearly two drachms, was considered equal to one pound of hops. What tends, in some degree, to establish the approval of the article in the process of brewing is, that they were private householders only who purchased it.

I am, Sir,

Your obedient servant,

L. TOWNE.

March 10, 1829.

* Vide "Looking Back" in THE LANCET of March 2nd, 1907.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

Guildford Borough.—The town council has built 18 cottages which are now let at from 6s. 8d. to 7s. 6d. weekly, the total cost of such cottages having been £4266. Dr. R. W. C. Pierce states that it has not been found possible to build cottages to let at about 5s. weekly, the maximum amount which a labourer can afford to pay, and thus, he adds, the housing problem has not yet been solved. The larger of the cottages referred to above have each a living room, kitchen, scullery, and three bedrooms; in the smaller the kitchen is omitted. Dr. Pierce does not discuss the important question as to the percentage which a town council trading in houses may reasonably expect to obtain, but it would not appear that a weekly rental of £6 5s. for 18 cottages which cost £4266 is altogether a bad return. The council decided to allow a letter from the Kingston guardians asking the council to petition the Local Government Board to make pulmonary tuberculosis notifiable in a compulsory sense to lie on the table.

Guildford Rural District.—Steps were taken by the medical officer of health of this district in 1906 to prevent the overcrowding of cottages by London holiday children and by means of a circular sent to persons responsible for the despatch of the children it was urged that all should be carefully examined before leaving London and that pains should be taken to insure that they could be provided with at least 300 cubic feet of space in the cottages to which they were going. During the summer two cases of scarlet fever occurred amongst gipsies who were fruit-picking, these gipsies visiting the neighbourhood for strawberry and raspberry gathering. Apparently the custom obtained locally some years ago of commencing the summer holidays at an earlier period in order that both parents and children might do the work. Dr. Pierce thinks that this arrangement was a good one in that it enabled the local people to obtain healthy employment and also prevented the introduction of undesirable labourers.

Maldon Rural District Council.—The housing problem in rural districts is of such interest that any details relative thereto are helpful even when they record nothing but financial failures. Dr. J. O. Thresh tells us that Mr. Fels, whose name is so honourably associated with attempts to deal with the housing problem, has purchased a farm in this district and divided it into holdings of from five to ten acres each. 26 houses are to be built and 14 of them are already occupied, there being in connexion with the cottages a range of glass-houses for the use of the tenants. Apparently the rent for each holding is about £24 per annum. The experiment, which was, it appears, carried out by the district council at Bradwell, has not been altogether a brilliant success. The six cottages which were erected in 1904 cost £1450, and the annual payments amount to £81 2s. 9d. in connexion with repayment of the loan and £14 13s. for rates and repairs. As the rents only amount to £54 12s. there is a deficit of £41 3s. 9d. to be met by the rates, and this amounts to 2½d. in the £.

Chelmsford Rural District.—A somewhat startling outbreak of arsenical poisoning occurred in this district during 1906 and it illustrates a method of poisoning by this drug which was not contemplated by the Royal Commission on Arsenical Poisoning. A publican supplied beer to a purchaser in a gallon stoneware bottle and on the same day five persons who partook of such beer were attacked with sickness, diarrhoea, and abdominal pain in from ten minutes to two hours afterwards. On the following day those who had consumed some of the beer and then suffered gave the remainder, apparently with no criminal intent, to a neighbour, and three persons who drank it were taken ill afterwards. On examining the bottle Dr. Thresh found, he states, the lower part and bottom thickly encrusted with crystals of white arsenic, and this notwithstanding the fact that the landlord had scalded the bottle before using it. In the half-pint of beer which was left in the bottle when Dr. Thresh broke it there were found 30 grains of arsenic in solution. It is added that the beer when taken on the first day must have contained about four grains of arsenic to the

pint, and, on the second day, as much as ten grains. In these circumstances it is, indeed, very remarkable that no fatal results ensued, as each person, we are told, had one or two glasses.

Taunton Urban District.—Dr. H. J. Alford reports that through the generosity of three local residents three beds at the Winsley Sanatorium for Consumption have been placed at the disposal of the town. This sanatorium was erected for the use of the three counties of Somersetshire, Gloucestershire, and Wiltshire, and a large number of the beds, including, we believe, 20 by the town council of Bristol, have been subsidised.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8507 births and 5478 deaths were registered during the week ending March 16th. The annual rate of mortality, which had been equal to 18.4 and 18.2 per 1000 in the two preceding weeks, further declined to 17.8 in the week under notice. During the first 11 weeks of the current quarter the death-rate in these towns averaged 19.3 per 1000, the rate during the same period in London being 19.6. The lowest death-rates in the 76 towns during the week were 6.4 in Hornsey, 8.8 in Burton-on-Trent, 10.7 in Coventry, and 11.0 in Northampton; the rates in the other towns ranged upwards to 23.4 in Sunderland, 23.8 in Birkenhead, 24.2 in Huddersfield, and 26.5 in Plymouth. The 5478 deaths in the 76 towns showed a further decline of 129 from the numbers returned in the two previous weeks, and included 485 which were referred to the principal epidemic diseases, against 440 and 470 in the two preceding weeks; of these, 199 resulted from measles, 114 from whooping-cough, 60 from diphtheria, 39 from diarrhoea, 24 from scarlet fever, 19 from "fever" (principally enteric), and not one from small-pox. The deaths from these epidemic diseases were equal to an annual rate of 1.5 per 1000 in the 76 towns, the rate from the same diseases being also 1.5 in London. No death from any of these epidemic diseases was registered in Plymouth, Southampton, Halifax, Swansea, or in 12 other of the 76 towns; the annual rate therefrom, however, ranged upwards to 5.3 per 1000 in Portsmouth and Birkenhead, 7.0 in Hanley, and 8.5 in St. Helens. The 199 fatal cases of measles showed a slight decline from the number in the previous week, but caused an annual rate of 4.3 in Portsmouth, 4.4 in Birkenhead, 4.5 in West Bromwich, and 6.8 in St. Helens. The 114 deaths from whooping-cough showed an increase, the highest annual rates therefrom being 1.2 in Nottingham and in Rhondda, and 1.3 in Tottenham. The 60 deaths referred to diphtheria were fewer by nine than those in the previous week, but showed a considerable proportional excess in Hanley and Barrow-in-Furness. The three deaths from scarlet fever in Hanley were equal to an annual rate of 2.3. The deaths from "fever" were considerably below the average; one death of a child was referred to cerebro-spinal fever in London. No case of small-pox has been under treatment in the Metropolitan Asylums Hospitals since the end of June last. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had steadily declined in the 11 preceding weeks from 3848 to 2378, further fell to 2326 in the week under notice; 327 new cases of this disease were, however, admitted to these hospitals during the week, against 326 and 306 in the two previous weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 432 and 405 in the two preceding weeks, further declined to 403 in the week under notice, but exceeded the corrected average number in the corresponding week of the last five years by 35. The 26 deaths referred to influenza in London were eight below the corrected average. The causes of 62, or 1.1 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London, Leeds, West Ham, Nottingham, Salford, Leicester, and in 49 other of the 76 towns; the proportion of uncertified deaths, however, again showed a marked excess in Liverpool, Birmingham, Preston, Sunderland, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal

Scotch towns, which had been equal to 20.3 and 20.6 in the two preceding weeks, declined again to 20.5 in the week ending March 16th, but exceeded the mean rate in the 76 English towns by 1.9. The rates in the eight Scotch towns ranged from 13.2 and 17.9 in Dundee and Aberdeen to 21.0 in Perth and 23.5 in Glasgow. The 712 deaths in the eight towns showed a decline of four from the number in the previous week, and included 100 which were referred to the principal epidemic diseases, against 98 and 112 in the two preceding weeks. These 100 deaths were equal to an annual rate of 2.9 per 1000, which exceeded by 1.4 the rate from the same diseases in the 76 English towns; they included 43 which were referred to "fever," 33 to whooping-cough, 13 to diarrhoea, six to measles, four to diphtheria, one to scarlet fever, and not one to small-pox. The deaths referred to "fever," which had been 47 and 52 in the two previous weeks, declined last week to 43, and included 35 in Glasgow, two each in Edinburgh, Leith, and Greenock, and one each in Aberdeen and Paisley; 33 of the 35 deaths from "fever" in Glasgow, and all those recorded in Edinburgh, Leith, Greenock, and Paisley, were certified as cerebro-spinal meningitis. The 33 fatal cases of whooping-cough, showed a further increase upon recent weekly numbers, and included 22 in Glasgow, four in Aberdeen, four in Greenock, and three in Edinburgh. Nine of the 13 deaths attributed to diarrhoea occurred in Glasgow and two in Edinburgh. Of the four fatal cases of diphtheria, three were returned in Glasgow; and four of the six deaths from measles in Edinburgh. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 124 and 149 in the two preceding weeks, further rose to 155 in the week under notice, and exceeded the number in the corresponding week of last year by 32. The causes of 29, or 4.1 per cent., of the deaths registered in the eight towns during the week were not certified or not stated; the percentage of uncertified deaths in the 76 English towns during the same week did not exceed 1.1.

HEALTH OF DUBLIN.

The annual death-rate in Dublin, which had been equal 23.6 and 25.2 per 1000 in the two preceding weeks, further declined to 24.9 in the week ending March 16th. During the first 11 weeks of the current quarter the death-rate in the city averaged 28.0 per 1000; the mean rate during the same period did not exceed 19.6 in London and 19.9 in Edinburgh. The 187 deaths of Dublin residents registered during the week under notice showed a further decline of two from the numbers in recent weeks, and included 18 which were referred to the principal epidemic diseases, against nine and ten in the two previous weeks. These 18 deaths were equal to an annual rate of 2.1 per 1000, and included five from whooping-cough, four from measles, four from diarrhoea, one each from scarlet fever, diphtheria, and "fever," and not one from small-pox. The fatal cases of whooping-cough showed a decline, while those of measles exceeded the numbers in recent weeks. One death was also referred to cerebro-spinal fever. The deaths in the city included 39 of infants under one year of age and 52 of persons aged upwards of 60 years, showing an increase upon the numbers in the previous week. Four deaths from violence and four inquest cases were registered; and 72, or 38.1 per cent., of the deaths occurred in public institutions. The causes of ten, or 5.3 per cent., of the deaths registered during the week were not certified; the percentage of uncertified deaths in the week under notice was equal to 5.7 in Edinburgh, while all the deaths were duly certified in London. The 156 deaths registered in Belfast during the week ending March 16th included 20 deaths certified as due to cerebro-spinal meningitis or cerebro-spinal fever.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeon T. O. Meikle to the *Natal* on commissioning. Staff-Surgeons: J. E. H. Phillips to the *Victory*, additional, to be lent to Haslar Hospital, temporary; F. C. B. Gittings to the *Natal*, on commissioning. Surgeons: G. O. Cross to the *Wildfire*, additional, for Sheerness Yard; A. D. Spalding to

the *Wildfire*, additional, for the *Kadylion*; O. E. C. Stanford to the *Argonaut*, and on recommissioning; G. L. Buckridge to the *Victory*, additional, to be lent to Portland Hospital.

Deputy Inspector-General of Hospitals and Fleets Robert Benthall has been placed on the retired list, with permission to assume the rank of Inspector-General of Hospitals and Fleets (dated March 17th, 1907).

ROYAL ARMY MEDICAL CORPS.

Captain G. E. F. Stammers has been selected for duty in connexion with the revision of the manual for the Royal Army Medical Corps.—Captain C. E. Fleming, from the Dublin district, has been posted to the Cork district for duty at Templemore, and Lieutenant-Colonel T. F. MacNeece from Cork has been selected for appointment as an Administrative Medical Officer at Coatham.—Lieutenant-Colonel F. Eckersley and Lieutenant-Colonel C. L. Jesling have joined the London district for duty.

Lieutenant-Colonel George Scott retires on retired pay (dated March 20th, 1907).

Lieutenant-Colonel William Dugdale retires on retired pay (dated March 16th, 1907).

INDIAN MEDICAL SERVICE.

The King has also approved of the retirement from the service of the undermentioned officers:—Lieutenant-Colonel Edward Pettigall Youngerman (dated March 2nd, 1907) and Captain Hugh Birby Lard (dated March 15th, 1907).

VOLUNTEER OFFICERS' DECORATION.

The King has conferred the Volunteer Officers' Decoration upon the undermentioned officers of the Volunteer Force, who have been duly recommended for the same under the terms of the Royal Warrant dated July 25th, 1892:—

Southern Command (Rifle): 2nd Volunteer Battalion the Duke of Cornwall's Light Infantry: Surgeon-Major and Honorary Surgeon-Lieutenant Colonel William Nettle.

Eastern Command (Medical Corps): Royal Army Medical Corps (Volunteers), Sussex and Kent Bearer Company: Lieutenant-Colonel James Turton (Brigadier-Surgeon-Lieutenant-Colonel, Senior Medical Officer, Sussex and Kent Volunteer Infantry Brigade).

Western Command (Rifle): 5th Volunteer Battalion the Cheshire Regiment: Surgeon-Major Charles Averill. 2nd Volunteer Battalion the Welsh Regiment: Surgeon-Lieutenant-Colonel David Hepburn.

Scottish Command (Rifle): 4th (Donside Highland) Volunteer Battalion the Gordon Highlanders: Surgeon-Major Alexander Nicol.

London District (Medical Corps): Royal Army Medical Corps (Volunteers); London District, London Companies: Lieutenant-Colonel and Honorary Colonel Valentine Matthews.

DEATHS IN THE SERVICES.

Surgeon-General Sir John Harry Ker Jones, K.C.B., A.M.D. (retired), at his residence in Florence on March 12th. He entered the Medical Department of the Army in 1842 and in 1854, his regiment being then in India, he went to the Crimea as a volunteer and took part in the attack on the Redan. He served in India during the Sepoy revolt, when he was wounded. He was present at the storming of the heights before Delhi and at the capture of that city. As principal medical officer he went through the Rohilkund campaign and during the Franco-German war he acted as British Medical Commissioner on the staff of the Crown Prince of Prussia, for which services he received from the Emperor the Steel War Medal and Iron Cross. He was principal medical officer of the Afghan campaign in 1878-79. He retired in 1880. We hope to publish an obituary notice of this distinguished officer in an early issue.

THE ARMY ESTIMATES.

The *Broad Arrow* of last week, in an article analysing the Army Estimates for 1907-C8, contains the following:—

In Vote 2, Medical Establishment, Pay, &c., there is a net decrease of £31,000, there being a reduction in pay of £11,500 in the Army Medical Service, £11,200 for civilian practitioners, £200 for Army Nursing Service, and £2500 for clerks and other subordinates. The cost of medicines is reduced by £1000 and miscellaneous appropriations in aid by £100, the only increase shown being £200 for the expenses of the Royal Army Medical College, in which the commandant and some of the professors have been awarded an increase of pay.

ENTERIC FEVER AT FLEETWOOD.

The *Standard* of March 19th contains the following:—
“The Secretary of State for War has forwarded to the

Fleetwood urban council a communication in which he refuses to allow the publication of the official report on the outbreak of enteric fever at Fleetwood Camp, by which two officers lost their lives last summer. Mr. Haldane has, however, followed this communication by a telegram, in which it is stated that the cause of the outbreak was due to the presence in the officers' mess of an unsuspected case of enteric fever in the person of a civilian waiter, named Joyce. It is expected that an animated discussion on the subject will take place at the next council meeting. It will be remembered that the affair caused a considerable sensation in Lancashire last August. Two officers of the 3rd Battalion Loyal North Lancashire Regiment succumbed to the disease and it was freely hinted that the water-supply of Fleetwood was contaminated. This insinuation the local council hotly denied, asserting that their supply was amongst the finest in England, and that if there was any defect in the supply at the camp it was the fault of the War Office authorities and not of the urban council.”

Correspondence.

“Aut alteram partem.”

CASTING UP ACCOUNTS IN CONNEXION WITH MALARIA.

To the Editors of THE LANCET.

SIRS,—It will be my duty in the autumn of this year to present a report to the International Congress of Hygiene at Berlin on the progress of anti-malaria measures in British possessions and, if possible, in America. Ten years will then have elapsed from the date when the parasites of malaria were first discovered in gnats; and I should therefore like to give as complete and trustworthy an account as possible of all that has been done against the disease during that period. From official publications, articles in the medical press, and private letters, I gather that campaigns have been at least commenced in the following localities: Freetown, Lagos, Gambia, Gold Coast, Hong-Kong, Federated Malay States, Admans, Cardia, Khartoum, Trincomalee, Port Said, Natal, Milan Mir, Peshawar, Rawalpindi, Sialkote, Ferozepore, Karachi, Mhow, Kampti, Deesa, Sagar, Jhansi, Poona, Meerut, Lucknow, Secunderabad, Mandalay, Maymyo, all in British dominions; and in Italy, German possessions, Greece, Havana, Panama, and United States. Unfortunately, the available descriptions of the work done and the results obtained in most of these localities are so vague that they are of little value. Will you, therefore, allow me to appeal through your columns to all medical men and sanitary officers who have interested themselves in the campaign to send me the necessary details to the address given below? The statements should, of course, give the area and population of the district dealt with (including towns, villages, plantations, factories, mines, railways, and ships); the exact nature of the protective measures; and, if possible, any facts bearing on their results. In using the information I will, of course, always take care to give the name of my informant, unless specially desired not to do so.

I am, Sirs, yours faithfully,

RONALD ROSS,

Professor of Tropical Medicine, the University, Liverpool.

March 15th, 1907.

THE TRUE AIM OF MEDICAL EDUCATION.

To the Editors of THE LANCET.

SIRS,—In his address on the True Aim of Medical Education before the Hunterian Society Dr. Lauriston Shaw most ably and powerfully states the case against examinations, both as tests of true knowledge and as incentives to learning. So completely has he handled his subject that there appears nothing else to be said against our present system and little else in favour of that he advocates. Yet, when one carefully studies what Dr. Shaw has said one hardly feels some of his arguments to be altogether convincing. In the world as at present constituted one has in matters of all kinds to choose between two sets of views each compounded of obvious good

and obvious evil. In the subject under discussion it remains for us to weigh the good and the evil of each separate system, and having done so, before coming to a conclusion, further to see how far in each case the evil can be reduced to the minimum.

Dr. Shaw deserves great credit, we must all admit, in exposing the flaws in the present system of examinations, but personally I cannot see why the system itself should not be reformed so as to make examinations, as far as humanly possible, true tests of knowledge. There is no reason surely why the subjects of the medical curriculum should offer to an examiner an insuperable difficulty in testing a candidate's real knowledge. Viewing the subjects demanded of the student I should have thought the direct contrary to be the case. With examinations properly conducted I cannot see how they can "exert a demoralising effect upon both parties engaged in teaching"; if that, however, be the case at present, reorganisation should meet the difficulty. Dr. Shaw's arguments seem to me entirely to bear against some of the present details of examinations and not against the system itself. The external system of examination is condemned by Dr. Shaw, but here again his attack is not really on the system but on the defective way it is carried out. For he refers to "the ability to keep one's store of facts on the surface and to pour them out speedily in the presence of a stranger—the power which is essentially created by the crammer, a mixture indeed of memory and cheek." The fault here surely lies with the examiner, possibly with the curriculum, but certainly not with the system. An examiner blessed with ordinary intelligence ought surely to be able to detect superficiality. Most of us, less intellectually endowed, do so every day of our lives. Dr. Shaw's explanation of the growth of the examination system during the last half of the nineteenth century is excellent, so excellent, in fact, that it behoves us to hesitate long before we destroy that system. The Briton, he says, loves fairplay and hates patronage; examinations came into general use to lessen the moral harm of nepotism. Now, before dismissing this objection as out of date, Dr. Shaw will have to convince us that human nature has changed for the better.

Dr. Shaw points out how hospital resident appointments are given by selection and how futile it would be to grant them by competitive examination. True enough; but one must bear in mind that the qualities required in a hospital resident obviously are not merely professional and could not be gauged by an examination test. Professors at universities he instances as not selected by examination, but as these are chosen for special work or special teaching, in which they are eminent, it hardly seems to me that the parallel with the examination of a student holds. The ground-work of the medical sciences, if studied apart altogether from examinations, is vast and requires most of a young man's time. Would it not be a mistake to put the student on to research work before he was properly grounded? Though admittedly the educational effect of the former might be greater in the sense that Matthew Arnold uses the word "education," the product would, I think, tend to be superstructure without a foundation.

I am, Sirs, yours faithfully,

Croydon, March 2nd, 1907.

A. PERCY ALLAN.

To the Editors of THE LANCET.

SIRS,—In his address before the Hunterian Society on Feb. 15th, as published in THE LANCET of March 2nd, Dr. Lauriston E. Shaw draws attention to the evils of the present examination system in medical education. With your permission I should like to bring forward one or two points, not new it will be said, which in my opinion must tend to uphold the present evils.

A registrable qualification can be obtained by passing the examinations of any one of 15 universities, three conjoint boards, and two apothecaries' societies, all doubtless claiming advantages of their own. Now, in my humble opinion, the practice of medicine is of the nature of a public service, and therefore so many means of entrance are undesirable, being liable to give rise to too great variation in the standard of qualification and unnecessary distinctions by the public as to relative values of the qualifications to the detriment of some of the holders. Within the ranks of the profession itself the obtaining of many qualifications (of the nature of vain repetitions) is encouraged by the fact that institution appointments in the majority of cases are given to those who can show the

largest number of combinations of the letters of the alphabet. These are not necessarily indicative of more than an aptitude for retaining series of assorted facts together with a speculative verbosity regarding theories, whilst power of application of knowledge in a practical manner is wholly wanting. Dr. Shaw mentions the lack of desire for these brilliant stars as house officers on the part of some surgeons who are examiners. The holder of an ordinary qualification, such as the Conjoint diploma, whatever his personal qualities may be, is ineligible for the higher posts in institutions except of very humble order, and may from lack of time or means, after holding a resident appointment, be unable to attempt further examinations. He must therefore go into general practice, and may as well stop there; for if later he should see his way to return to the examination arena and obtain another qualification, having got out of the run he stands a poor chance of a senior post at a hospital.

Although his diploma states that he is licensed to practise medicine, midwifery, and surgery, in actual fact he is limited in scope, for it is useless to take up any part of his work specially, as he can only attain the rank of a clinical assistant and remain a feeder to those of many letters on the full staff of the hospitals. Should he have boldness and confidence in himself and dare to perform operations on his trusting patients, I have heard the remark, "What right has he to operate? he is not on a hospital."

To remedy the present state of affairs is probably no light undertaking, but much will be done by destroying the many-portal system and replacing it by a single body which alone has power to grant qualifications. Thus the General Medical Council might be developed into a Government department, regulating, as it does now, the education of the students at the recognised schools and allowing the periodical examinations to be conducted by the teachers. At the end of the prescribed course of study, subject to the production of satisfactory school certificates, the students would be examined for qualification by a board of examiners specially appointed by the department. One qualification only should be granted—namely, doctor of medicine, any candidates who had particularly distinguished themselves being M.D. with honours.

Until some such simplification of the method of qualification is adopted students must suffer from over-examination by the rival bodies and members of the profession be injured by inequalities not always just.

I am, Sirs, yours faithfully,

March 16th, 1907.

A DESIRER OF REFORM.

THE SACCOLAR THEORY OF HERNIA.

To the Editors of THE LANCET.

SIRS,—Mr. R. Hamilton Russell in THE LANCET of March 9th, 1907, p. 683, is right in assuming that "there is at least one sentence in my recent paper with which Dr. Keith will, I know, cordially agree. The saccolar theory will fall or prevail as it is false or true." To that sentence at least of his last letter I can give a full and unreserved assent; it was just that truth might prevail that I ventured to point out that the two fundamental assertions on which he had based his saccolar theory of hernia were without foundation in fact. These two assertions were (1) that there is a diverticulum of peritoneum within the developing bud of the hind limb, which provides a congenital sac for femoral hernia; and (2) that the processus vaginalis may assume during development irregular and multilocular forms, thus furnishing the sacs of the many irregular varieties of inguinal hernia. Perhaps my manner of nailing these to the "counter" was more vigorous than polite or courteous, yet it seemed to me then, as it seems to me now, that the essential thing was that they should be fixed there firmly until Mr. Russell had proved their "face" value. He does not allude to them in his last letter; I conclude, therefore, he agrees with me as to their non-validity. Another reason for my entering into a public criticism of Mr. Russell's theory was that I think the time has come to protest against a current habit on the part of medical men of assigning to "the congenital" all inexplicable conditions of disease. The saccolar theory of hernia is a case in point; because hernial sacs manifest uncommon forms and occupy unusual sites they are assumed to be of congenital origin; it is just as difficult to conceive their manner of formation before birth as after birth. More

often than not we use the word "congenital" to mask our ignorance of the real cause.

In the letters of Mr. Edward Deaneley and Mr. R. W. Murray in *THE LANCET* of Nov. 24th, 1906, p. 1470, and of Mr. Hamilton Russell in your issue of March 9th, 1907, p. 683, we have, I conclude, a full statement of all the facts on which the saccular theory of hernia is based. Concerning these facts all three writers are unanimous. Briefly stated they are: 1. Complete removal of the hernial sac (with, of course, replacement of its contents) works a cure quite as effectively as removal of the sac with suture of the belly wall. They infer, therefore, that it is the presence of a peritoneal sac, not of a lacuna or weakness in the belly wall, which constitutes the essential condition necessary for the formation of a hernia. The sac is not brought down by the hernia; it must therefore be of congenital origin. 2. That the sac, which is usually regarded as of post-natal origin, is similar in form to that which is known to be of prenatal origin; all are therefore of prenatal origin. Further, the shape of the sac is often such that it can only be accounted for by supposing that it is of prenatal origin. On these two grounds is based the saccular theory of hernia. As to the first point: I am quite prepared to believe that the supporters of the saccular theory obtain, as they maintain they do, quite as good results by a complete removal of the sac as those who not only remove the sac but also repair the abdominal wall by operations such as those of Macewen or Basini. But it is not necessary for me to point out that those who merely remove the sac really do much more than remove the sac; by their operation they necessarily set up a reparative inflammatory process along the hernial tract which probably leads to a more effective repair of the belly wall with less destruction of its muscular mechanism than the wiring and suturing employed in more radical operations. It is one thing to admit the success of their method of treatment; it is quite another matter to infer from it that hernial sacs are of prenatal origin. As to the second point: the supporters of the saccular theory, on what grounds I cannot conceive, have concluded that the shape of the hernial sac indicates a prenatal origin. We only know of two diverticula of the peritoneum which are formed before birth—namely, the processus vaginalis and one which frequently occurs at the umbilicus. In no instance have these diverticula been seen of an irregular or of a saccular form; a prenatal diverticulum of the peritoneum in the shape of a hernial sac is unknown; so far as its shape goes, then, it indicates a post-natal development for hernial sacs. Everyone will admit that a hernial sac which is freely continuous with the tunica vaginalis, or one that is connected with the tunica by a patent or fibrous funicular process which is decidedly shorter than the inguinal canal, must be of prenatal origin; but these are the only two forms which can be recognised with certainty as such. So far as I can learn the supporters of the saccular theory have not troubled to seek to distinguish such forms from others.

Having now dealt with the slender evidence they have brought forward in support of their theory I now proceed to bring forward a few details which have escaped their consideration. Since all hernial sacs are pre-formed, why is it that the inguinal sacs fill so readily in the first few years of life, while the femoral sacs do not fill until puberty is reached? Out of 500 consecutive cases of hernia, Mr. Jonathan Hutchinson, junior, found that the inguinal occurred to the femoral form as 3 to 1; Mr. Murray estimates their ratio as 6 to 1; yet in 360 cases of hernia in children Stiles found only one case of femoral hernia—in a girl, aged eight years; in 1424 cases of hernia in children Bull and Coley found only 35 cases of femoral hernia. On the theory that hernia is the result of a high abdominal pressure acting on a weak part of the abdominal wall, I can explain those figures, but I should very much like to know the explanation offered of them by those who hold that all hernial sacs are of congenital origin.

Mr. Deaneley has asked me the question, Why is it, since we all possess weak points in our belly wall and have our abdominal viscera subjected to a high pressure, that we do not all suffer from hernia? In that Mr. Deaneley is in error. We do not all—most fortunately very few of us do—possess any point in our belly wall that cannot resist a pressure much higher than it ever has to bear, even in the stress of a labourer's life. In return I should like to put a question to Mr. Deaneley, Why is it that 50 per cent. of children

under four months of age do not suffer from inguinal hernia? He himself has quoted the result of Sach's observations—namely, that the funicular process was found patent in 59 per cent. of inguinal canals examined in children under four months of age. They have the pre-formed sacs; why do they not have the hernia? Hernia is very common during the first year of life, but is this due to the fact that there is a process of patent peritoneum in the inguinal canal? Is it not rather due to the fact that there is a patency or gap in the resisting structures of the belly wall, which the presence of the open diverticulum necessitates? When he argues that the sac is the cause of hernia he forgets that there cannot be a sac unless there be also an opening in the belly wall for the mouth of that sac.

Mr. Russell has kindly supplied descriptions and illustrations of four cases of femoral hernia for my consideration. One is a particularly remarkable case; its sac was continuous with the peritoneum, yet it was not lined by peritoneum; how that sac was formed and how it became continuous with the abdominal cavity—unless it had been formed out of a "congenital" abscess cavity—I really cannot tell. My difficulty in accepting Mr. Russell's explanation—namely, that all four are of congenital origin—is that (1) we have no evidence in the thousands of bodies that have been dissected that there ever exists an empty congenital diverticulum of the peritoneum in the positions occupied by these sacs; and (2) no embryologist or anatomist has seen a trace of them in embryo or fetus. But my chief reason for refusing Mr. Russell's explanation is that such sacs can be produced experimentally in the dead body under the influence of agencies and conditions which we know are to be found in the living body. It would occupy too much space and time to detail these experiments now, but at some future time I hope space may be accorded me for the purpose in this journal. Meantime, I would recommend the supporters of the saccular theory to make observations on the following points if they wish to reach the truth about hernia: (1) The degree of intra-abdominal pressure which occurs in lifting heavy weights or in vigorous body movements; (2) the resistance power of the loosely fixed peritoneum in the regions where hernia occurs; (3) the resistance power of the femoral sheath—the sole structure which prevents the formation of a femoral hernia; (4) the functional meaning of the femoral canal.

There is one matter concerning which I would thankfully receive information. Is it true, as Mr. Russell asserts, that there is no relationship between the incidence of hernia and the occupation of those who suffer? I cannot lay my hand on exact data, but I have the impression, given me, I think, by Mr. W. McAdam Eccles, that bakers suffer in an undue proportion, and I believe the condition is also very frequent among labourers in brickfields.

I am, Sirs, yours faithfully,

ARTHUR KEITH.

March 18th, 1907.

* * Mr. Hamilton Russell has asked us to say that he feels that he cannot engage on equal terms in a newspaper controversy because of the time which must elapse before his communications can reach us, a point which we are sure those interested in this matter will recognise.—ED. L.

THE LATE PROFESSOR BUDIN'S METHOD OF REARING INFANTS.

To the Editors of *THE LANCET*.

SIRS,—In your review of my translation of Professor Budin's work, "The Nursing," the following statement is made: "The author excludes from his statistics all infants who have not attended at his clinic for at least one month. Would it be uncharitable to suggest that the newly-born infant who can survive a month's ordeal of undiluted sterilised milk might survive anything?"

As systematic supervision throughout infancy was the essence of Professor Budin's method of rearing children his statistics had to exclude all cases of less than a certain minimum duration. One month represented three to five attendances at the clinic, and no reliable conclusions could have been made as to the value of medical supervision if observation over shorter periods had been included. A mother needs to be educated to the fact that the fortnightly weighing and inspection of her healthy infant is worth the trouble it entails on her; the cases eliminated were almost without exception thriving infants whose mothers ceased to attend

after the clinic had lost its novelty. No infant was ever compelled to conform to any dietetic dogma by Professor Budin. He studied the feeding of each new patient as a fresh problem. I can confidently assert that none "were wrecked before the end of thirty days" from exposure to "an ordeal of undiluted sterilised milk," and if your reviewer wishes I shall gladly obtain for him the details of every case which attended Professor Budin's consultations for less than one month.

Thanking you for this opportunity to correct a false impression for which, perhaps, I am somewhat to blame, I am, Sirs, yours faithfully,

W. J. MALONEY, M.B. Edin.
Brook-street, Grosvenor-square, W., March 12th, 1907.

AN OPEN-AIR SCHOOL.

To the Editors of THE LANCET.

SIRS,—In the article by Mr. C. H. Garland and Dr. T. D. Lister on a National School for Consumptives we are told of the necessity for education in hygiene.¹ The education is to be confined, however, to the working class and to those suffering from tuberculosis. Should not a National School of Hygiene take into consideration a method of living which would prevent the commencement of disease? and is not the well-to-do class equally in need of instruction as to the duty and methods of healthy living? It is with the idea of forwarding such an education that I am erecting in Garden City the building which I am calling an open air school. It is an attempt to demonstrate the possibility of truly healthy conditions of living, not for invalids but for perfectly healthy persons, the result aimed at being to teach the possibility of preventing the first awakening of the germs of consumption.

This life is not to be (as was suggested in the article) "soft" more than any other life lived in the world. Open-air sleeping, eating, and bathing are to be combined with absolutely normal activities. It is proposed by rational feeding and reasonable intellectual and artistic development to produce a finer type of physique and a higher degree of mental and moral capacity than is at present known. I should gladly welcome any inquiry or any visit, though the building will not be complete for several months.

I am, Sirs, yours faithfully,

March 12th, 1907, A. J. LAWRENCE.

GRADUATED LABOUR IN SANATORIUMS.

To the Editors of THE LANCET.

SIRS,—Your readers may be interested to know that the system of graduated labour advocated by Mr. C. H. Garland and Dr. T. D. Lister in your issue of March 9th for patients in sanatoriums has been in force for two years in this institution with satisfactory results. I have had the pleasure of demonstrating this system both to Mr. Garland and Dr. Lister, and am glad to find they now advocate its general adoption. Again, the suggestion of these gentlemen that patients should be taught to take an intelligent interest in their treatment, and that the cause of the disease and methods of its prevention and arrest should be explained fully to each individual has been adopted here since the institution was opened. We have found, however, that "talks in the recreation room," when combined with close supervision of individual patients and continuous co-operation between doctors and patients, yield far more satisfactory results than any pamphlets or other literature, and in my experience amongst the working classes short individual conversations will do more good in a day than teaching by pamphlet will do in a month.

There is one paragraph in the article which appears to me to be original. I refer to the statement that "it is generally humiliating to a man to perform domestic duties..... like bed-making, floor-scrubbing, washing-up, and similar duties." An ounce of practice is worth a ton of theory. In our experience here we have never met this feeling of humiliation. Our male patients, when well enough to do so, make their own beds and keep their wards and crockery clean. They do this work cheerfully and well. The men of our navy, army, and mercantile marine, and men in other occupations daily perform such work as "bed-making,

floor-scrubbing, and washing-up." Are all these men suffering from a sense of humiliation?

I am, Sirs, yours faithfully,

M. S. PATERSON,
Brompton Hospital Sanatorium, Frimley, March 11th, 1907.

TREATMENT OF DISTENSION OF THE INTESTINES.

To the Editors of THE LANCET.

SIRS,—The treatment of distension of the intestines, whether following operation or otherwise, is always a matter of difficulty. There has been a considerable amount of correspondence upon the subject in your columns from time to time showing that the question is of importance. My object in writing is to protest against the treatment by puncture. I imagined that such a procedure was relegated to the past and that a student who suggested it at his examination would be sent down for six months. To my surprise I find that this is not so and I have just read in a clinical lecture by a physician at one of the leading London hospitals: "The prognosis of acute, gastric dilatation is, however, much better than that of tympanites, for while it is easy to evacuate a distended stomach by the tube it is very difficult to deal mechanically with distension of the intestines. The distended coils of intestine may, it is true, be punctured 'with impunity' (Italics are mine!) by a trocar and cannula, but the escape of gas by the cannula is barely sufficient to give permanent relief."

If this is the teaching which students receive it is not surprising that they should act in accordance with it. That they do is supported by the fact that I was recently called upon to operate on a case of septic peritonitis due to this cause. This, I think, is sufficient evidence to justify me in drawing attention to the subject.

I am, Sirs, yours faithfully,

J. LIONEL STRETTON,
Senior Surgeon, Kidderminster Infirmary and Children's Hospital.
March 15th, 1907.

ON THE CONDITION OF THE BLOOD-VESSELS DURING SHOCK.

To the Editors of THE LANCET.

SIRS,—Though firmly persuaded of the truth of Mark Pattison's saying that "of all the ways of wasting time controversy is the most unprofitable," I feel that I must beg space to reply to Mr. J. D. Malcolm's letter on this subject which appears in your issue of March 16th.

In any sphere of thought it is rare; in medicine it is conspicuously rare, for a theory to be found which will as once embrace all the facts. In the present state of our knowledge we have often to decide between two explanations which are diametrically opposed to one another, and in making our selection between them we have nothing to aid us except the weight of available evidence. Even where the preponderance of that evidence is overwhelmingly on one side, there are not infrequently irritating little facts which, for a time at any rate, decline to be included in the fold. It is facts of this nature upon which, in his tilt against the accepted explanation of the phenomena of shock, Mr. Malcolm has seemed to me unduly to dwell, to the exclusion of those matters of real import upon which the accepted explanation is based. If he wishes to persuade us not only that this explanation is wrong, but that it represents the exact opposite of the true one instead, of insisting upon differences in detail between two observers who are in complete consonance on the main question, Mr. Malcolm ought surely to begin by showing that there are fallacies in the arguments by which the present view is supported. Of these arguments I select one for his demolition. It is possibly not the most cogent of the many which might be adduced; it has, at any rate, the merit of simplicity. It is this. The sphygmomanometer shows that the blood pressure in shock is invariably subnormal.¹ The state of the blood pressure depends upon (a) the heart, and (b) the arteries. Mr. Malcolm has expressed himself satisfied² that the heart is not affected in shock. There remain therefore the arteries, including, of course, the arterioles. When these

¹ The Clinical Study of Blood Pressure, T. C. Janeway, 1904, p. 273.
² THE LANCET, March 16th, 1907, p. 762.

vessels contract the blood pressure rises, when they dilate the blood pressure falls.³ The only possible deduction from these elementary facts is that the general state of the blood-vessels in shock is that of dilatation. When Mr. Malcolm has exposed the fallacy in this argument and in others which might be presented in a similar form it will be time enough to consider his excursions into such by-paths as the effects of treatment of which his paper was composed.

Concerning the effects of treatment, it seems pertinent to inquire whether Mr. Malcolm's belief in his view of the contracted state of the blood-vessels in shock has ever induced him to exhibit full doses of nitrite of amyl in that condition. So prompt and reliable a vaso-dilator could hardly fail to produce a very impressive result.

I am, Sirs, yours faithfully,

London, W., March 16th, 1907.

LEONARD WILLIAMS.

FIRE AT THE ROYAL FREE HOSPITAL.

To the Editors of THE LANCET.

SIRS,—In order to allay anxiety on the part of friends of patients and others interested in the Royal Free Hospital which may result from the reports published in some of the newspapers respecting a small fire which occurred in one of the wards early on the morning of March 14th, I venture to ask you kindly to grant space for the following statement. The fire was caused by the joists under one of the fireplaces in the "Annie Zunt" Ward having become ignited. Owing, however, to the prompt action of the hospital staff and the fire brigade the fire was very quickly extinguished and none of the patients were seriously alarmed. I am glad to be able to state that the medical staff report that all the patients are entirely free from any ill-effects from what might have proved a very serious calamity. I may state that the hospital is fully equipped with fire-extinguishing appliances and all the porters and nursing staff are regularly drilled and instructed by an expert fireman in the use of the fire appliances.

I am, Sirs, yours faithfully,

C. W. THIES, Secretary.

Royal Free Hospital, London, W.C., March 15th, 1907.

THE POWERS OF MEDICAL OFFICERS OF HEALTH.

To the Editors of THE LANCET.

SIRS,—I take it the reason for the existence of the medical officer of health is that he may assist to the utmost of his power in stamping out, or, at least, scotching the inroad of, infectious diseases. But the medical officer of health has not the legal peremptory power to exercise this necessary function. He has to consider who it is that makes the complaint, whom the complaint is lodged against, and whether it will pay him to take up the case at all. He is not a free agent, with all his knowledge of sanitation; with all his convictions of the existence and dissemination of the death-dealing microbe, he must wait for it to assert itself, and he cannot, in many cases, forestall it by precautionary measures. I know of a case where a medical officer of health was appointed by a town council and the terms of his appointment were such as empowered it to "kick its own nigger." This was the actual expression used. The council did kick its own nigger and kicked him out of his office. There seems to me greatly to need an extension of the Act of Parliament giving to the medical officer of health absolute power of control for the repression to the extent of his ability of notifiable diseases. Of course, he would be still liable for damages in case of malicious interference. The public well-being demands it, even if the mayor or the town clerk kept pigs in a proscribed area.

To bring this closer home by an illustration of fact, I have lately been elected on to the committee of a mechanics' institution of over 4000 members. It is shockingly badly ventilated. I have applied to the medical officer of health. He cannot help me. It is a private institution. I have applied to him for a copy of the list of notified cases to hand over to the librarian to prevent the re-issue of books returned from an infectious case—for what is more natural than that a convalescent should seek readable books? He dares not give it to me. I have written the town clerk to strengthen his hand. He agrees that the consequences might be serious if the

medical officer of health did. I have written to the President of the Local Government Board two or three times. We have spotted fever near us and around; we are likely soon to have it. I have at last a letter this morning from the Assistant Secretary stating that the Board has no jurisdiction and cannot undertake to intervene in the matter of ventilation. With reference to the library, the Board is not aware of any statutory provisions requiring the medical officer of health to inform the committee of a library of the cases of infectious disease notified to him as the medical officer of health.

I believe I have heard that medical officers of health are themselves trying to get an increase of powers and a security of tenure of office in this independent direction. This seems to be a case that is recent and important enough to help them. An amendment to their Act seems necessary if anyone will undertake to get a Member of Parliament not to consent to wait until the mare is gone before to lock the stable door. I have myself retired from practice as a dental surgeon, and having no axe to grind shall be happy to place my facts and any assistance I can give at the disposal of anyone in thorough earnest on these matters of public health.

I am, Sirs, yours faithfully,

HENRY BLANDY, L.D.S. Edin., Irel., & Glasg.,

late Dental Surgeon to Nottingham General Hospital, Eye Infirmary, and Lenton and Euxton Orphanages.

112, Gregory Boulevard, Nottingham, March 17th, 1907.

YELLOW FEVER IN CUBA AND ITS MEANS OF PROPAGATION.

To the Editors of THE LANCET.

SIRS,—In reviewing my article on "Yellow Fever again in Cuba" in your editorial comment published in THE LANCET of Feb. 23rd, 1907, you have placed me in a wrong light and consequently made me suffer an injustice which, I am sure, was unintentionally done. The concluding words of your elucidation of my writing are the following: "His article is not without interest but will hardly modify the opinions of those who concluded with the several commissions that yellow fever is propagated by mosquitoes." These words give the wrong impression that I do not believe yellow fever is propagated by mosquitoes, and there is where you inadvertently have placed me in a false light. I have never denied that yellow fever is transmitted by mosquitoes. What I have always contended from the very first moment it was brought to public notice in Havana is the conclusion of the American Yellow Fever Commission in Cuba in 1900, that "the female mosquito of the species *Stegomyia fasciata* is the only and exclusive etiological cause, and the only and exclusive means of propagation of yellow fever." Which certainly is a very different thing from what you, unconsciously, accuse me of believing. I am of opinion that although mosquitoes, no doubt, transmit yellow fever under certain and well-defined conditions, yet there are besides other means of propagation of yellow fever—as, for instance, biting flies, bed-bugs, lice, chiggers, fleas, sand ticks, and other kinds of ticks. And it is very strange that no controlling experiments had been made with these domestic insects.

Another error in your kind review of my article is that the grand total of 89 cases of yellow fever, with 37 deaths (a death-rate of 41.57 per cent.) does not cover the whole year 1906, but only goes as far as July 1st; that is, to the end of the first six months of that year. During the second semester of 1906 a great many more cases of yellow fever occurred in Cuba.

I am, Sirs, yours faithfully,

A. M. FERNANDEZ DE YBARRA, A.B., M.D.

New York City, March 16th, 1907.

THE ELECTIONS OF GUARDIANS.

To the Editors of THE LANCET.

SIRS,—I think it a pity that Mr. J. Theodore Dodd, a guardian and councillor of the city of Oxford, should attempt to drag the vexed question of out-door relief into the columns of a medical journal. His axiom that infectious diseases, such as measles, whooping-cough, fevers of various descriptions, and phthisis, may be checked by being brought to the notice of a medical man at an early stage goes, of course, without saying, but when he launches out into the general question of "out-relief" I venture to submit that this is a very different

³ R. H. Starling: Elements of Human Physiology.

matter, and to suggest to the already heavily rated medical man that in view of the terrible abuses of this system which have been brought to light in a recent Local Government Board inquiry he will do well to pause before voting for guardians who are pledged to extend the facilities for this form of relief, thereby further pauperising the recipients and placing an extra burden on his own shoulders.

I am, Sirs, yours faithfully,

E. G. YOUNGER, M.D. BRUX., M.R.C.P. Lond., D.P.H.
Mecklenburgh-square, W.C., March 18th, 1907.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The General Hospital.

THE annual report of the board of management of the General Hospital shows a very satisfactory condition of affairs. The total expenditure for the year was £25,849 and the total income was £27,435, the latter being a little more than £1000 greater than the income of the previous year. On the other hand, it must be noted that the income derived from subscriptions, extra tickets, ordinary donations, and special congregational collections showed a slight, though distinct, falling off. During the year the daily average of in-patients was 304, the total number being 5204, and the cost per patient was £3 6s. 10d. Amongst the in-patients were included 1155 children under 12 years of age and of these 185 were less than two years old. The out-patients numbered 65,427, and each cost, exclusive of teeth extractions, 2s. The number of operations continues to increase; last year 3344 were performed, and as many are of a serious character they form a constantly increasing source of expense. The number of the out-patients is becoming so great that it constitutes a severe strain on the staff. Many of the cases are of quite a simple character, but their examination and treatment take time which might with advantage be devoted to more serious cases. This fact has been recognised for some time and steps are being taken to form a plan for the treatment of the more simple cases as dispensary or club patients. In the last annual report attention was drawn to a new plan for dealing with cases waiting for admission and the success of this is now recorded; it has worked so well that it is only at times of great pressure that any case has to wait a month before admission. It is stated in the report that many expressions of gratitude are received from patients and their friends but only a small minority of these are accompanied by contributions to the funds of the hospital.

The Walsall and District Hospital.

Considerable advances have been made at the hospital during the past year. Two additional wards have been built, and an additional operating theatre, a surgery for casualty cases, a new steam laundry, a disinfecting chamber, a new dispensary, and a more commodious x ray room have been provided. The income for the year exceeded the expenditure by £43, but it will have to be considerably increased next year if it is to cover the increased expenditure which will be necessary for the proper upkeep of the new departments, and the executive committee is wise in appealing at once for increased support.

The Care of the Feeble-minded.

At the annual meeting of the supporters of the Laundry and Homes of Industry, which attempt, amongst other things, to deal in a practical manner with the care of feeble-minded young women, Mrs. Hume Pinsent made an eloquent and forcible appeal for State interference. She pointed out that their society had proved that feeble-minded girls could be made useful and happy, but it was only possible to deal with a limited number. For this there were two reasons—want of means and absence of any power of legal restraint. Mrs. Pinsent emphasised the fact that the money extracted from ratepayers for the education of mentally defective children is practically thrown away, for when the school period is over there is practically no safe place to which the girls can go, and none to which they can be made to go, the result being that both they and their children have eventually to be kept at the public expense. Voluntary subscriptions have hitherto proved utterly inadequate to meet the necessities and with the regularly increasing burden of rates and taxes out of all proportion to the general increase of incomes, it

is not likely that voluntary subscriptions will increase to any great extent. It is perhaps not to be wished that they should, for if there is any chance of staving off the consideration of a difficult subject Governments are not likely to interfere where no votes are to be gained, and it is important that this should become a prominent question, for the feeble-minded and the insane are two great dangers which threaten the best interests of the State, and at present no adequate provision is made for dealing properly with either the one or the other, while both might be practically eradicated in a comparatively short time if they were dealt with in a firm and efficient manner.

Measles and Diphtheria.

We are suffering at present from a very definite epidemic of measles and it has been found necessary to close many schools. During the past week there were 19 deaths from this disease, and there do not seem to be any signs of diminution. Diphtheria also continues to be very prevalent but fortunately it is still of a very mild type. Scarlet fever has diminished but typhoid fever shows signs of increased activity.

March 19th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Ladies Charity and Lying-in Hospital.

THE annual meeting of the supporters of this charity was held last week at the town hall under the presidency of the Lord Mayor. The board of management reported that, owing to the improved condition of the working classes of the city, the number of patients attended to in the outdoor department was only 1645, as against 1847 in the previous year. The number of in-patients was 295, as against 322 in the year 1905. In the school of midwifery 57 pupils were trained during the year; these attended the examination of the Central Midwives Board in accordance with the new Act, of whom 54 qualified. Professor A. M. Paterson, in moving a vote of thanks to the board of management and the medical staff, emphasised the fact that the charity was doing a great work, not merely for the relief of the poor but also in an educational sense, and this had been brought about through the harmonious feeling that existed between the charity and the University of Liverpool. Mr. J. B. Fortune had provided an operating table for the hospital. Lady Hampson had raised among her friends £564 to provide necessities for the patients without trenching on the honorary treasurer's funds. The out-door department is now fully utilised by the medical students at the University for the purposes of practical midwifery under the supervision of Professor Henry Briggs.

The Proposed New Dental Hospital.

The committee of the Liverpool Dental Hospital has decided to make a public appeal for the erection of a new hospital. The present building—which is a converted dwelling-house in Mount Pleasant and has been used as a hospital for nearly 30 years—is now totally inadequate for the needs of the charity. It has been altered and enlarged from time to time until now all the available space is occupied. In every respect the accommodation is insufficient. The space available for operating-rooms and laboratories is also far too limited. The sanitary condition of the hospital is unsatisfactory. This hospital is the only dental hospital in Liverpool and is largely used by the poor of the city. During the year 1906, 23,982 patients were treated. Over 30,000 operations were performed and of these about 11,000 were operations not for the extraction but for the preservation of the teeth. With more adequate appliances and accommodation the number of operations in this category would be greatly increased. The Dental Hospital is affiliated to the University of Liverpool through the school of dental surgery, the dean of which has a seat at the medical faculty. By this means of two important ends are gained. Without the assistance of the students the greater portion of the work accomplished could not be undertaken by the staff of the hospital, and without the practice of the hospital the school of dental surgery could not exist. It is estimated that the cost of a new hospital will be about £10,000, including equipment. Promises of support already received amount to over £5676,

towards which the hospital staff and school fund have contributed £1000.

The Liverpool Stanley Hospital.

The annual meeting of the subscribers to the Liverpool Stanley Hospital was held at the town hall on March 9th, under the chairmanship of the Lord Mayor. One of the features of the report was the recent creation of a gynaecological department, to which Miss M. H. F. Ivens, M.B., M.S. Lond., was appointed the gynaecologist. A special ward to contain six beds was being built in connexion with this department, but the committee had decided that the total number of beds in use at the hospital should not be increased till the existing debt was removed. The cost of the new ward had been defrayed by, and was dedicated to the memory of, Mrs. J. H. Thom. It was the wish of the donor that the post should be filled by a lady practitioner.

Cerebro-spinal Meningitis and Notification.

At a meeting of the city council held on March 6th, the following motion was carried:—

That the council, as the urban sanitary authority of the city of Liverpool, do order that the provisions of the Infectious Disease (Notification) Act, 1853, shall apply in their district for six months to cerebro-spinal meningitis, and that such order shall come into operation immediately after the expiration of one week after the publication of first advertisement of the order as approved by the Local Government Board.

Notice has been given that the above order was approved by the Local Government Board on March 12th, 1907.

Sir Rubert Boyce's Illness.

Professor Sir Rubert Boyce has written to the chairman of the Liverpool School of Tropical Medicine (Sir Alfred Jones) under date of Feb. 27th from Grand Canary, saying that his health is daily improving.

The University of Liverpool and Physical Anthropology.

It is proposed to establish a lectureship in physical anthropology at the University. With the material available in the University and in the city museum the establishment of such a lectureship would do much to stimulate interest in the subject in its many branches.

March 15th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Infantile Mortality in Cardiff.

At a meeting of the Cardiff corporation held in December, 1906, some members appear to have been unduly alarmed at what they described as the high rate of infant mortality in Cardiff during the third quarter of the year, and Dr. E. Walford, the medical officer of health, was instructed to inquire more fully into the causes of this high rate. In the special report on the subject, which has recently been issued by Dr. Walford, he points out that although the infantile mortality-rate in Cardiff during the third quarter of 1906 was 154 per 1000 births it must be kept in mind that the rate in the 78 large towns during the same period was 209 per 1000 and that for the whole of the year the Cardiff rate was only 134 per 1000. He points out that one third of the total number of deaths of young children was due to diarrhoeal diseases and the recommendations which he makes are chiefly concerned with lessening the incidence of these diseases. He very prudently refuses to attribute the presence of diarrhoea among children to one specific cause, the removal of which will remove the disease. While admitting that a most important direct cause is improper feeding, he refers to the fact that the highest rate of infantile mortality occurs in the central districts of the town in which the density of the population is the highest and in which the housing accommodation and general sanitation compare unfavourably with the newer districts, where the streets and buildings have been laid out in accordance with modern ideas. He also lays stress upon the importance of the special cleansing of streets and the flushing of street gullies in hot weather, as well as on the importance of reducing the amount of dust caused by tramcars, motor-cars, and other vehicles. Among his specific recommendations are the appointment of additional women inspectors (there is at present only one in Cardiff), the control and supervision of milk supplied to infants artificially fed, and the provision of more complete statutory control over the milk-supply.

Cardiff Infirmary.

The committee of management of the Cardiff Infirmary has issued a strong appeal for £30,000 to be employed in making several much-needed additions to the institution. It is proposed to erect a new pavilion to contain 64 beds, a new gynaecological operating-room, a clinical laboratory, a museum, and a new post-mortem room.

Public Health in Aberystwyth.

Dr. Abraham Thomas in his annual report to the town council of Aberystwyth stated that the number of births was 172, compared with an average of 173 for the decade, and that there were 143 deaths, compared with an average of 140 for the decade. Infantile mortality was equivalent to the very high rate of 183 deaths per 1000 births registered. It was remarkable that in a health resort like Aberystwyth, with all its natural and hygienic advantages, the infant mortality should be higher than in the large industrial centres of England. Proper care and attention to the feeding of infants would result in a large saving of infant life and rapidly lower the death-rate. The total number of deaths from zymotic diseases at Aberystwyth during the past ten years was 92, which was equivalent to an annual zymotic death-rate of 1.14 per 1000. Some of the infectious diseases were imported by visitors and the absence of an isolation hospital entailed loss and hardship on lodging-house keepers. In the interests of the town as a watering-place and educational centre the provision of hospital accommodation for infectious cases was absolutely imperative. The drainage system was satisfactory and the quality of the water-supply was above suspicion. The meteorological records showed the remarkable evenness of temperature which prevailed at Aberystwyth and practically extended throughout the whole year, so much so that the winter temperature approaches that of the south coast health resorts. The climate, despite its mildness, was bracing and suitable for convalescents to recruit their health and strength.

The Adulteration of Cider.

The increased consumption of cider outside the counties in which the cider apples are grown is no doubt responsible to a great extent for the amount of adulteration which this beverage is said to undergo. During the past two years the National Fruit and Cider Institute has been making investigations as to the purity of the cider which is being sold. As a result it has been found that salicylic acid is being widely used as a preservative, while in some samples of cider no apple juice has been present at all. Although cider is commonly supposed to be pure apple juice it appears that difficulties have arisen in preventing the addition of other substances through the absence of any precise definition. A representation has recently been made by cider makers in the western counties to the President of the Local Government Board and the President of the Board of Agriculture and Fisheries asking that pure cider should be defined and that steps should be taken to prevent its adulteration.

Reform of the Poor Laws.

In making suggestions to the Poor-law Commission for the reform of the Poor laws the Bristol board of guardians has very properly distinguished between habitual vagrants and *bona-fide* workmen in search of work. In the opinion of the board the former should be detained in State labour colonies long enough to secure some reformation of character, while the latter only should be lodged in the workhouses and passed on with way tickets entitling them to food and lodging in neighbouring workhouses. A further suggestion of the Bristol board is that the provision made for the destitute should be restricted to necessities and should be less agreeable than the lot of the self-maintaining labourer, although the sick, the imbeciles, and the children, who are not responsible for their position, should be well cared for.

Sanitary Matters in the Tavistock Rural District.

At the meeting of the Tavistock (Devon) rural district council held on March 15th a letter was read from the Local Government Board stating that it cannot regard as satisfactory the reply of the council to the report of Dr. R. Deane Sweeting. The Board specifies several urgently needed sanitary improvements mentioned in Dr. Sweeting's report and asks what steps the council is taking to carry Dr. Sweeting's recommendations into effect. The Local Government Board adds that after a full consideration of Mr. O. O. Brodick's reply to the criticisms on the performance of his duties as medical officer of health the Board cannot regard

At an Inquest held in Belfast on March 12th in reference to the death of an infant, four months old, in Longford-court, was not seen by any medical man, it came out in evidence that in the same place the mother had lost another child who suffered from the same symptoms. After

this occurrence the house was fumigated by the health authorities. The police sergeant said that the yard of the house in which this family lived was in a perfectly filthy state and the place generally was unfit for human habitation, adding that it had been closed some time ago, but had since been reopened. The coroner said that the place appeared to be greatly overcrowded and recommended the jury to advise the sanitary authorities to look into the matter. He ascribed the high death-rate of the city of Belfast to poverty more than anything else..

Lisburn Water-supply.

At the monthly meeting of the Lisburn rural council it was reported by the council's analyst that the water taken from the Killullagh river was dangerous and quite unfit for cattle. It appears that this condition is due to the washings of the filter beds of the Stoneford water area being discharged into the river in an unpurified condition. The council threatens to institute legal proceedings against the Belfast Water Commissioners unless they abate the nuisance.

Queen Alexandra Sanatorium at Davos.

On March 15th, in the City Hall, Belfast, the Lord Mayor (Lord Shaftesbury) presiding, Lord Balfour of Burleigh brought the claims of the new sanatorium at Davos before a large Belfast audience and asked for support. Professor J. A. Lindsay having referred to the climate, other speakers followed and a considerable sum of money was promised for this deserving object.

Queen's College, Belfast.

The fifth annual dinner of past and present students of Queen's College, Belfast, was held on the eve of St. Patrick's Day, March 16th, in the examination hall of the College, Sir John W. Byers presiding, when there was a very large attendance of professors, graduates, and students. Sir John Byers gave some interesting reminiscences of the College, contrasting its present condition with what it was when he first entered as an arts student. He referred to some of his fellow-students who had shed lustre on the College, such as Dr. Joseph Larmor, Lucasian Professor of Mathematics at Cambridge; Dr. Leslie Porter, Commissioner in the Lucknow United Provinces; and Sir John N. Jordan, K.O.M.G., Minister at Pekin. Other speakers were Dr. J. W. Browne, the President of Queen's College, Professor W. St. Clair Symmers, Professor Johnson Symington, Professor G. Wilson, Professor J. A. Lindsay, and Sir Otto Jaffa. The dinner, which was well attended, was a great success.

The Belfast Ophthalmic Institution.

At the annual meeting of the supporters of this hospital held on March 18th the report submitted showed that 1492 extern eye and 754 ear, nose, and throat patients were treated during the year and 174 cases were received into the wards. The improvement and refitting of the extern department are urged by the staff at an expense of about £250, and of this Dr. J. Walton Browne (senior surgeon) announced that a friend had promised £50. Financially, the amount due to the bank has been reduced to a little over £100, and as to yearly expenditure there was a shortage of £60 3s. 11d. Several speakers referred to the admirable work done at the hospital.

Cerebro-spinal Fever.

Up to to-day (March 19th) 186 cases have been notified with 105 deaths.

Ulster Hospital for Women and Children.

At the annual meeting of the supporters of this hospital held on March 11th it was reported that there had been of intern patients 247 children and 81 women. There had been in the out-patient department 2584 children (of whom 837 were eye cases) and 609 women. There were six intern and 260 extern maternity cases. The rebuilding of the hospital was urged. The only change in the medical staff is that Mr. H. H. B. Cunningham replaces Dr. O. E. Shaw as ophthalmic surgeon. Financially, the total income for the past year was £1217 9s. 8d. and the expenditure was £1163 8s. 9d., leaving a balance in hand of £84 3s. 4d. Mr. G. W. Wolff, M.P., has promised £1000 on condition that all the money (£10,000) is secured for erecting the new hospital before commencing work.

March 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Radiotherapy and Spasmodic Spinal Paralysis.

M. Babiniski recently published an account of a case in which he had obtained a successful result from radiotherapy. The case was that of a child, aged 15 years, who, after a motor-car accident, suffered from general spastic contractions of the neck, the trunk, and all four limbs. A spinal hæmorrhage or pachymeningitis was suspected. At the meeting of the Hospital Medical Society, held on March 1st, M. Babiniski brought forward a somewhat similar case. The patient, a woman, aged 24 years, suffered from contractions of the legs, with paralysis and involuntary spastic movements. The tendon reflexes were exaggerated, there was spinal epilepsy, and the great toe sign was obtainable. 12 sittings for radiotherapy brought about considerable improvement. Except in the cases of Pott's disease or of syphilitic spinal paralysis no other kind of spasmodic paralysis has run a similar course. M. Babiniski considered that the woman had either a patch of spinal sclerosis or else a sarcoma compressing the spinal cord.

Stripping off the Pulmonary Pleura.

On March 5th M. Delorme read before the Academy of Medicine a paper dealing with the case of a patient, under the care of M. Picqué, who had an empyema due to a knife stab. For this he was operated upon three times but the wound did not heal. M. Picqué thereupon cut down on to the contracted lung and stripped off the thickened and inelastic pleura which prevented expansion of the lung, with the result that very soon the patient was perfectly well. M. Delorme discussed the indications for this procedure which he was the first to advocate. Stripping off the pleura should be employed only in cases of diffuse empyema where the two surfaces, visceral and thoracic, of the pleura are separated to an extent of at least six centimetres. Moreover, the operation should not be done unless respiratory gymnastics, begun a few days after the operation for empyema, have failed to make the lung expand. Empyemata starting from simple outside infection seem to give better results than those which are consecutive to pleuro-pulmonary infections.

The Radiotherapy of Chronic and Gonorrhœal Rheumatism.

M. Dominici and M. Gy have been making researches into this subject and the results thereof were presented to the Academy of Medicine on March 5th in a paper read by M. Albert Robin. M. Dominici and M. Gy made use of metal screens or squares of cloth to which the radio active substances were fixed by means of varnish. They came to the conclusion that radium exercises a remarkable influence for good in either form of rheumatism treated. The oedema, the pain, and the reflex contractions all disappeared. The joints rapidly regained their proper functions and as a consequence the muscular dystrophy gradually disappeared also.

The Antitoxic Role played by Calcium Chloride in Bright's Disease.

At the meeting of the Biological Society held on Feb. 23rd M. Iscovesco read a paper on the above subject. He stated that he had found that patients suffering from Bright's disease of the non-polyuric form but who passed from three to 15 grammes of albumin per litre showed a very considerably diminished globular resistance and their serum was very hæmolytic. If, however, calcium salts were added to the serum of these patients the hæmolytic power was diminished or even suppressed altogether. He therefore gave a number of patients coming into the above category chloride of calcium by the mouth in doses of from 20 to 75 centigrammes per diem. In all the cases the amount of albumin excreted was diminished; in one case at the end of a month it had fallen from 8 grammes per litre to 1.50 grammes. In another the amount fell from 12 grammes per litre to 1.50 grammes. The general condition of the patients also improved and the hæmolytic power of the serum diminished. M. Iscovesco could not find any case in which the albuminuria disappeared altogether. In his opinion albuminuria depends upon two factors, the one renal, on which calcium chloride exerts no influence, and the other has to do with the blood. It is upon this last that calcium chloride acts so well. Milk has long been recommended as a

most suitable food for albuminurics and it may be that its suitability is due to the calcium salts which it contains.

Le Certificat d'Études Médicales Supérieures.

IN THE LANCET of Nov. 24th, 1906, p. 1477, I gave your readers some account of the various protests made by the French medical profession against the decree creating the *certificat d'études médicales supérieures* which dated from July 25th, 1906. The great objection was to the title which it was thought would make the public believe, though wrongly, that the holders of this certificate possessed superior medical knowledge to that of those who did not possess it. The opponents of the decree have now gained the day, for the President of the Republic has just issued another decree making the certificate in question null and void. The Minister of Public Instruction has, for his part, appointed an extra-Parliamentary Commission of 73 members to inquire into the question of what modification can be imported into the organisation of medical studies as at present existing.

March 18th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

New University Buildings in Zürich.

VERY important enlargements of the premises occupied by the University of Zürich and its scientific and clinical annexes are being planned at a cost of about £300,000. The first series of buildings proposed by a scientific committee headed by the professor of zoology, Mr. Lang, will be commenced as soon as the necessary credit has been granted by public vote to the cantonal and town authorities. This series consists of a new university building which is to occupy a prominent position near the Federal Polytechnic School; it will be an imposing structure and is to cost £150,000. Next to it the Zoological Institute is to be erected at a cost of £57,000 and last, but not least, a new building for hygiene and bacteriology costing £28,000. There is some anxiety in university circles as to whether the inhabitants of the canton of Zürich, already burdened by heavy direct taxation, will grant these considerable sums of money, because later a further grant of some £80,000 will be required for new isolation wards and for the enlargement of the surgical wards and the Institute for Physical Therapeutics. The inhabitants of Zürich regard with no very favourable eye the increase of foreign students, especially Russians, which increase is partly responsible for these new structures. The University of Zürich has at present 1339 regular students and 336 "Auditoren" who only attend a few lectures. Of the 1339 regular students only 578 are Swiss, the remaining 763, who, of course, form the majority, being foreigners. The Russian students are quite to the front, with 455 male and female students, just numbering one-third of all the students. The question is being raised whether this number should not be reduced by new legislative steps.

Therapeutics of Scarlet Fever.

At a meeting of the Society of Zürich Practitioners, held on March 7th, Dr. Theodore Zangger read a paper on the Pathology and Therapeutics of Scarlet Fever. He gave some interesting details about the mortality of this disease in Zürich. In the years 1904 and 1905 the endemic prevalence of scarlet fever, from which some 300 patients suffer every year (the population of Zürich is 170,000), took an epidemic form, 1321 and 1468 cases being announced to the sanitary authorities. No doubt several hundred cases in these years escaped notification through being treated at home without medical aid or by quacks. The majority of cases were treated at the Cantonal Hospital under Professor Eichhorst. In 1904 there were 15 deaths and in 1905 there were 23 deaths. For 2789 cases this gives a mortality of scarcely 1.5 per cent., a very low average when compared with other statistics. Dr. Zangger proposed more active treatment for all cases of scarlet fever in the form of a spray of a 2 or 3 per cent. solution of peroxide of hydrogen applied to the nostrils and throat twice a day so long as abnormal secretion and inflammation continued. Wet packs and baths also form part of this treatment which gave good results as regards complications.

March 11th.

Obituary.

ARTHUR ERNEST SANSOM, M.D. LOND., F.R.C.P. LOND.,
CONSULTING PHYSICIAN TO THE LONDON HOSPITAL.

THE announcement of the death of Dr. A. E. Sansom will be received by his many friends with very deep regret. He had been in failing health for some years and retired from active practice about two and a half years before his death, residing first at Hampstead and subsequently at Bournemouth, where he died on March 10th.

Arthur Ernest Sansom was born at Corsham, Wiltshire, on May 13th, 1838. His father was a gentleman farmer; his mother a lineal descendant of the celebrated divine, Dr. Isaac Barrow. He was educated at Queenwood College, Stockbridge, Hants, where he had the advantage of studying under Professor Tyndall. On leaving school he was under the care of a private tutor at Chippenham in order to prepare for the University of London. He entered King's College, London, at the age of 16 years, at which institution he became Warneford scholar, in addition to gaining many other prizes and successes. He afterwards acted as clinical clerk to the late Dr. Todd. After filling the usual out-patient and in-patient appointments, and being then too young to obtain his diplomas, he proceeded to Paris in order to study at the Hôpital St. Louis, and was a devoted disciple of Poirry. He became a Fellow of King's College. He took the diplomas of M.R.C.S. Eng. and L.S.A. in 1859. In the same year he obtained the degree of Bachelor of Medicine of the University of London and that of Doctor of Medicine in 1866. He was elected a Fellow of the Royal College of Physicians of London in 1878.

Dr. Sansom held the post of assistant physician and subsequently that of physician to the London Hospital and to the North-Eastern Hospital for Children and at the time of his death he was consulting physician to both these institutions. He had also held the appointment of physician to the Royal Albert Orphan Asylum and physician to the Royal Hospital for Diseases of the Chest, City-road. His earlier works were: *Chloroform: its Action and Administration*, published in 1865; and *Anæsthetics in Obstetric Practice*, published in 1869, in which he advocated the more general use of a mixture of chloroform and of absolute alcohol. He was the first member of the medical profession in this country to bring before his colleagues the important deductions from Pasteur's researches in fermentation, but his papers read before the Medical Society of London were not received with the favour which they deserved and their embodiment in book form entitled "The Antiseptic System" met with no encouragement. His insight into a subject which was in the future to cause a revolution in surgical practice was, however, remarkable, and the correctness of his views was subsequently confirmed by the researches of Mr. (now Lord) Lister. His best known work was entitled "The Diagnosis of Diseases of the Heart and Thoracic Aorta," published in 1892, and is recognised as one of the standard works on the subject. His valuable researches and observations on diseases of the heart were further recorded in the Lettsomian lectures on the Treatment of Some of the Forms of Valvular Disease of the Heart and also in his articles in Keating's *Cyclopædia of Diseases of Children*, Quain's "Dictionary of Medicine," the "Twentieth Century of Practice of Medicine," and Allbutt's "System of Medicine." These publications proved him to be one of the leading authorities on diseases of the heart.

In all his writings Dr. Sansom's earnest desire was to inculcate precision—precision of observation and precision of record. He was accustomed to lay particular stress on practical points in diagnosis and treatment. He took infinite pains to procure accurate records of tracings obtained by the sphygmograph and cardiograph. His published works afford ample proof of his labours in this direction. Another feature of his book on "The Diagnosis of Diseases of the Heart" is the numerous reproductions of outlines of the heart and positions of the physical signs as obtained from superficial tracings taken from the actual chest wall in cases of heart disease. His former house physicians or those students who accompanied him in his visits to the wards of the London Hospital will remember the enthusiasm and perseverance with which he obtained such tracings and the pains which he took to explain to those around him the significance and importance which



ARTHUR ERNEST SANSON, M.D. LOND., F.R.C.P. LOND.,
CONSULTING PHYSICIAN TO THE LONDON HOSPITAL.

he attached to them. Dr. Sansom was a keen supporter of the various medical societies. He was constant in his attendance at many of them and frequently took part in the discussions. He was a past President of the Medical Society. He was also a corresponding member of several foreign societies.

Dr. Sansom was possessed of a most charming personality. His kindness and geniality made him beloved by all who knew him. No one can forget the warmth of his greeting and his true friendliness towards those who were privileged to have a close acquaintance with him. He was a staunch Churchman and in a quiet unostentatious manner performed countless acts of charity and was willing to lend a helping hand to those who required assistance by money, time, and advice. When he retired from practice he caused a gap which was difficult to fill and he left Harley-street amidst the sincere sympathy and regret of his numerous friends. Dr. Sansom was an ardent Freemason and his services to the craft obtained for him the well-deserved honour of Senior Grand Deacon in the Grand Lodge of England in 1902. He took a deep interest in many charitable institutions, especially in the work connected with Epsom College. Dr. Sansom married Miss Weaver, daughter of Mr. Henry Weaver, of Devizes, county surveyor of Wiltshire, who survives him. He leaves six children, his eldest son and his son-in-law being members of the medical profession and his second son practising as a dentist.

The funeral took place on March 14th. The first part of the service was conducted at St. Luke's Church, Hampstead, and many old friends attended to attest their sorrow for the loss of one so largely beloved and respected. The interment followed at Finchley Cemetery.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Clemente J. dos Santos Pinto, professor of operative medicine in the Oporto School of Medicine.—Dr. Paul Krabler, extraordinary professor of children's diseases and of internal medicine in the University of Greifswald.—Dr. Warenhorst Pasha, senior medical officer of the Deaconesses' Hospital, Alexandria.—Dr. Mathias Duval, professor of histology in the University of Paris and member of the Academy of Medicine.—Dr. F. J. Herrgott, formerly professor of clinical midwifery in Nancy.—Dr. Georg Friedrich Louis Thomas, professor of pharmacology and director of the University Medical Policlinic, Freiburg, at the age of 68 years. In the earlier days of his professional life he was assistant to Dr. Strempel, professor of surgery in Rostock, and afterwards to Wunderlich, the celebrated Leipzig professor of medicine. He was the author of many articles in Ziemssen's "Handbuch" of Special Pathology and Therapeutics.—Dr. Adalbert Tilkowsky, director of the Lower Austrian Lunatic Asylum, Vienna, aged 67 years.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Anthrax in Vienna.

AN epidemic of anthrax, which was quickly extinguished by the energetic measures of the sanitary board, occurred not long ago in this city. The source of infection was found to be hair imported from Russia and the first patient was a carpenter who in his spare time used to make brushes. His wife also contracted the disease from the same source, and four other persons who had all been associated with the two first patients were afterwards attacked. Among these six patients, who were all admitted to hospital, there were four deaths. Before the infected hair—horsehair used for upholstery and brushes—was identified, a careful examination of the cattle in the slaughter-houses of Vienna was made and one case of anthrax was found. Disinfection on a large scale was employed. The difficulty of checking the spread of the disease lay in the fact that many people work at the business at home, especially girls and children, who earn pocket-money by tying the hair in small bundles for sale. The authorities, however, succeeded in tracing all the hair coming from the suspected parcel and seven days have now elapsed since the last case was reported.

New Regulations for the Disinfection of Books and Garments.

A series of new regulations, according to the *Journal of the Sanitary Board*, has been issued with regard to the disinfection of books from circulating libraries and of theatrical costumes if they are worn by different persons. Experiments have shown that there is no absolutely certain method of disinfecting books, but an exposure of two or three hours' duration to the vapour evolved from formalin will not damage the book, whilst it will lessen the virulence of bacteria. The present epidemic of influenza may supply an opportunity of testing the efficacy of the method, because it is well known that many of the adult patients have been in the habit of reading books obtained from lending libraries. Although a clause of the regulations requires notification to the proprietor of any case of illness among the readers, there is no means of insuring that this precaution is observed, and it is therefore now directed that every book returned to the library must be placed standing open in a receptacle or room, where an atmosphere of the vapour given off by formalin is allowed to act on it. Theatrical garments and costumes must be disinfected in a similar way before being handed to a second person for wearing. An action for damages which was recently heard before the High Court of Justice was brought by an actress who alleged that she contracted scabies by wearing an article of dress in which she had to appear on the stage. The action was unsuccessful but the calling of public attention to the matter resulted in the renewal of the old regulation.

Left-handedness and Epilepsy.

In a paper read at a recent meeting of the Medical Society Dr. Redlich discussed the condition known as left-handedness. His observations showed that about 2 per cent. of all men were left-handed, whilst the percentage for the female sex was slightly higher. Among neurotic and mentally unsound persons the proportion of left-handedness was much higher—namely, 8 per cent.—whilst among 125 juvenile epileptics there were 22 left-handed, or a proportion of 17 per cent., and both sexes were equally affected. In ten cases the patients themselves were right-handed, but in their families left-handedness was present. It was possible to distinguish between left-handedness affecting families and that which was of solitary occurrence. Whilst in the majority of cases the aberration from the rule of right-handedness was of a family type, the epileptics showed solitary occurrences in 15 per cent. of the cases and only this form was to be regarded as pathological. The pathological importance of this abnormality in epileptics was proved by the concurring symptoms of unilateral degeneration and of asymmetric development of the face and skull with predominance of the right side of the brain. Left-handedness in epileptics might therefore be explained as an extremely slight degree of paralysis of the right side of the body. Another type of left-handedness, which might be called the secondary type, was due to injury of the cerebral tissue controlling the right upper extremity, such injury having occurred either during foetal life or in very early infancy, so that an actual paralysis was never observed. Lesions of this kind might be produced by congenital syphilis, by infectious diseases, by meningitis, and by traumatic incidents during labour. Such primary lesions in the brain might prove a centre for the irritation which later in life produced epileptic seizures, so that the frequency of combination of left-handedness and epilepsy was more easily understood. Left-handedness was more often anatomical than functional. In the measurements of the muscles and bones of the upper extremities there was a difference of a centimetre or one and a half centimetres in favour of the left side, and the condition was often masked by the fact that numerous handicrafts and most machines were so arranged as to be worked by the right hand only, and in this way the right hand was made to appear the more useful of the two. But an examination of other organs, such as the eye and the ear, and of the general sensibility, would show that they were better developed on the left side if the individual were left-handed.

Congenital Dilatation of the Colon in a Child.

A case of this rare congenital abnormality was shown at a recent meeting of the Wiener Gesellschaft der Aerzte by Dr. Weiss who had had the patient, now a boy three years of age, under observation from the time of his birth. During the first week of his life he suffered from constipation, incessant vomiting, and a remarkable dilatation of the abdomen. In the second month, however, the alarming

symptoms subsided and the child had a period of six months of good progress, during which his weight reached 7 kilogrammes (15 pounds). Then suddenly the old symptoms re-appeared, the abdomen becoming tympanitic and so tense that the skin was shiny. After repeated irrigations enormous quantities of fecal matter and faecal concretions were expelled. The weight of the child fell to 6 kilogrammes and up to his twentieth month he never gained any ground and his weight remained constantly at the same level. In the third year the parents had finally consented to an operation, which would be performed at an early date. Meanwhile the boy was shown with all the symptoms of the disease present. Examination per rectum revealed an enormously dilated rectum and sigmoid flexure without any associated stenosis, and the flaccid abdominal wall allowed the dimensions of the colon to be measured approximately, the estimated circumference being 20 centimetres (eight inches). The operation to be performed would consist in resection of the permanently dilated part of the colon.

March 18th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

A Gratuitous Dispensary for Tuberculous Patients.

THERE exists in Constantinople a league which has been constituted with the purpose of fighting against the pest of tuberculosis. The council of administration of this league decided at one of its last meetings to establish a dispensary where people of any creed and nationality suffering from tuberculosis could receive medical treatment free of charge. It is intended to erect the charitable establishment with as little delay as possible and in a central position of the metropolis. It will be worked in the same manner and on the same principles as similar institutions existing in the western parts of Europe. The medical men belonging to the league will alternately attend the dispensary at certain fixed hours of the day. Treatment will also be accorded to patients suffering from any malady affecting the respiratory organs.

Medical Supervision of Servants.

The local newspapers announce that all domestics and servants will be submitted henceforward to a professional tax and to a medical examination. In case they prove to be free from any taint and satisfactory with regard to their family history they will receive a licence permitting them to enter in service. It is also stated that the municipal authorities have received the necessary injunctions to put into execution this new measure of safeguarding public interests.

Typhoid Fever.

Typhoid fever is raging in several suburbs of the metropolis. In Haskuyu alone, on the left bank of the Golden Horn, more than 90 cases have been reported in a comparatively short period of time. The number of deaths has not been stated definitely but it is supposed to be proportionately high. The sanitary authorities are naturally alarmed at this state of things and are taking the necessary measures of prevention. Rêshid Pasha, the prefect of Constantinople, has ordered that all the drains and fountains should be properly examined and the necessary repairs made.

Opium Smoking.

It has been found that the business quarter of Galata superabounds in localities where the habit of opium smoking is indulged in by many people in a rather alarming manner. These localities remain open the whole night and frequently serve as gathering places of all sorts of obscure and dangerous individuals. The police authorities have received strict commands to shut up these places and to prosecute their proprietors.

The Maternity Section of the Italian Hospital.

The Italian Hospital of Constantinople has opened a maternity section for the poorer classes of the population, under the charge of Dr. Scavridis. On Tuesday, Wednesday, and Friday mornings there will be a gratuitous out-patient consultation when pregnant women will be examined by midwives and the medical man in charge. Each of these pregnant women, if desiring to enter the maternity clinique at the approaching term of pregnancy, will have to write

down her name in the register kept at the hospital for that purpose and to occupy the bed assigned to her. If a woman wishes to be delivered in her own home she will be furnished with information and assistance. The rooms of the section are equipped with every requirement of modern hygiene and antiseptics and the departure should prove a veritable boon to indigent mothers.

March 8th.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At a meeting of the Council of the above College held on March 14th the diploma of Fellow was conferred upon the following gentlemen who have previously passed the requisite examinations and have now complied with the by-laws of the College:—

Lionel Edward Close Norbury, M.B., B.S. Lond., M.R.C.S., L.R.C.P., St. Thomas's Hospital; and Gerald Charles Frederick Robinson, M.R.C.S., L.R.C.P., Guy's Hospital.

The diploma of Member was granted to—

Henry Orton Howitt, M.D., O.M. McGill University, McGill University and London Hospital.

A licence to practise Dental Surgery was issued to—

Thornton John Barnett, Charing Cross and Royal Dental Hospitals.

UNIVERSITY OF OXFORD.—Election of Chancellor: In a convocation held on March 14th the Right Hon. George Nathaniel, Lord Curzon of Kedleston, M.A., Hon. D.C.L., All Souls' College, was elected Chancellor of the University.—Degree of D.M.:—In a congregation held on March 14th the following degree in medicine was conferred: Doctor of Medicine, J. Freeman, University College. A scholarship in Natural Science is announced for competition on July 2nd at Brasenose College. Degree days:—The degree days for next term are the following: Thursday, May 2nd, at 10 A.M.; Saturday, May 25th, at 2.30 P.M.; Thursday, June 20th, at 10 A.M.; Thursday, June 27th, at 10 A.M.; and Saturday, July 6th, at 10 A.M.—Official Fellowship in Natural Science at Jesus College: The Principal and Fellows will shortly proceed to elect to an official Fellowship, to be held in conjunction with an assistant tutorship in natural science. The Fellow so appointed will be expected to teach one of the larger subjects recognised in the honour school of natural science, to undertake the entire direction of the science tuition of the college and generally to superintend the college laboratory now in course of erection; this, when completed, will be adapted for the teaching of chemistry and physics. He must be a graduate of some university within the United Kingdom and must be unmarried. His duties will commence at the beginning of the October term. He will be required to reside in college during full term. The emoluments will be those of an official fellowship, together with such a sum from the tuition fund as the college may from time to time determine, the whole stipend being not less than £450 per annum, together with the free use of rooms in college, and the usual allowances. Application of rooms in college, and the usual allowances. Application, together with a statement of the candidate's qualifications and experience, and such testimonials as he may desire to submit, should be sent, not later than May 1st next, by letter, to the Principal, Jesus College, from whom further details, including the conditions of tenure of an official fellowship, may be obtained. All letters addressed to the Principal on this subject should bear the words "Science Fellowship" upon the envelope.—On Thursday, March 14th, Dr. Charles Theodore Williams lectured before the Oxford Medical School on Laennec and the Discovery of Auscultation. He showed a remarkable series of stethoscopes; among the most interesting was one of the original forms devised by Laennec, and, indeed, made by Laennec himself, which was given to the lecturer's father, Dr. C. J. B. Williams. A large collection of the different forms of single stethoscopes were shown and a double stethoscope made by Dr. C. J. B. Williams in 1829 probably represents the first attempt of this kind. The ear-piece consisted of flexible metal. The advantages of the double stethoscope were discussed and a large number of different patterns were shown, including the demonstration stethoscope with which ten or 12 men can listen at once to a patient's heart or lungs. An interesting sketch was given of the life of Laennec and the various French and English editions of his work were exhibited.—Dr. C. Theodore

Williams has founded a scholarship in medicine of the value of £100 at his old college, Pembroke.

COLONIAL MEDICAL OFFICERS.—Mr. G. B. Mason, medical officer of Nevis, West Indies, has been promoted medical officer and magistrate of the Windward district of the Island of Dominica. Dr. F. G. Hopkins, senior medical officer of Southern Nigeria, has been promoted deputy-principal medical officer, and Mr. E. H. Read, medical officer, has become senior medical officer.

THE MEDICAL GOLFING SOCIETY.—The Medical Golf Tournament will take place on Thursday, May 30th, and application has been made to the Barnham Beeches Golf Club for permission to play off the event on its links. To secure the continuity from year to year of this popular fixture and to promote the interest of golf among medical practitioners there has been founded the Medical Golfing Society, with an annual subscription of 4s., the payment of this sum including entrance to the tournament. Any person on the Medical or Dental Registers can join by sending 4s. to the honorary treasurer, Medical Golfing Society, 1, New Cavendish Mansions, New Cavendish-street, London, W., and there seems no reason why the new society should not be as much of a success as the similar institutions supported by the Bar and the Stock Exchange.

The old-established medical publisher Mr. H. K. Lewis has just completed an important extension of premises at 126, Gower-street by the inclusion of 24, Gower-place adjoining. The two shops have been made into one, the older portion being utilised chiefly as the second-hand department. The library is entered from the end of the shop. Subscribers will be able to examine the books on the shelves when making exchanges, and convenience for writing or making extracts will be provided, the idea being to make this department a reading room for subscribers. The telephone in this room is free for subscribers' use. Lavatory accommodation is also provided. The premises are, as is well known, within a minute's walk of the Metropolitan station, and the new Tube station at the junction of Tottenham Court-road, Euston-road, and Hampstead-road is quite near.

DONATIONS AND BEQUESTS.—By the will of the late Surgeon-General Richard Chapman Lofthouse the balance of his property, if not exceeding £3000, is to be divided equally between the Harrogate Bath Hospital, the Harrogate Convalescent Home, the Harrogate Cottage Hospital, and the Yorkshire Home for Incurables. If it shall amount to £4000, then £1000 are to go to the pension fund of Epsom College. (Should certain schemes mentioned in the will be not carried out he left £1500 to the pension fund of Epsom College and the balance (over £40,000) equally between the four Harrogate charities above named.—£250 have just been received by the special appeal committee of the Royal Waterloo Hospital, S.E., from Mr. Otto Beit, executor of his brother's (the late Mr. Alfred Beit) estate. Also a seventh donation of £100 from "A. B." and smaller sums from the following City Companies—viz., the Leathersellers, Carpenters, Armourers, and Braziers.

THE OXFORD EYE HOSPITAL.—The twentieth annual report of this institution for the year 1906 has just been issued and we are glad to see that the notes about the hospital staff and the record of the committee's thanks to the honorary surgeons are the second item in the report and are not relegated to three lines at the end as a sort of after-thought after the expression of the thanks of the committee to the people who send eggs, old clothes, picture postcards, and other gifts, for this, we regret to say, is the custom of many hospital and dispensary committees. The medical work of the hospital during the year 1906 was made all the more difficult by the serious illness of Mr. R. W. Doyne, and in the absence of Mr. F. Menteith Ogilvie the work of the hospital was carried on by Mr. P. E. H. Adams, the assistant surgeon, and by Mr. Donald Gunn, formerly surgeon to the Westminster Ophthalmic Hospital, who gave valuable help on out-patient days while the emergency lasted. The medical report shows that various alterations in the out-patient department have been carried out, so that it is possible to do more work, and that better than before. The total number of attendances during the past year was 8483. The number of operations performed has slightly increased, but the number of eyes which have had to be excised is less than usual. Mr. Adams attributes this improvement chiefly to the fact that

people are abandoning home treatment and attend the hospital before the eye is irretrievably damaged. Certain research work has been done at the hospital and the annual post-graduate course, which is held in July, was well attended by medical men. Altogether the institution, which is the only fully-equipped hospital devoted to the treatment of injuries and diseases of the eye between London on one side and Birmingham on the other, seems to be doing excellent work; tickets of admission are not necessary, the sole passport being inability to pay for private treatment. The member of the committee acting as a visitor for the week makes the inquiries necessary for ascertaining the eligibility of applicants for admission into the hospital or for treatment as out-patients.

THE LATE DR. ADAM JAMESON.—Dr. A. Jameson, who recently was killed, at the age of 46 years, in a railway accident to the Delagoa Bay train while on his way home after retiring from the post of Commissioner of Lands in the Transvaal, was educated at Edinburgh and took the M.B. and C.M. degrees of the University of that city in 1883. The subject of his thesis for the M.D. degree, which he obtained in 1897, was "Malarial Fever." Later he went to Australia, where he practised for a few years and afterwards entered the Legislative Council of the colony and became Minister for Lands and the official leader of the Council. Subsequently he went to South Africa and in 1903 was appointed Commissioner of Lands in the Transvaal. He was a member of the Executive and Legislative Council at Pretoria.

RUSSIAN FACTORIES AND MEDICAL AID.—Under the heading of "Medical Aid to Workpeople in the Factories of the Mining and Metallurgical Industries" the *Finansk* *Finanss* observes that according to statistics published by the Mining Department there were in the year 1904 in European Russia and the Caucasus 3833 mining concerns, with a total of 426,334 workpeople. In these factories there were 214 hospitals with 4244 beds and 355 apartments. The cost of installing the hospitals, the apartments, and the ambulances was 5,482,972 roubles, and the annual expenditure on medical aid was 2,868,275 roubles, or an average of 6.72 roubles per head. In Asiatic Russia in the same year there were 650 mining works with a total of 54,744 workpeople. In these factories there were 127 hospitals with 1025 beds and 171 apartments. These cost (hospitals, apartments, and ambulances) 412,566 roubles, and the annual expenditure on medical aid was 445,337 roubles, or 8.13 roubles per head of the workpeople.

SOCIETY OF MEMBERS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.—On March 14th a deputation from this society was received by the Lord President of the Council in reference to a memorial recently submitted to the Prime Minister, asking that some voice in the management of the College and its property might be given to the Members of the College. The deputation was introduced by Dr. V. H. Rutherford, M.P. Mr. Joseph Smith gave a short account of the history of the College, drawing attention to the fact that Members had made this claim from time to time ever since the first Charter was granted in 1800. He pointed out that the undoubted corporate rights of the Members as such did not carry with them as they should do any vote in the election of the Council or governing body. He referred to the fact of there being some 17,000 Members thus excluded, as against 1300 Fellows who alone have a vote at present. He also showed that a very large proportion of the income of the College is derived from the Members' fees. The Lord President inquired whether, apart from their general claim for representation, the deputation made any specific charges against the present governing body. Dr. W. G. Dickinson stated that no accusation of gross mismanagement was made against the Council, though they naturally considered that the management could be improved in various ways. The Lord President, in reply, said that he had listened with interest to the statements which had been made respecting the position of the Members, and he thought that the deputation had stated their case, on the whole, with great moderation. He agreed that it was anomalous that the representation in the College should be so limited. He would give the matter his closest attention and would endeavour, so far as possible, to act as a mediator in smoothing over the differences which had arisen between the Council and the Members. The deputation would not expect him to say more than this at present and he would probably have to ascertain the views of the

Council of the College in greater fulness. The deputation then thanked his lordship and withdrew.

At the first meeting of the new Pembroke-shire county council held on March 15th Mr. George Griffith, J.P., M.R.O.P. Edin., M.R.O.S. Eng., was unanimously elected chairman.

LONGEVITY.—The *Times* of March 18th states that on the previous day Mrs. Wenham, of Stramshall, the Park, Highgate, in North London, celebrated the 102nd anniversary of her birth. Mrs. Wenham enjoys good health and frequently takes a carriage drive.

ROYAL SEA-BATHING HOSPITAL, MARGATE.—The Earl of Derby presided at the annual court of governors of the Royal Sea-Bathing Hospital on March 13th and in moving the adoption of the report remarked that it contained in a condensed form a great deal of useful matter and showed that the institution was making steady progress. The necessity of early treatment of surgical tuberculosis in suitable surroundings did not yet appear to be realised sufficiently by the public and doubtless many cripples could have been prevented from becoming so had they applied for treatment at the Royal Sea-Bathing Hospital when they were first attacked by the disease. With regard to the proposed building of four new wards over the Wilson Wing, his lordship remarked that until this was done the hospital could not be said to meet modern requirements; the construction of these wards would set free certain old wards for accessory purposes not formerly contemplated, but which were now positively necessary in a modern up-to-date hospital. Lord Biddulph, treasurer, and Sir Henry Lennard, Bart., chairman of the committee of management, spoke of the need for better day rooms, a better dispensary, and a larger electrical department. Mr. Stuart Sankey, L.C.O., seconded the adoption of the report and referred to the fact that £3478 were received as patients' payments and trusted that this sum might be provided by increased public support and the patients treated free.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Nurses' Registration Bill.

Mr. MUNRO FERGUSON has presented a Bill to regulate the qualifications of trained nurses and to provide for their registration. It has been read a first time and receives support from Members amongst all parties in the House of Commons. Its backers include Sir JOHN DICKSON-POYNTER, Mr. ROSE, Mr. RALPH, Mr. EYE, Mr. FELL, Mr. CROOKS, Sir GEORGE ROBERTSON, Dr. V. H. RUTHERFORD, Mr. JOWETT, and Mr. McKILLIP. The Nurses' Registration Bill provides for the appointment of a council to regulate the admission to the register of persons trained as nurses. During the two years following the passing of the Bill into law, any person who claims to be certified as a trained nurse shall be so certified provided such person is at least 21 years of age and (1) holds a three years' certificate of training from a general hospital or Poor-law infirmary approved by the council, and is of good character; or (2) produces evidence of training satisfactory to the same authorities and has in addition been for at least three years in *bond fide* practice as a nurse and is of good character. At the expiration of two years after the passing of the Bill any nurse claiming to be certified under it shall have completed a three years' term of training in the wards of a hospital or Poor-law infirmary approved of by the council and shall verify his or her qualifications for being so certified by such means as the council may prescribe.

Afflicted Children in Ireland.

A Bill has been presented in the House of Commons by Mr. CHARLES CRAIG to provide for the better education of afflicted children in Ireland. It was read a first time.

The Relief of Discharged Invalid Prisoners.

A Bill designed to make better provision as to the relief of persons released from detention in prisons, reformatory and industrial schools, and inebriate reformatories has been presented in the House of Commons by Mr. HERBERT SAMUEL, the Under Secretary for the Home Department, and the measure is backed by Mr. GLADSTONE. At present an administrative difficulty frequently arises when a person who is due for discharge from a prison is destitute and in such an infirm state of health as to require immediate Poor-law relief. It is the duty of the governor of the prison to see that the invalid shall receive proper care on his discharge. Where the place of settlement can be ascertained an order for the admission of the discharged prisoner to the workhouse of the union can be applied for. However, in practice it

has been found that frequently the place of settlement cannot be ascertained or that it is disputed. The only course in this case at present is to take the discharged prisoner to the workhouse of the union in which the prison is situated, but this, in the case of a large prison, imposes an appreciable liability on the ratepayers of the district in which it is situated. The Bill, which is officially entitled the Released Persons (Poor-law Relief) Bill, proposes to remedy the evil by following the precedent of the Criminal Lunatic Act, 1824. It throws the *prima facie* liability for the relief of an invalid prisoner whose place of settlement is unknown on the union in which he ordinarily resided at the time he committed the offence for which he was sent to prison, or, if that cannot be ascertained, on the union where the offence was committed. The guardians of the union to which he is sent in the first instance will be able afterwards, if they see fit, to take steps for his removal to his place of settlement. The same difficulty has been experienced in dealing with invalid persons discharged from reformatory and industrial schools and inebriate reformatories. The Bill proposes to follow the same procedure in dealing with these persons as with discharged prisoners.

Dental Companies (Restrictions of Practice) Bill.

LORD HYLTON has introduced into the House of Lords a Bill to prohibit joint-stock companies from carrying on practice as dentists or dental surgeons except by means of duly qualified persons. The Bill has been read a first time. Lord HYLTON explains the provisions of the existing law and the alterations which he proposes to make in it, in the course of a memorandum attached to his Bill. The memorandum sets forth that in many cases companies under the existing law have been formed by persons who have no qualifications entitling them under the Dentists Act, 1878, to practise dentistry and dental surgery, and these companies are carrying on dental practice by means of unqualified persons or assistants. The provisions of the Dentists Act, 1878, for the protection of the public against unqualified and ignorant practitioners, are thus systematically evaded. The effect of the Bill is to declare it unlawful for a company to practise dentistry or dental surgery, except by means of managers, assistants, or other persons, each of whom is duly qualified to practise dentistry and dental surgery by registration under the Dentists Act, 1878. The Bill further declares that whatever would be an offence under the Dentists Act when committed by an individual person shall also be an offence when committed by a number of persons formed and incorporated into a company. The Bill applies only to the carrying on by limited companies (including joint-stock companies and companies limited by guarantee) of the professional practice of dentistry and dental surgery. It does not apply to the carrying on of the purely mechanical business of the manufacture, sale, and repair of dental appliances. The Bill has the support of the General Medical Council. Enactments to the same effect have already become law in various parts of the British dominions.

Prohibition of Medical Practice by Companies Bill.

A Bill entitled the Prohibition of Medical Practice by Companies Bill has been introduced into the House of Lords by Lord HYLTON. Its object is to prohibit persons who are not by examination and registration legally qualified to practise medicine and surgery from carrying on business as medical practitioners by means of companies formed under the Joint Stock Companies Acts, under shelter of which they are able to evade liabilities attaching to them as individuals. By the Medical Acts penalties are imposed on an unqualified person who falsely assumes the designation of a legally qualified medical practitioner. Lord HYLTON, in an explanatory memorandum to his Bill, states that it has been ascertained that for some time past unqualified persons have had recourse to the machinery established by the Companies Acts, to enable them to carry on medical practice by forming companies for that purpose, and that companies so formed have been, and are, carrying on medical practice on a very large scale, especially among the poorer classes. The provisions of the existing law have been found insufficient to put a stop to such practices. It has even been possible under the existing law for a medical practitioner, whose name has by direction of the General Medical Council been erased from the Medical Register for crime or misconduct, to evade the consequences of the Council's judgment by forming a company under cover of which the practitioner may continue to practise as if he were still duly qualified. The Bill accordingly declares that whatever would be an offence under the Medical Acts when committed by an individual person shall also be an offence when committed by a number of persons formed and incorporated into a company.

LORD HYLTON further states in his memorandum that the effect of the Bill is to make it unlawful for a company formed under the Companies Acts (which includes a joint stock company or a company limited by guarantee) to practise as, or to carry on the business or profession of, a physician, surgeon, or medical practitioner. The Bill applies to existing companies but does not apply to companies formed to carry on business as manufacturers or sellers of medical, surgical, or dental appliances or preparations, pharmaceutical chemists, or chemists and druggists. Nothing in the Bill will prevent a limited liability company from carrying on convalescent homes, hydropathic establishments, and other institutions, of which the primary object is not the actual conduct of medical practice by unqualified persons; or will interfere with friendly

and other societies established for affording mutual relief in sickness and old age, or for assisting their members to obtain the services of duly qualified medical practitioners. The Bill has the support of the General Medical Council. enactments to the same effect have already become law in various parts of the British Dominions.

The Education Acts (Amendment) Bill.

The Education Acts (Amendment) Bill, which contains provisions as to the medical inspection of elementary school children, has passed through its committee stage, and been reported to the House of Commons.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 13TH.

Municipal Milk Depots.

SIR FREDERICK BAYBURN asked the President of the Local Government Board whether he proposed to introduce legislation dealing with municipal milk depots.—MR. JOHN BRYS replied (in a written answer): Yes, I propose to do so.

THURSDAY, MARCH 14TH.

The Standardisation of Disinfectants.

MR. REES asked the President of the Local Government Board whether, in view of the prevalence of the sale of disinfectants which did not disinfect, he proposed to take any steps towards the standardisation of disinfectants.—MR. BRYS answered: I am not empowered to fix standards of disinfectants and it does not appear to me that I could usefully take action in the matter.

The Feeble-minded and Illegitimacy.

MR. WEDGWOOD asked the President of the Local Government Board whether he would cause registers to be kept by the medical officers of all workhouses and inmates of feeble-minded females who were delivered therein of illegitimate children, and whether he would lay upon the table, or otherwise publish, an annual summary of such registers.—MR. BRYS answered: I will take note of the suggestion of my honourable friend, but I think it will be desirable to defer any action in the matter pending the report of the Royal Commission on the Feeble-minded. I understand that the Commissioners are now engaged on their report.

What is Whisky?

MR. H. C. LEE asked the President of the Local Government Board what steps had been taken by his department to appoint a committee to inquire into and settle the question of what was whisky, having in view the postponement of the appeal against Mr. Fortham's decision.—MR. BRYS said, in reply: It appeared to me to be desirable that before I determined to take action of the kind referred to in the question the decision of the court of quarter sessions on a re-hearing of the appeal should be given, and I expressed an opinion to this effect. Further representations have, however, recently been made to me on the subject and these are now receiving my consideration. I may add that any committee appointed by me could only inquire into the matter. It would have no power to settle it.

Insanitary Conditions in St. Pancras.

MR. LEE asked the President of the Local Government Board whether he had yet received a report from the medical officer of health of the borough of St. Pancras on the insanitary condition of Little Clarendon-street, Somers Town, which report he stated that he had called for; also, what action, if any, had been taken by the borough council to deal with this insanitary property under the Housing of the Working Classes Act, 1890 to 1903, and if no action had been taken either by the borough council referred to or the Local Government Board, whether he would explain the cause of the delay.—MR. BRYS replied: I have received the report referred to. It shows that the houses in question are in fair structural condition and that no fault is to be found with the supply of light and air. Overcrowding, however, exists in the street, and a large number of notices for its abatement are served from time to time. The case appears to be one for action under the Public Health (London) Act, 1891, rather than under the Housing of the Working Classes Act, and I gather that the borough council is exercising its powers under the former Act.

Workmen's Compensation Act.

In reply to MR. BRACE, MR. GLADSTONE said: All cases where the accident happens after July 1st, 1907, will be under the new Workmen's Compensation Act. All cases where the accident happens before July 1st, 1907, will be under the old Act, except with respect to references to medical referees as to which the new provisions will apply.

Lunacy in Egypt.

DR. V. H. RUTHERFORD addressed a series of questions to the Secretary of State for Foreign Affairs regarding the allegation in the report of the director-general of the Egyptian lunatic asylum for 1906, that many dangerous lunatics had to be discharged uncurable owing to insufficiency of accommodation and also regarding the promised introduction of a lunacy law.—SIR EDWARD GREY in each case referred the honourable Member to Lord Cromer's report for 1906, which would shortly be published.

Water-supply of Ardler, Perthshire.

In reply to MR. WILKIE, MR. SINCLAIR said: My attention has been called to the unsatisfactory state of the water supply of the village of Ardler (Perthshire). The county medical officer has reported that in the autumn of 1906 a number of children in Ardler and other parts of the county suffered from "broken-out faces" but that there was no reason to connect these with the water-supply. The Local Government Board is in communication with the local authority with a view to an improved supply.

MR. LUTHER: Will the right honourable gentleman inquire whether the breaking-out of the faces of the children is, or is not, due to vaccination?—No reply was given.

MONDAY, MARCH 18TH.

Dr. Duncan's Dismissal.

MR. CATCHELAT WASON asked the Secretary for Scotland whether his

attention had been directed to the facts of Dr. G. Duncan's dismissal; that the reason given—viz., the refusal of Dr. Duncan to implement the agreement entered into by him with the parish council was incorrect; and that Dr. Duncan had been and was ready to carry out any arrangement or agreement entered into by him with the parish council; and if it was possible for him to take any action with the view of checking any injustice.—MR. SINCLAIR said in reply: I understand that the statement made in reply to my honourable friend's question of Feb. 25th, that Dr. Duncan failed to implement an agreement made with him three years ago to appoint an assistant, is correct, and that his recent offer to carry out this arrangement was held by the parish councils employing him to have come too late.

The Medical Inspection of School Children.

MR. JOWETT asked the President of the Board of Education what would be the probable cost of medical inspection under the Education (Administrative Provisions) Bill; and whether the grant would be in any way influenced by such inspection as was carried out by local education committees.—MR. MCKENZIE replied by written answer: I have no information as to the probable cost of medical inspection. The grants, other than those governed by statutes, are paid in respect of the efficiency of instruction and are not affected by any efforts which local education authorities may make in other directions.

MR. JOWETT further asked the President of the Board of Education whether he would state what expert staff it was proposed to provide at the Board of Education to advise as to amending arrangements under Clause 10 (b) of the Education (Administrative Provisions) Bill; and would there be any machinery, by inspection or otherwise, for standardising or insuring efficiency in the medical measures carried out by the local authorities and for reporting to the Minister for Education on the valuable scientific materials of educational value likely to become available.—MR. MCKENZIE answered: I think it would be premature at this stage to decide what machinery will be required by the Board of Education on the Education (Administrative Provisions) Bill becoming law, but the matter is having my careful consideration and the honourable Member's suggestions will not be lost sight of.

Rural Medical Officers of Health.

SIR WALTER FOSTER asked the President of the Local Government Board whether his attention had been drawn to statements made by Local Government Board medical inspectors in reports by them, quoted in the report from the Select Committee on the Housing of the Working Classes Act Amendment Bill, to the effect that certain medical officers of health and inspectors of nuisances in rural districts were, in fact, receiving inadequate salaries; whether the Local Government Board had recommended the repayment of a moiety of the salaries by the county councils in these cases; and, if so, whether it had received the consideration of the Board that they were thereby placed in the position of giving their approval to salaries which had been stated by their inspectors to be inadequate for a proper discharge of the duties required of such officers.—MR. JOHN BRYS replied by written answer: It is only as regards some of the districts in question that inspectors have in their reports directly referred to the salaries of the sanitary officers as inadequate. In most of these cases the Local Government Board had, prior to the inspector's visit, refused or threatened to refuse to sanction the appointment of all or some of the officers concerned. The visit of the inspector has usually led to a more satisfactory arrangement being made than that which previously existed, so that the Board has been able to sanction the appointments with a view to repayment of half the salaries by the county council.

The Case of Dr. Haflinger.

SIR WILLIAM COLLINS asked the Secretary of State for India whether Dr. Haflinger now held any appointment under the Indian Government; whether the use of Dr. Haflinger's prophylactic against plague was now encouraged by the Government; and whether any further information had been obtained in regard to 19 fatal cases of tetanus at Mukawal consequent upon the use of Dr. Haflinger's prophylactic.—MR. MORLEY (by written answer) replied: Dr. Haflinger is in the permanent service of the Government of India and is at present on leave in this country. He holds no appointment in India, but the Government of India has offered him employment in that country on research work at a salary equal to that of which he was in receipt when he left India. Inoculation with Dr. Haflinger's prophylactic continues to be one of the precautions which are recommended by Government to the general population against outbreaks of plague, and facilities are provided for persons who wish to be inoculated. Papers containing the results of the inquiry into the origin of the accidental deaths from tetanus poisoning in the Punjab have recently been published by the Government of India. I have no objection to lay them if they are moved for.

WEDNESDAY, MARCH 20TH.

Parochial Medical Officers (Scotland) Bill.

MR. CATCHELAT WASON asked leave to bring in under the ten minutes' rule a Bill "to amend the law relating to the tenure of parochial medical officers of Scotland." He said that he would take the occasion to bring before the Government and the country a long-standing grievance of the medical profession in the Highlands and Islands of Scotland. The Poor-law medical officers in Scotland had, since the passing of the Local Government Act of 1894, found that their position had altered for the worse. A number of dismissals had taken place on petty grounds. Representations had been made on this point to successive Secretaries for Scotland, and from the reception accorded to a deputation last year he had no reason to believe that the present occupant of that office held any antagonistic view to the contention of the medical profession. It was a gross scandal and injustice that Poor-law medical officers in the north of Scotland had been dismissed on petty grounds. The Bill asked that these gentlemen should go to the Local Government Board for Scotland and have their case heard by it. The medical officers of poor houses in Scotland had had that right during the last five years and in consequence of it there had not been one application from them to the Local Government Board. To give Poor-law medical officers this right of appeal when they were threatened with dismissal would only be a small act of justice.

Leave having been given MR. WASON introduced his Bill which was read a first time.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week such information for gratuitous publication.

BERGIN, FRANK GOWER, L.R.C.P., M.R.C.S., has been appointed House Surgeon at the Bristol General Hospital.
 BLACKETT, JAMES FRANCIS, M.B., B.S. Lond., has been appointed Assistant House Physician at the Bristol General Hospital.
 BRISCOE, WILLIAM THOMAS, M.D., M.Ch. Dub., has been appointed Medical Officer for the Pwsey District by the Chippenham (Wills) Board of Guardians.
 CAREY-EVANS, T. J., M.D. Brux., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at the Royal Southern Hospital, Liverpool.
 COLEMAN, F., M.R.C.S., L.R.C.P., L.D.S. Eng., has been appointed Assistant Dental Surgeon at St. Bartholomew's Hospital.
 COULSON, THOMAS EDMUND, M.B., Ch.B. Edin., has been appointed Senior House Surgeon at the Bristol General Infirmary.
 ELLIOTT, WILLIAM HAROLD ARTHUR, M.B., B.S. Lond., L.S.A., has been appointed Medical Officer to the Bristol Dispensary.
 HEWLETT, FRANK, M.B., P.R.C.S., has been appointed Honorary Surgeon with charge of the Ophthalmic Department at the St. Pancras and Northern Dispensary.
 HUGHES, EDWARD HYLIE HURST, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Resident Medical Officer at the Newport (Mon.) Workhouse.
 KINGSDOTE, ERNEST, M.B., C.M. Edin., has been appointed Honorary Physician to the St. Pancras and Northern Dispensary.
 MACKAY, ERNEST C., B.S., M.D. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Medical Officer to the Convalescent Home of the Chelsea Hospital for Women.
 MILLER, A. H., M.B., B.C. Cantab., has been appointed Resident Medical Officer to Out-patients at Queen Charlotte's Hospital.
 MORRIS, LEONARD NEWSON, L.R.C.P. Lond., M.R.C.S. Eng., has been appointed House Physician at the Bristol General Hospital.
 O'DONOVAN, T. J., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Johnstown District of the county of Cork.
 PRINIGER, WILFRED J. H., M.B., B.S. Lond., L.R.C.P., M.R.C.S., has been appointed Casualty House Surgeon to the Bristol General Hospital.
 POWELL, HUGH, M.D., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Surgeon to the Cheltenham General Hospital Branch Dispensary and Assistant Obstetric Surgeon to the District Nursing Association.
 POWER, J. H., M.R.C.S., L.R.C.P. Lond., has been re-appointed Medical Officer to the Spalding Union Board of Guardians.
 TAYLOR, J. FRANCIS, M.R.C.S., D.P.H., has been appointed Medical Officer of Leyton.
 THOMPSON, THEODORE, M.D. Cantab., M.R.C.P. Lond., F.R.C.S. Eng., has been appointed Assistant Physician at the London Hospital.
 WADE, REGINALD, M.R.C.S., L.S.A., has been appointed Medical Officer of Health for the Highbridge (Somerset) Urban District.
 WILSON, MURRAY RICHARD OSMOND, L.R.C.P., M.R.C.S., has been appointed Casualty House Surgeon to the Bristol General Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM UNIVERSITY OF.—Demonstratorship in Anatomy. Salary £150 per annum.
 BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Senior House Surgeon and Junior House Surgeon. Salary £110 and £70 per annum respectively, with board, washing, &c.
 BODMIN, CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £140 a year, rising to £160, with rooms, rations, laundry, and attendance.
 BOURNEMOUTH, ROYAL BOURNEMOUTH AND WEST HANTS HOSPITAL.—House Surgeon for six months. Salary £20 per annum, with board, lodging, and washing.
 BRISTOL EYE HOSPITAL.—House Surgeon. Salary £20 per annum, with board and residence.
 CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—Assistant Surgeon.
 CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant.
 CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park E.—House Physician for six months. Salary at rate of £50 per annum, with board and residence.
 COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon for six months. Salary £50 per annum, with rooms, board, washing, and attendance.
 DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £50 a year, with board, lodging, and laundry.
 BEVELLA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Clinical Assistants for three months.
 EXETER, ROYAL DEVON AND EXETER HOSPITAL.—Assistant House Surgeon, unmarried. Salary £50 per annum, with board, lodging, and washing. Also House Surgeon. Salary £120 per annum, with board, apartments, and washing.
 HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium of £25.

Huddersfield Infirmary.—Senior Assistant and Junior Assistant House Surgeon. Salaries £60 and £50 respectively per annum with board, rooms, and washing.
 Ingham Infirmary and South Shields and Westoe Dispensary.—Assistant House Surgeon. Salary £75 per annum, with residence, board, and washing.
 LEEDS GENERAL INFIRMARY.—Resident Casualty Officer. Salary £125 per annum, with board, lodging, and washing.
 LEEDS PUBLIC DISPENSARY.—Two Junior Resident Medical Officers. Salary £100 per annum, with board and lodging.
 LEEK, STAFFORDSHIRE COUNTY ASYLUM, Cheddleton.—Junior Assistant Medical Officer. Salary £160 per annum, rising to £200, with board, quarters, and washing.
 LEICESTERSHIRE AND RUTLAND ASYLUM, Leicester.—Second Assistant Officer, unmarried. Salary £130, rising to £160, with apartments, board, and washing.
 MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Assistant Medical Officer. Salary £100 per annum.
 METROPOLITAN LAB. NOSE, AND THROAT HOSPITAL, Grafton-street, Fitzroy-square, W.—Three Senior Clinical Assistants.
 NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Junior Resident Medical Officer. Salary £70 per annum, with board, residence, and laundry.
 NOTTINGHAM CHILDREN'S HOSPITAL.—House Surgeon (female) for six months. Salary at rate of £30 per annum, with board, residence, and washing.
 RICHMOND, SURREY, ROYAL HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with board and apartments.
 ROYAL EAM HOSPITAL, Dean street, Soho, W.—House Surgeon, non-resident, for six months. Honorarium at rate of £40 per annum.
 ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Refraction Assistant. Salary £25 a year, with lunch.
 ROYAL SOUTH LONDON DISPENSARY.—Honorary Surgeon-Dentist.
 SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £80 per annum, with board and residence.
 SEAMEN'S HOSPITAL SOCIETY, Greenwich, S.E.—For DREADNOUGHT HOSPITAL: Two House Physicians and Two House Surgeons. Salary in each case £50 per annum, with board, residence, and washing.—For BRANCH HOSPITAL, Royal Albert Dock, E.—Senior House Surgeon and Registrar, also House Surgeon. Salary of former £100 per annum, and of latter £50 per annum, with board, residence, and washing.
 SHEFFIELD UNION HOSPITAL.—Resident Medical Officer and Resident Assistant Medical Officer. Salary of former £100 per annum and of latter £80 per annum, with allowances, apartments, rations, &c., in each case.
 SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Surgeon. Salary £100 per annum, with rooms, board, and washing. Also Junior House Surgeon for six months. Salary at rate of £60 per annum, with rooms, board, and washing.
 STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £32 per annum, with board, residence, and laundry.
 SUNDERLAND INFIRMARY.—House Surgeon. Salary £30 per annum, with board, residence, and washing.
 TOTTERHAM HOSPITAL, London, N.—Honorary Medical and Surgical Registrars.
 WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon, unmarried. Salary £50 per annum, with board, residence, and washing.
 WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House Surgeon. Salary £120 a year, with board and lodging.
 WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with board, lodging, and laundry. Also Second House Physician. Salary £80 per annum, with board, lodging, and laundry.
 WREXHAM INFIRMARY.—Resident Medical Officer. Salary £30 per annum, with board, lodging, and washing.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Bourne, in the county of Lincoln; at Instidale, in the county of Kilkenny; and at Stanmore, in the county of Middlesex.

Births, Marriages, and Deaths.

BIRTHS.

MURIEL.—On March 15th, at Scotch-street, Whitehaven, the wife of G. Bertram Murriel, B.A., M.B., B.O. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.
 PENNEFATHER.—On March 15th, at Deanhurst, Harrow, the wife of Claud Maxwell Pennefather, M.B., of a son.
 RICKETT.—On March 18th, at Sherborne, Dorset, the wife of Gerald R. Rickett, M.A., M.B. Cantab., of a son.

MARRIAGE.

BLGOOD.—Amos.—On March 7th, at All Saints' Church, Cairo, Percival George Blgood, Major, late Devonshire Regiment, to Boud Sheldon Amos, M.B.

DEATHS.

MCCONAGHEY.—On March 18th, at "Moorlands," Cyprus road, Exmouth, in his 58th year, Colonel John McConaghey, late of I.M.S. Indian papers please copy.
 PEARCE.—On March 7th, at Alfred-place, Plymouth, William Henry Pearce, M.D. Edin., aged 77 years.

£1.—A fee of 6s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HOSPITAL ABUSE: AN ATTEMPTED REMEDY.

On March 12th the Newcastle-on-Tyne Central Dispensary for Diseases of the Nose, Throat, Eye, and Ear was opened. Diseases of the eye are treated on Tuesdays and Fridays at 9 A.M. and diseases of the nose, throat, and ear on Wednesdays and Thursdays at the same hour.

Patients are only seen subject to the following regulations:—

Special Regulations of the Central Dispensary.

- I. That no patient except urgent cases, such as accidents, be treated unless they bear a letter of recommendation.
- II. That urgent cases, such as accidents, will be seen on behalf of their ordinary medical attendant, who will therefore be entitled to charge his usual fee, and will not receive any after treatment unless they bear a letter of recommendation.
- III. That no letters of recommendation be accepted, except those from medical men, or the Charity Organisation Society.

These regulations are admirable and should go some way towards solving the question of hospital abuse. As regards No. II., however, we doubt whether if a patient refused to pay his ordinary medical man a fee for the treatment received at the dispensary the medical man could recover such fee by law. Of course, the after-treatment must be paid for if carried out by the medical man. Regulation No. III. is also much to be commended, for the average possessor of a hospital letter uses it in the most haphazard style, and is accustomed to get very angry if his or her nominee is refused as an unfit case. We congratulate the authorities of the dispensary upon their departure.

GAS POISONING.

To the Editors of THE LANCET.

SIRS,—Some time ago I read an article in THE LANCET condemning the sliding chandelier, which if neglected and not regularly supplied with water allows the gas to escape, resulting in gas poisoning and in many cases explosions. Until recently I was not aware of the general ignorance of servants in this matter. I have within the past few weeks questioned no less than six different servants of long experience in Dublin houses and they all, without exception, said that they never heard of the thing being necessary or done in houses where they were employed. Now, it is a remarkable fact how popular these sliding chandeliers are in Dublin houses, both with the rich and the poor, and if the chandeliers are not properly looked after it is lamentable to think what sickness must be caused by gas escaping. I hope you will give prominence to this letter in the hope of enlightening the public against the use of sliding chandeliers and the dangers of gas poisoning.

I am, Sirs, yours faithfully,

P. B. P.

Dublin, March 11th, 1907.

A CIRCUMSTANTIAL STORY.

Under the heading, "A Lady's Remarkable Experience," a newspaper published recently the following paragraph:—

"An extraordinary event occurred at Boston on Saturday week. A Miss Annie Wold, who resides with her mother, complained of a peculiar feeling in her chest. Shortly after partaking of a dinner consisting of boiled beef, carrots, and potatoes she lay down to rest, when she was seized with a choking sensation, and to her horror vomited a creature several inches in length of a dark yellow colour and with two bright eyes, and the hind part curled over the back in the form of a tail. The lizard—for such it was—has been preserved in spirit, and will be forwarded to the College of Surgeons. Several persons have seen it and Dr. Winch describes it as being about six inches or seven inches in length."

Note the circumstantiality of the story. The fearful beast is described with a minuteness that only a personal inspection could warrant, and the medical man is, apparently at any rate, quoted as acquiescing in the accuracy of the narrative. Dr. Winch has written to us as follows:—

"A patient of mine having previously complained of some slight throat trouble one day vomited up a thin membrane. She got it into her head that it was alive, and her neighbours were called in to see the 'thing,' when it was made out to be an animal of some description. The patient called me in three days after to look at it, and I at first thought it was a bronchial cast—anyhow I assured her that it was not alive. I said that I would have it examined microscopically. This was done, and the substance was reported by the Clinical Research Association to be a 'vegetable leaf in a partial state of digestion.' In the meantime the wonderful occurrence had been so talked about, I suppose, that it reached the ears of some reporter, for two or three days after the episode there appeared in a newspaper a paragraph in which I was quoted as saying that the animal was so many inches long."

We have come to the conclusion that there is nothing that the lay journal will not believe if only the occurrence lies outside the normal range of medicine. Within that range many newspapers will cheerfully contradict the commonplaces of science.

A CURIOUS MEDICAL ACCOUNT.

We have received from a medical correspondent an interesting little document in the shape of a bill for medical attendance on a well-to-do farmer and his family during a period of about ten years—namely, from 1842 to 1852. During this time, we understand, there were five births and three deaths in the family and several long attendances besides. The bill reads as follows: "Slaidburn, May, 1853. Mrs. Waterworth. To Visits, Medicine, and Attendance from 18th October, 1842, to 9th October, 1852, £6 8s. 6d.; by goods, £3 0s. 6d.; total due to Mr. Theodore D. Jackson, £3 8s. 0d." The bill bears at the bottom the intimation that particulars will be supplied if required and it was paid on May 29th, that is two days after it was received by the debtor. A curious feature of the bill is the item "By goods," which reminds us of the system of barter in existence at this comparatively recent period of time. Part of the payment was in kind and would probably consist of hay and other farm produce. No doubt the country medical man often receives payment in this way, but 50 years ago this primitive method of exchange was very usual.

FOR SEA-BIRDS.

To the Editors of THE LANCET.

SIRS,—The inclosed cutting from to-day's *Mirror* must surely touch bed-rock in the hunt for sea-birds:—

VARICOSE VEINS

are due to sluggish blood and weakened nerve force. When healthy, your blood and nerves are highly magnetic. When these great life centres lack magnetism you must be a prey to disease. Magnetic Leggings restore the missing force and thus cure you. Price: One Pair of Leggings, £1 1s. or 1s. 6d. deposit and seven instalments of 2s. 6d. Send measurement round calf and above ankle. Write for our valuable FREE BOOK on Magnetism. It shows how you can cure all diseases in your own home. THE INSTITUTE OF NATURAL THERAPEUTICS (Dept. D.M.), 73, Queen Victoria-street, E.C.

N.B.—Elastic Stockings wear out quickly and have never cured anyone.

The advertisement should appeal to all who have faith in mechanical wonders like the "Evans Vacuum Hair Raiser."

I am, Sirs, yours faithfully,

DOUGLAS J. MUNRO, B.S., M.B. Lond., &c.

Acre-lane, Brixton, S.W., March 14th, 1907.

A POST-CARD.

We have received the following unassigned post-card. When such evidences of credulity are forthcoming we can hardly wonder that the specious promises of quacks are widely believed:—

2/3.07.

SIR,—Seeing in to-day's paper that you have published a list of those who have killed themselves I would like to let you know I in *Daily Malta Chronicle* (address *Daily Malta Chronicle* Malta and 1d. stamp will find it) about October 1902 appeared an account of a successful experiment—or some stuff applied—which brought a strangled dog to life after being dead 8 hours and which the discoverer thinks would be equally efficacious if applied to human beings. If in *Daily Express* (a London Jd. daily) on 4th October 1902, and in *Lloyd's Budget* and *People* same week appeared an account of a successful experiment which brought cats, dogs, bees, flies, and I drowned boy (given up for dead by doctors) to life after hearts ceased beating. The subjects were asphyxiated and brought to life by being placed on a warm plate or cloth and entirely covered with the following powder after which life appeared:

Extract from Article.

"The doctor makes use in his experiment of a light salt solution saturated with oil of the body which is allowed to stand exposed in an atmosphere of free ammonia. From this solution a powder is derived and it is this powder which contains the life renewing properties."

Now Sir kindly tell immediately local authorities where fatalities took place information I re those who hanged themselves and I re those who were drowned or asphyxiated—in any cases which occurred during last 7 days—have above experiments tried immediately on bodies, saving perhaps valuable lives.

Yours &c.

THE "THERMASEP" CLINICAL CASE.

This is a metal case designed to keep the clinical thermometer in an aseptic condition. At one end of the case is a small chamber containing paraform. It is just above this space where the bulb of the thermometer rests. Paraform gives off formic aldehyde vapour. The "Thermasep" is supplied by Mr. W. Martindale of 10, New Cavendish-street, London, W.

WHAT IS PLASTICINE?

To the Editors of THE LANCET.

SIRS,—Can any of your correspondents tell me what "Plasticine," a modelling material, is made and coloured with? It has, I have found, caused a disease of the nails in a little girl who has been using it.

I am, Sirs, yours faithfully,

March 13th, 1907.

LONDON.

WANTED—A HOME.

A CORRESPONDENT, who is a senior student of medicine, but who for some eight years has been suffering from Graves's disease and whose sole worldly possession is a sum received from a benefit society of 6s. a week, is anxious to know whether there is any hospital or any home which will admit him free for two or three years. Professor Clifford Allbutt is acquainted with the case and considered in November, 1905, that our correspondent might recover if he were put under suitable conditions for acquiring rest in the open air. Perhaps some of our readers know of an institution such as is required.

FOODS FOR THE DIABETIC: A CORRECTION.

To the Editors of THE LANCET.

SIRS,—In your last issue appeared a paragraph mentioning Casold and Casold Meal diabetic breads in connexion with the name of another firm. As we are the only makers in the world of these two special diabetic breads, we shall be glad if you will be good enough to publish this correction. Thanking you in anticipation,

We are, yours obediently,

74, Regent-street, London, W., March 19th, 1907. CALLARD & Co.

THE "ANTISEPHONE."

THE "antiseophone" consists of a wax tube made in the shape of, but a little smaller than, the telephone receiver into which it fits and two small steel springs serve to keep it in position. The wax is impregnated with a volatile antiseptic oil so that it is assumed that this mouthpiece prevents infection. The use of a volatile antiseptic is, of course, clearly and may have some germicidal effect, but the evidence of bacteriological experiment seems to us to be required before it can be positively stated that the use of the "antiseophone" renders the telephone mouthpiece absolutely free from infective matters. The patentees and manufacturers are the Patent "Antiseophone" Co., Chapel Walks, South Castle-street, Liverpool.

THE HISTORY OF MEDICINE.

To the Editors of THE LANCET.

SIRS,—The following is possibly more important than any of those works mentioned in your reply to "W. H. B.": "Handbuch der Geschichte der Medizin," begründet von Th. Puschmann, herausgegeben von M. Neuburger und J. Pagel, 1902-05. Fischer, Jena. It is published in three large octavo volumes.

I am, Sirs, yours faithfully,

CUTHBERT E. A. CLAYTON,

Librarian, Manchester Medical Society.

March 15th, 1907.

Mr. B. B. Gough.—So far as we are aware, the only ground upon which a servant could claim against her employer in the circumstances suggested would be that of negligence. If he knowingly and recklessly exposed her to the danger of infection without her being aware that it existed, we should say that he might be held liable. Whether she would be likely to win her case would depend upon the evidence which she could bring to prove that her employer was negligent and that his negligence caused her condition.

M.R.C.S., L.R.O.P.—The preparation in question may give relief in some cases, but it should never be used by anyone except under strict medical supervision, for it contains cocaine and atropine. The preparation is sold under the usual conditions of pretence and extortion prevalent in American quackery.

Mr. E. E. Norris.—Yes, the person in question is a quack. We advise our correspondent to have nothing to do with him or his "remedies."

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Stewart's Instruments.)

THE LANCET Office, March 21st, 1907.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radiation in Yards.	Max. Temp. in Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Mar. 15	29.960	S.W.	0.04	72	55	39	46	47	Cloudy
" 16	29.800	S.W.	0.10	56	62	47	47	49	Cloudy
" 17	29.810	S.W.	0.04	96	54	42	42	45	Cloudy
" 18	29.604	W.	0.03	95	58	45	49	54	Cloudy
" 19	29.880	W.	...	95	53	40	40	43	Fine
" 20	30.078	WNW	0.04	102	65	43	45	49	Cloudy
" 21	30.506	S.W.	...	80	64	37	38	41	Fine

During the week marked copies of the following newspapers have been received:—The Mirror (Trinidad), Manchester Guardian, Chester Observer, Surrey Advertiser, Shelland News, Leytonstone

Express and Independent, Daily Chronicle, Edinburgh Dispatch, Hull Eastern Morning News, Daily Express, Standard, Daily Mail, Glasgow Herald, Montgomery County Times, Bristol Observer, Liverpool Courier, Yorkshire Post, Scotsman, Manchester Dispatch, Weekly Times and Echo, Chiswick Times, Sheffield Evening Telegraph, Westminster Gazette, Wimbledon Borough News, Literary Digest (New York), &c.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynaecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopaedic (4 P.M.), St. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (3.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, St. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

TUESDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (3.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Bar (2 P.M.), Children, St. Ormond-street (2 P.M.), Ophthalmic, 2.15 P.M., Tottenham (2.30 P.M.).

WEDNESDAY (27th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopaedic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), St. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (3.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Bar (2 P.M.), Royal Orthopaedic (3 P.M.), Children, St. Ormond-street (3.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

THURSDAY (28th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), St. Northern Central (Gynaecological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (3.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopaedic (9 A.M.), Royal Bar (2 P.M.), Children, St. Ormond-street (2.30 P.M.), Tottenham (Gynaecological, 2.30 P.M.).

FRIDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), St. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (3.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopaedic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Bar (2 P.M.), Children, St. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (30th).—Royal Free (9 A.M.), London (3 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (3.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, St. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (25th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M.: Papers:—Mr. L. Jones: The Operative Treatment of Ascites.—Dr. W. I. Bruce: Relation between Sciatia and Hip-joint Disease.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (20, Hanover-square, W.).—7 P.M.: Council Meeting. 8 P.M.: Dr. C. Stewart will exhibit and describe some Dental Specimens from the Hunterian Museum. Casual Communication:—Dr. J. W. Fare: A New Local Anæsthetic. Paper:—Mr. J. G. Turner: Hereditary Hypoplasia of Enamel.

TUESDAY (26th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M.: Paper:—Mr. J. Hutchinson, jun.: (1) Case of Recovery formed of Vermiform Appendix and Omentum, Obstruction by Bands, Septic Peritonitis; (2) Series of Drawings and Radiographs to Illustrate Certain Dislocations and Fractures of the Thumb and Great Toe; (3) on Volvulus of the Entire Small Intestine, Cecum, and Ascending Colon; Operation and Recovery; with an Analysis of Nine other Cases of Complete Volvulus. (With microscopic and epidiascope demonstration.)

THEATRICAL SOCIETY (Apothecaries' Hall, Blackfriars, E.C.).—4.30 P.M.: Papers:—Dr. W. E. Dixon: How Drugs produce their Effects.—Dr. N. Tirard: Opium in the Treatment of Pneumonia.

WEDNESDAY (27th).—HUNTERIAN SOCIETY (Poplar Hospital, Blackwall, E.).—4 P.M.: Clinical Meeting. Cases can be seen at 3.30 P.M.

LECTURES, ADDRESSES, DEMONSTRATIONS, &C.

MONDAY (25th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations. **MEDICAL GRADUATES' COLLEGE AND POLYCLINIC** (22, Chancery-street, W.C.).—4 P.M.: Mr. W. Evans: Clinique. (Skin.) **NORTH-EAST LONDON POST-GRADUATE COLLEGE** (Tottenham Hospital, N.).—Cliniques.—9.30 A.M.: Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Medical Out-patient (Dr. Whipple), Throat, Nose, and Ear (Mr. Carson); X Ray (Dr. Pirie). **LONDON SCHOOL OF CLINICAL MEDICINE** (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Sir D. Duckworth: Medicine. 3.15 P.M.: Mr. W. Turner: Surgery. 4 P.M.: Dr. St. Clair Thomson: Diseases of the Throat, Nose, and Ear. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat.

TUESDAY (26th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—10 A.M.: Dr. Moullin: Gynaecological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. X Rays. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. **MEDICAL GRADUATES' COLLEGE AND POLYCLINIC** (22, Chancery-street, W.C.).—4 P.M.: Dr. L. Guthrie: Clinique. (Medical.) **NORTH-EAST LONDON POST-GRADUATE COLLEGE** (Tottenham Hospital, N.).—Cliniques.—10.30 A.M.: Medical Out-patient (Dr. Auld). 2.30 P.M.: Infectious Fevers (Dr. F. Thomson at the North-Eastern Fever Hospital, St. Ann's-road, N.), Gynaecological Out-patient (Dr. Giles), Surgical Out-patient (Mr. Edmunds). Surgical Operations (Mr. Carson). **LONDON SCHOOL OF CLINICAL MEDICINE** (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. R. T. Hewlett: Medicine. 3.15 P.M.: Mr. Carless: Surgery. 4 P.M.: Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Skin.

WEDNESDAY (27th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations. **MEDICAL GRADUATES' COLLEGE AND POLYCLINIC** (22, Chancery-street, W.C.).—4 P.M.: Mr. J. Cantile: Clinique. (Surgical.) **NORTH-EAST LONDON POST-GRADUATE COLLEGE** (Tottenham Hospital, N.).—Cliniques.—2.30 P.M.: Skin (Dr. Meachen), Eye (Mr. Brooks), Medical Out-patient (Dr. Whipple). **LONDON SCHOOL OF CLINICAL MEDICINE** (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. F. Taylor: Medicine. 3.30 P.M.: Mr. Cargill: Ophthalmology. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 11 A.M.: Eye. **HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST** (Brompton).—4 P.M.: Lecture.—Dr. R. A. Young: Pulmonary Tuberculosis in Childhood and Infancy. **CENTRAL LONDON THROAT AND EAR HOSPITAL** (Gray's Inn-road, W.C.).—5 P.M.: Demonstration.—Dr. A. Wylie: Pharynx.

THURSDAY (28th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations. **NORTH-EAST LONDON POST-GRADUATE COLLEGE** (Tottenham Hospital, N.).—2.30 P.M.: Gynaecological Operations (Dr. Giles). Cliniques.—Medical Out-patient (Dr. Whitting), Surgical Out-patient (Mr. Carson). 3 P.M.: Medical In-patient (Dr. Ohappel). **LONDON SCHOOL OF CLINICAL MEDICINE** (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. G. Rankin: Medicine. 3.15 P.M.: Sir W. Bennett: Surgery. 4 P.M.: Dr. H. Cooper: Radiography. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat.

FRIDAY (29th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynaecological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. X Rays. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. **NORTH-EAST LONDON POST-GRADUATE COLLEGE** (Tottenham Hospital, N.).—9.30 A.M.: Clinique.—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Surgical Operations (Mr. Edmunds). Cliniques.—Medical Out-patient (Dr. Auld), Eye (Mr. Brooks). 3 P.M.: Medical In-patient (Dr. Leslie). **LONDON SCHOOL OF CLINICAL MEDICINE** (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. R. Bradford: Medicine. 3.15 P.M.: Mr. McGavin: Surgery. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 12 noon: Skin.

SATURDAY (30th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations. **LONDON SCHOOL OF CLINICAL MEDICINE** (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. Out-patient Demonstrations.—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on *one side of the paper only*, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1906, which was completed with the issue of Dec. 29th, were given in THE LANCET of Jan. 5th, 1907.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1906 are now ready. Bound in cloth, gilt lettered, price 18s., carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2s., by post 2s. 3d.

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	 £1 12 6	One Year	 £1 14 8
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Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

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The Lumleian Lectures

ON

THE INCREASE OF INSANITY.

*Delivered before the Royal College of Physicians of London on
March 14th, 19th, and 21st,*

By G. H. SAVAGE, M.D. LOND.,
F.R.C.P. LOND.,

CONSULTING PHYSICIAN FOR, AND LATE LECTURER ON, MENTAL
DISEASES, GUY'S HOSPITAL; CONSULTING PHYSICIAN TO
THE IDIOT ASYLUM, EARLEWOOD.

LECTURE I.

Delivered on March 14th.

MR. PRESIDENT, FELLOWS, AND GENTLEMEN,—I have little doubt that each of my predecessors has in turn experienced a certain apprehension before he has delivered, with due imperturbability, the Lumleian lectures. In my own case the feeling of pride at the honour bestowed on me by the selection of our President was immediately succeeded by some uncertainty as to the precise subject which I should select, and the apprehension still persists lest I should in any way fail in my duty or fall short of my responsibility to you. Wishing to do my best I have naturally selected the subject which my special experience of 40 years should enable me to treat with some authority. But as I have not thought it desirable on this occasion to hazard any new theory or treat any special point with all the detail of thought and illustration which it would undoubtedly require, I trust that the apparently somewhat discursive nature of my remarks upon the wider issues may be attributed to a desire to lay before you facts which are of general rather than highly particularised significance. At the present time the subject of the increase of insanity is being very carefully considered, not only in England but in all civilised countries, and I feel that the very fact that it is being so considered has increased my difficulty. In all directions, both in the medical and lay press, articles have appeared on the subject, so that I have little doubt that the opinions which are the result of my own experience will frequently be found to coincide with the opinions already expressed by other observers. At the outset I must acknowledge my own definite conviction that there is a steady increase in the numbers of the insane, and that this increase shows a definite relationship to the progress of civilisation. I do not myself think that this estimation necessarily implies the hopeless degeneration of the race, nor do I think that it furnishes an authentic basis for dread as to the future of the minds and bodies of our successors. With the multiplication of rules and regulations it becomes more and more difficult to characterise individual groups, but my own particular experience seems to indicate that many cases are attributable rather to social misfits than to material brain disease. In describing these and similar cases I may say that I rely upon my own observation supported by such statistics drawn from official sources as I may find it necessary to employ in connexion with the more recognised groups.

Let me, however, indicate the lines on which I propose to move. First of all, before studying the question of the increase of insanity it is essential that we should recognise what we mean by insanity. Of course, I take primarily the medical standpoint, but I have my doubts as to whether the social one is not, after all, the more practically important of the two. We find ample evidence that with no merely medical opinion on unsoundness of mind is the public easily satisfied; no doubt it would often be much better if it were. Next I will examine briefly into the more generally accepted causes and endeavour to show if it is possible to find amongst them any indication of the actual lines of increase. So that in a word the question will be, What are the special forms of insanity which are increasing? What are the causes which are more in evidence than they formerly were? And what hitherto unrecognised moral or physical causes are tending to produce, or to reproduce, mental unsoundness? And the evidence which I can offer in reply to these questions will, I hope, enable you to form conclusions as to the validity of the reasons given for the increase of the certified or uncertified insane.

To begin with, in judging the conduct of any person supposed to be of unsound mind it must be recognised that No. 4361.

similar conduct may arise from totally different disorders or circumstances and also that the mind is a very complex thing which has many ways of expressing the same feeling. Take, for example, the exaltation of ideas in a patient believing himself to be a king or a person of distinction. Such an idea may correspond with a temporary increase of pulse rate and I have seen it prominent or suppressed as the pulse varied. It may succeed to the loss of judgment as a feeling of buoyancy in general paralysis of the insane; it may be associated with the temporary disorder produced by brain-poisoning—say by lead or alcohol; or it may be a slow growth in some "mute inglorious Milton" or lonely idealist, who, possibly building on the "might have been," finally recognises in himself or herself a scion of royalty or an inspired poet. Or again, perhaps in a more advanced stage of degeneration of tissue the patient may have begun by feeling that he was watched or spied upon, until at length he discovered that all this was merely the protection essential to the movements of a royal personage—himself. In each case the conduct of the patient is similar, though the underlying ideas are so different. Similarly, I have often had to point out that what might be a reasonable act in one person would be insane extravagance in another. I mention these facts here because in determining what is meant by insanity or what is to be done for it the circumstances and environment have always to be considered. And notwithstanding their mutual points of resemblance, no one pathology or treatment is applicable to all such cases.

A question which I am often asked is whether I believe that certain persons only can be driven insane, whether the rest can never be driven mad—whether in regard to these latter anything whatever in the shape of exciting cause will produce definite symptoms without the insane proclivity. My reply is that almost anyone may have delirium, which is temporary insanity; that almost anyone given certain physical causes may have general paralysis. Also, as is sufficiently evident, that with advancing years the powers of the mind, both on the motor and sensory sides, may be impaired or disabled before the other functions of the body. Yet this notwithstanding I still believe there are some persons who can hardly be driven mad by any outside stress or emotional cause. And surely it is worthy of consideration that so many very aged persons retain their senses and reasoning power almost unimpaired until the very last. On the other hand, that there is a class of persons accurately described as "neurotic" is very evident; and it is equally certain that it is this class which provides the largest number of sufferers from insanity and allied disorders. It is in regard to these that I have stated my belief that there is no ground for supposing the increase to be of an alarming extent.

But it may be well here to consider what I mean by "neurotic," for I find it regarded as such a convenient term that it has frequently been made to include almost any nervous or mental disorder not showing very marked symptoms. To be civilised, as a sane person, implies the capability of reacting normally to the changing conditions of one's surroundings, so as to interfere as little as possible with the interests, safety, and welfare of other persons living under similar conditions. With increasing complexity there must be an increasing power of adaptation, and, as might be expected, this will often be found associated with a deficient or an undue mobility. It is in this abnormality of reaction to surroundings that we find the true empirical basis of neurosis. Now this may arise from many diverse conditions. It may be a result of weak, degenerating, or insane parentage, or it may arise from causes which materially interfere with the nutrition of the higher nervous organs, from toxic influences, for example, or from generally debilitating causes, such as excesses of any kind. The point to consider is whether any of these influences have been acting so forcibly as to render the civilised races at the present time more likely to break down along nervous lines. In regard to this tendency the reports of the Commissioners in Lunacy for England, Scotland, and Ireland will be found most instructive. We are fortunate in this respect that the Irish Commissioners last year, taking it for granted that there was an increase in the numbers of the insane, addressed special inquiries to the various medical officers of the asylums on this point and elicited their individual opinions in regard to it. Special stress, I may remark incidentally, was laid upon the danger of hereditary predisposition and excessive indulgence in alcohol. I think, therefore, that conclusions based on these reports, in so far as they agree, may be taken

as the composite opinion of asylum physicians as to the causes of any such increase.

And now to speak a little more definitely on my first point: I still believe that what Hughlings Jackson said many years ago is true—viz., that we physicians connected with insanity resemble gardeners rather than botanists, that the fact must be recognised that we classify for convenience rather than upon a scientific basis, because in point of fact no such basis, or finality of mode, has as yet been discovered. And perhaps little wonder, since many have to be treated as lunatics in whose brains and nervous systems we have found no change whatever. Unfortunately, this necessity of definition and classification to which I have referred may sometimes lend itself to misinterpretation, as in the pseudo-legal idea—which I regard as neither reasonable nor convenient—that every person of unsound mind is a lunatic. Obviously there are many persons of unsound mind who are neither dangerous to themselves nor to others—why, therefore, regard them as aliens? The true difficulty is that the disease insanity, as a definite entity, does not exist. Yet one might almost conclude from the elaborate articles which have appeared in our leading daily journal that it does, and that it is as definite in its symptoms and its origin as cancer or pulmonary tuberculosis. It is impossible for the physician to view abnormalities of mind, whether congenital or acquired, as having a common origin and requiring a similar treatment. There is no such thing as a bacillus of insanity. I have dwelt upon this point because one of the many difficulties which the study of the insane involves is the necessity of regarding them from so many different standpoints. The medical man concerns himself chiefly with the evidences of bodily disease to be discovered in the brain or one of its servants; the lawyer looks not so much to symptoms as to the questions of reason and responsibility; whether, in fact, the individual can recognise what he is doing and the consequences of it. The public at large considers chiefly questions of conduct, asking whether a person is dangerous to himself or to others. *Apropos* of the latter, we constantly meet with statements that many people are placed in asylums because they are troublesome rather than because they are dangerous; and it is also worthy of remark that there are many who desire that the feeble-minded and eccentric should have greater or even perfect liberty, so long as they are not a social danger. This point is, I think, rather well illustrated in the peculiar distinctions recognised on the popular side—thus, persons are spoken of as being “beside themselves,” or “out of their senses,” or “out of their minds.” To these you will note that I have already added my own conviction that many are really “out of their surroundings” and thus are aliens.

The conclusion then follows that, there being no definite entity of insanity, there can be no one comprehensive definition of it. And that the person is sane or insane in relation to his own standard and not to any existent arbitrary one, except the conventional arbitrament of civilisation. And as this varies the truth of my former remark becomes evident, that what is reasonable conduct in one man under certain conditions may be plain madness in another differently situated. I often think of a splendid young animal whom I saw—the son of a distinguished father who rightly judged his son to be an anachronism—out of place in fact; and considered that he would have made a fine knight in the Middle Ages, and perhaps even now might make a good cowboy in America. It becomes evident from such a case that there may be some who have a reason for attributing the causes of their insane position to their wrong surroundings. And here I would point out, as I have already hinted, that there is a sense in which insanity is merely a question of degree. For example, a small amount of miserliness may be all right; but, when you find it developed into the habits of the recluse, who starves himself though he has plenty of money, avoids all society, and neglects cleanliness and all the simpler conventions of life, he is treated as insane. Again, I knew a recluse, with plenty of money, who lived a hermit's life for 30 years or more, prowling about the streets at night, and lying in bed during the day; yet no steps were taken, as he did not interfere with society. But when called to see a similar case not so well off, I found that the authorities had already been called in. His small house being neglected was regarded as insanitary and he was removed to an asylum. Thus we see that similar conduct is, or is not, practically regarded as insanity according to the conditions. And if

there should be some who regard this view as of little importance from the practical or statistical standpoint—as referring, in fact, to a very small area in the wide field to be covered by the specialist—as not affecting in a vital degree the estimated sum-total of the insane, I am not in agreement. I still maintain that very many of the chronic insane owe their position largely to their surroundings, and the part which their surroundings and circumstances have played as a factor in the determination of that position is precisely what it is often important to consider before any reliable statistics can be built up in regard to the mental evolution or degeneration of the race.

With regard to a certain degree of a particular habit or feeling being considered normal, but its excess insanity, I may give the example of a very devoted husband who with advancing years dreaded the absence, even for a very short time, of his wife. Later he began to suspect that she was more absent than was necessary. Finally, though there was not the slightest ground for suspicion, he demanded from her a confession of her misconduct, calmly observing that he would forget and forgive. Thus, the overgrowth of natural affection and the suspicion of an imaginary sin have led, I fear, to a permanent delusion wrecking two lives. Where are we to look for the material basis of such a delusion? The conditions are still more complicated when the person proves to be a social misfit. There are some, like my cowboy youth, who are out of harmony with their surroundings from the first. There are others who as a result of education, disease, or other circumstances or causes, pass into a social grade different from their own. I have known public school and university men who have proved quite unfit for their natural home and yet they have done admirably as artisans. Are we to have a pathology for such conditions? Of course, a certain number of these social failures add to the numbers of the insane in our infirmaries and asylums. Undoubtedly, some may say there is some brain defect in these persons to account for their degradation; but how about the change of reformation; and in regard to those who have been converted, are we to have a pathology of conversion as well as of perversion? At any rate, the fact remains that not only from the social but from all other standpoints insanity is judged rather from conduct than from any known mental symptoms.

I will now in order proceed to consider the insanity of brain disease, the insanity of brain intoxication, the insanity of the truly neurotic type, the insanity of habit or association, and the insanity of function, simple disharmony, or want of accommodation. In considering these points I will give my experience as to the relative increase among them. First, then, there is a considerable amount of insanity depending upon natural decay of the nervous centres chiefly represented in the brain. The Commissioners give a table showing a considerable increase of longevity among the surviving senile insane. The chronic insane in asylums are like pensioners; they are removed from the stress and anxieties of life, they are carefully tended, and sometimes their very mental defect will lend itself to a calm which itself is favourable to a long life. Again, it is certain that, whereas in a former generation the old people were kept and guarded by their relatives, these latter are now more easily persuaded that they would, in their indifferent or mindless states, be happier in an asylum than elsewhere. And the infirmaries, on their part, are only too ready to transfer to asylums those who are not able to be of service in the wards and for whom they can get a bigger grant from public funds if they are sent to an asylum. Hence, the insanity of old age does certainly represent a considerable increase of the insane population. The forms of insanity associated with old age are not special in character, though many of them exhibit analogous features associated with loss of memory and loss of the senses of time, place, and relation. The insanity associated with premature decay, with toxic brain infection, is best represented by general paralysis of the insane. Here again, without doubt, there is considerable increase. In England, Scotland, and Ireland, all three, the Commissioners' reports prove this. Although we are at present unable to say that this disease proceeds from one definite source, there seems to be little doubt that syphilis added to alcoholic indulgence in city residents constitutes the chief cause. In England the progress is steady and it is interesting to note that this disease is now more prevalent among women than it used to be. This is markedly observable in Scotland. Women will have men's rights and with them they incur further risks. 40 years ago the

medical officers of asylums in Ireland used to come to Bethlem Hospital to see cases of general paralysis because they wished to assure themselves that they were not overlooking the disease. Personally I visited many Irish asylums in those days and I found very few cases of the disease, which now is common enough, particularly in the Irish asylums near cities. In America a similar experience has been recorded among the negroes, who before the Civil War rarely provided cases of general paralysis. Now they are common enough. In the last report general paralysis is stated to be increasing more rapidly in Edinburgh than in Glasgow. This seems hard to explain but I am inclined to think that more careful clinical examination in Edinburgh may account for the fact.

The next group to which I call attention is in many ways important and interesting, particularly at the present time, when toxins are the favourite explanation of most morbid states. I would, however, recall what Sutton said many years ago, that though there was doubtless much to be learnt from an observation of the relationship between micro-organisms and disease, yet, as effective causes, their importance might be over-estimated and their operation misunderstood, that just as we lived on, and aided by, them when healthy, so it was when we began to fail in any direction that the microbes were ready to prey on us. That mental disorder amounting to insanity may depend upon toxic influences is too well known to require much illustration on my part, yet it is perhaps worth while to note a few of the special forms of disorder which follow intoxications of one kind or another. First, then, there is generally a progressive affection beginning with the most highly specialised parts leading to defect in the last and most complex attainments, the continuance of such infection leads to further loss of power, and, as Hughlings Jackson has pointed out in his "Factors of Insanity," a letting loose of functions dependent on what he has called the lower or subordinated mental strata. It is thus that we get with loss of power, restlessness and delirium. A still further exposure to the influences leads to destruction of the parts and the annihilation of the functions. The result is a complete parallel to the decay met with in old age, which, I suppose, justifies Metchnikoff in his suggestion that senile changes depend on micro-organisms.

I have already spoken of neuroses and given some description, if not a precise definition, of them; and now, in natural order, I propose to consider the special forms of insanity which may be said to possess this common factor, that they are usually associated with insane or degenerating parentage. This class provides the largest number of long-lived residents in asylums, who used to be grouped together as demented. They generally come of insane stock and tend to transmit their neurosis, in one form or another, to their descendants. They are more liable than others to break down under slight stresses; *ceteris paribus*, their neuroses appear at the critical periods of life, such as adolescence, puberty, and, in the case of women, child-bearing and the menopause. These patients show a special liability to relapse after recovery, and, as a sequence, to establish a habit of recurring mental disorder—mania, melancholia, as the case may be. This morbid habit may become more and more organised and pass into regular circular insanity. The ease with which morbid mental processes are started in such cases is exemplified in the manner in which hallucinations of the various senses appear and develop; having appeared, they lead on in natural order to delusions of various kinds, to some extent coloured by the age, sex, education, and surroundings of the patient. But that persons even with fully-organised delusional insanity have any specially recognisable affection of their brains I deny. I daresay that in many there is some change of condition and in many also a defect of the highest powers; but as yet I am convinced we shall not learn much even from most careful histological observation. Without being a pessimist, I fear my experience is that such persons are slowly increasing in number and that no amount of drug treatment will have any effect upon them. If any good is to be done it seems to me that it is rather to be hoped for from the methodical and continued treatment followed in asylums. What cannot be cured must be endured and I fear that persons suffering from fully organised delusions are as little likely to lose them in many cases as they are to change their features.

With the above we have to consider, as depending upon a neurotic heredity, those who furnish examples of certain,

often recondite morbid modes of mental association—persons, in fact, suffering from so-called obsession. No reasoning seems to affect the beliefs or tendencies of these persons, yet in all other relationships their conduct may appear to be perfectly sane. Thus, a patient told me he knew it was a mistake, yet he dared not touch anything without gloves; another was afraid to sit in a chair without a preliminary dusting. He admitted that this was useless even if there were infection in the chair, all the same he must go through with it. Another patient, having been once bitten by a dog, was never free from the dread of hydrophobia, and though no signs existed of the dog ever having suffered from rabies, yet he could not go near the city where the accident happened. That with some of these morbid associations a physical basis bears a part I must admit, for this latter gentleman only comes to consult other physicians or myself when he is suffering from general symptoms of ill-health. On the whole I am not prepared to say whether there is any material increase among those suffering from obsessions.

To complete this part of the subject I must name the allied sufferers from the *folie de doute*. This may be taken to depend on different causes in different persons. The highly-trained legal mind may be so evenly poised that it cannot come to a conclusion; and the individual who suffers from this condition, or from its allied state of *Grübelnucht*, is suffering from a disorder which I cannot associate with brain disease. In regard to development the manner in which a simple natural idea may pass into a morbid one is shown in the following case. A well-educated man of good social position fell in love with a lady of good birth who in consequence of the ruin of her father found it necessary to give dancing lessons in order to earn money. The idea that she might expose her ankles to strangers so possessed him that he felt life intolerable, and no amount of argument that the lady was only teaching girls produced any effect. Again I have met with several doctors' wives who have developed an insane jealousy in consequence of their husbands attending midwifery cases. Thus, obsessions developed after the manner I have indicated have had serious practical effects, though in the cases to which I have referred the seclusion of the sufferers was not required.

Again, the perfectly natural way in which ordinary feelings may lead to insane developments is well illustrated in such cases as the following. A young man early in life becomes deaf; at first he feels the loss to be a very real and personal one, but he is content to do his best under the new limitations. Later he experiences several disappointments, probably in love; no doubt depending on his unfitness. Slowly he builds up a delusion that people shun him; gradually he becomes convinced that there is an organised system of annoyance. An insane or violent act may be the first indication of the progressive mental disorder. This is a case clearly associated with physical defect, but one constantly meets with patients endowed with a mere peculiarity which they think influences people against them. For example, a man with a scar on his nose believed that this was looked upon as the "mark of the Beast." Another, who had led a seafaring life, was certain that every one recognised in his scar evidence that he had had syphilis. Apart from personal defects or peculiarities one meets with many in whom a disharmony with the social environment has given rise to a morbid mental growth. A widow with small means has to reduce her expenditure. She believes her neighbours shun her; from this she develops a whole system of suggestion, innuendo, and annoyance, which may cause her to injure herself or her children, or perhaps to appeal to the police. Such cases are of everyday occurrence and I rather presume they tend to increase with the complexity of urban life.

Allied to such cases are those which I place under the heading "conscientious." Almost daily I see cases, generally young, of both sexes who, living their homelife and regarded as most quiet and well-behaved persons, have nevertheless slowly withdrawn from all intimate friendships, they have taken to self-improvement, they lead laborious days and often studious nights. They are said to be scrupulously conscientious. I often find them morbidly sensitive. Often they go on thus for years before it is discovered that brooding has led to the hatching of delusions of persecution. Here I suppose there is probably an unhealthy nervous system, but I do not think it is such a one as will in the material part of the brain be shown to be defective. This kind of case is frequently illustrated in the only sons of

widows who live their quiet life surrounded by female relations only. This class includes a large number of persons who drift into delusional insanity. I am fully aware of the fact that there are hundreds or thousands living similar lives who do not break down nervously, and that there are other elements in the situation. What I wish to enforce from the standpoint I have chosen is that such persons must be treated by change of condition and not merely by bedside study.

It will be seen that in all the cases to which I have been referring I deny the existence of any material pathology. I merely say that in those cases where the mutual reaction shows a distinct degrading influence in the surroundings of the individual it is more or less hopeless to look for any real uniform material cause in the person himself. Of course, I allow that variable bodily states may dispose a person to be more readily affected by his surroundings and therefore more unstable. But I shall have failed altogether if I have not shown that there are many nervous conditions in which the visible defect is one of arrangement and accommodation rather than destruction of any portion of the material basis of mind. I cannot therefore accept much that Hughlings Jackson has written in his "Factors of Insanity," because while he regards mental symptoms as the morbid product of the brain he does not sufficiently recognise them as a resultant of the forces of the environment. That every idea and every delusion have a representative in some material change in some part of the nervous system of course I do not deny: but that there are always definite changes which are the equivalent of insanity, I do deny. Before leaving this part of my subject I must refer to functional mental disorders. I cannot admit that all these have any material pathological basis. In fact, I still maintain that there are such things as functional mental and nervous disorders.

Let me quote what the late Dr. H. G. Sutton wrote on this matter: "Failure of function leads to organic destruction. It used to be taught that structure makes function, but it is the reverse, just as the blacksmith makes the horseshoe, fitting the iron for service. In nature it is evident that all function is making union—a living and a loving—while in disease there is disunion." Finally, unless we admit the supreme importance of surroundings both in giving rise to and in sustaining mental perversion, we cannot fully recognise the equally supreme necessity of judiciously modifying those surroundings and conditions in order to effect a salutary change.

To pass on, there was a girl admitted into Bethlem Hospital suffering from acute mania. After some weeks, quite suddenly, all the maniacal symptoms disappeared but she was paraplegic. The state of paralysis lasted for some weeks, to be again replaced by mania, which in its turn was again followed by paraplegia. Eventually the paraplegia slowly passed off, leaving the patient sane in body and mind. Certain other cases in which neuroses are interchanged are interesting: thus, sufferers from asthma or hay fever will lose these affections while suffering from another form of neurosis. I cannot find anything but a dynamic pathology for some of these cases of sudden cure. I have known patients apparently demented for years suddenly, without any bodily change, wake up perfectly sane and with no loss of mental power. A watch may lie inactive, for want of winding up, for years and yet not decay. The mind seems capable of resting in the same way. In this case we must faintly call it apparent dementia.

The next part of my subject—a brief reference to what may be called the ordinary forms of mental disorder—is, I think, less likely to give rise to any differences of opinion. First there is mania, the loss of higher mental control, which really extends from delirium to hysteria. As Jackson has pointed out, the removal of the higher control facilitates the demonstration of the lower activities of mind and also allows them to assert themselves in an abnormal manner. I am then inclined to think there is an increase, though not a very large one, in the cases of acute delirious mania—grave delirium, as it has been called. This disease is doubtless the result of some toxic influence and will furnish evidence of what I have said elsewhere that anything which will produce temporary delirium may give rise to delirious insanity. It may follow infectious fevers, alcohol, or some auto-toxins, arising, I have little doubt, in many cases from initial brain changes. I think, judging from my own personal experience, that the result—or, at any rate, one of the results—of reduced consumption of alcohol is that there are

found fewer cases of grave delirium arising from or following delirium tremens. As to ordinary mania, the general opinion I find among the metropolitan asylums is that there are fewer cases of simple mania than formerly, and that certain forms of mental disease which used to begin with mania are now more commonly seen in a melancholic state. This is said to be the case in adolescent insanity and also in general paralysis of the insane. This conclusion has by some been attributed to the part played by influenza in starting the neurosis, for there is no doubt that, as a rule, melancholic states are more common after this disease.

Next as to melancholia. You will gather from what I have just said that my own experience, which appears to be supported by that of most asylum physicians, is that there is an increase of melancholic patients and also of melancholic symptoms in the various forms of insanity. The self-conscious youth is religiously depressed. The girl with amenorrhoea is contrite and self-accusing. Middle-aged men and women are suspicious and doubtful as to their social position or their conduct in the past; with advancing years comes a dread of poverty and the workhouse, and perhaps the desire to leave a world where they feel that they have already begun to outlive their welcome.

The next general form of insanity, to which I have already several times referred, is so wide and so far-reaching that I am not surprised to find an almost universal belief in its increase. Dementia is the termination of many forms of insanity. As I have already pointed out, we have to deal with the fact that the insane live much longer than they did: they remain till the end in asylums and are frequently recognised in statistics. Again, a tendency to senile disorders leads naturally to an increase of senile dementia. So there are more old people to become insane and the insane live long enough to become old. I have little doubt that the various types of youthful disease tend more rapidly to mental weakness than they did in former years, but this is rather a belief than a proved fact. As to the various forms of dementia—such as those depending on syphilis, general paralysis, or alcohol—some are increasing, others are stationary, at present.

Under the head of "functional disorders" I referred to the truly neurotic insanities and I stated my conviction that they were increasing. I would point out that here again we ought to be on our guard. For it is pretty certain that these persons also accumulate in the asylums and live longer lives there. I certainly think myself that many among such persons might be allowed to live free at least from asylum control. I have not referred to the large class of idiots, imbeciles, &c., as I do not personally claim enough knowledge to speak about them. I do not, however, think it can be denied that there is a very large and probably increasing group of social failures, the failure depending on some nervous want. Some of these are physically unfit, others are wanting in their senses, while many are morally weak and unfit for ordinary social life. Whether these are increasing in proportion to the population I cannot say, but that in the future they will have to be seriously considered I do not doubt.

And now to sum up shortly what I have been aiming at to-day. I have desired to make it clear that I cannot accept any definition of insanity as a disease. I have endeavoured, briefly to delineate its social, legal, and medical aspects, each of which differs from the other. I have referred, in the time at my disposal, to the forms of mental disorder which appear to be the most interesting and worthy of consideration at the present moment. I have expounded my belief in the existence, or the non-existence, of a pathology for such cases, and I have given a few details here and there as to the increase of the various groups. If I should be considered to have expressed too hasty a conviction in regard to certain cases, which, being out of harmony with their surroundings and obnoxious to society, are in our day treated as aliens: I would nevertheless repeat my opinion that although insanity cannot be predicated of that which is neither a mental nor a physical organism, although I cannot go so far as to say that the insanity lies in the environment itself, yet in not a few cases the actual source, and especially the sustenance of the disorder, do lie in the surroundings rather than in the patient; and to a judicious and well-advised modification where possible of the surroundings and circumstances only can those interested look, with any prospect of success, for the desired safety, convalescence, or cure.

An Address

ON

THE RELATIONS OF LARYNGOLOGY AND
RHINOLOGY TO GENERAL PRACTICE.*Delivered before the Medical Society of University College
Hospital on March 13th, 1907,*BY SIR FELIX SEMON, K.C.V.O.,
M.D. BERLIN, F.R.C.P. LOND.,

PHYSICIAN-EXTRAORDINARY TO HIS MAJESTY THE KING.

MR. CHAIRMAN AND GENTLEMEN,—Whilst specialism in medicine has never enjoyed the favour of the profession in this country, laryngology and rhinology from their very inception as a special branch have been particularly unfortunate in this respect. When 30 years ago I began to practise as a specialist laryngology was indeed in a sorry plight, both so far as its popularity and its official recognition were concerned. The laryngoscope was almost universally looked upon as "a physiological toy"; special provisions for teaching its use had been made in hardly any of the general hospitals; throat departments, where they existed at all, were placed under the care in rotation of members of the assistant staff, special knowledge of laryngology evidently not being looked upon as a necessary requisite for teaching it; the special hospitals were altogether under a cloud, and the most prominent representatives of laryngology in anything but high favour with their fellow practitioners. A lurid illustration was given of the general feeling existing towards laryngology at that time by an address on "Specialism in Medicine" oddly enough delivered before this very society in 1881¹ by a respected leader of the profession, from which I quote the following significant passage:—

"There are many other points on which I should have liked to speak to you, of the specialisms that have so limited an area, that it is quite impossible for any man, who is restricted to any of them, to make an income, unless he does so by inducing his patients to pay him needless visits; such, for example, as to touch his throat with something every day, to turn the screw of his instrument for the back two or three times a week, or to do something to the Eustachian tube with equal frequency. But what I have said is enough to guard you, I hope, from falling into these mistakes, these 'worse than crimes, these blunders.'"

Although these statements were not allowed to pass unchallenged, and although the author himself deemed it prudent subsequently to modify his violent attack, there is no doubt that his remarks accurately enough represented the general feeling with which laryngology—rhinology was then hardly out of its teens—at that time was looked upon in this country.

That a subject, which was thus held in ridicule and even contumely by the leading spirits, should not have met with much acceptance amongst the rank and file of the profession is but natural. Indeed, without much exaggeration it might be stated that, unless some palpable lesion, such as considerable enlargement of the tonsils, was present the treatment in those times of throat affections of any kind on the part of the general practitioner was of touching simplicity and uniformity. First of all, a gargle of some kind was prescribed; then, if this had been of no avail, the patient was given some glycerine and tannin to paint his throat with; next, the practitioner himself painted his client's throat with a solution of nitrate of silver; and, finally, when this too had failed, the uvula was amputated. Indeed, I am not quite sure whether one can speak of this period as entirely past and gone.

Already at the time, however, when the just quoted scathing criticism was passed the outlook had become somewhat brighter. In glancing over an old paper of mine on the treatment of acute and chronic laryngitis in adults² I find that in 1880 I ventured to predict that laryngology in not too distant a time would occupy a position equal to that of other recognised specialties, and this prophecy began to be fulfilled already in the following year when at the London International Congress of Medicine the work of the subsection of laryngology, which was the first official recognition of the legitimacy of laryngology as a special

subject, convinced a good many former opponents that there was more inherent good in it than it had so far been credited with. Since then a quarter of a century has elapsed, and the question may now fairly be asked whether my prediction has come true in all respects. Well, it can, of course, not be denied that we have made a good deal of progress all along the line. The disdain in which laryngology was held has to a great extent given way to a better understanding. Questions of personal unpopularity of its representatives are no longer allowed to influence an appreciation of the subject itself. Special departments for throat diseases nowadays exist in all the large London hospitals and are in most of them confided to the care of specialists, and the special hospitals have emerged from the unpleasant position they held 25 years ago. Further, a special section for laryngology and rhinology is now granted in conjunction with otology at all the meetings of the British Medical Association, and there will be a section of laryngology and rhinology in the Royal Society of Medicine, which is now in process of formation, whilst up to the present the special subject has been cultivated in two societies devoted to its study.

Thus, certainly, considerable advance has been made since 1881. Candour, however, compels me to say that much still remains to be desired. Even now specialists are but too generally considered as belonging to a lower grade in the medical hierarchy—as if a man, who confined his labours to a limited sphere, and did lasting good work in this, was not as good as one who worked on many subjects without achieving distinguished success in any of them! But this consideration does not seem to be generally admitted. Witness the rarity with which positions of honour are accorded to laryngologists in the colleges and at the medical societies; anomalous restrictions are still placed at some hospitals upon the incumbents of the throat departments preventing them from performing external operations, so that the ridiculous position may be, and indeed has been, engendered that a man who holds the record of the world for a particular operation is not allowed to perform it at his own hospital; and, finally, and worst of all, the importance of the subject for their future practice is not made clear to the students, there being no compulsory attendance of stated duration at the throat departments, nor any certainty that the knowledge of the candidate with respect to this special branch will be tested at any of the final examinations.

When I speak like this, gentlemen, I am afraid that you will look upon me as one of those well-meaning but ill-advised persons who endeavour to burden still further the already over-burdened student, and this, indeed, has been the motto under which my repeated requests for compulsory attendance at the throat departments and testing of the candidate's knowledge at the final examinations have been declined by two of the examining bodies with which I am connected. But, gentlemen, believe me, nothing could be further from my intentions than to do such a hateful thing as to throw additional burdens upon you. The remedy for what I conceive to be the at present somewhat anomalous condition of medical education in this country lies, in my humble opinion, in a readjustment of the curriculum and in considerably more time being given to the study of those subjects which will be of practical importance in the life of the future general practitioner, whilst those subjects which though admirable in themselves are of little or no use for general practice, and are as a rule almost immediately forgotten when once the examination has been passed, should be proportionately restricted to their proper limits.

This is not the occasion to enter further upon this subject beyond saying that fortunately I do not stand alone, but that the justice of what I have just been saying is now being generally recognised, and that a strenuous effort is being made just at this moment to bring home to the authorities the necessity of a change in the sense that greater scope should be given to clinical medicine during the curriculum. What we want is not, of course, to educate our students to be specialists in every branch. Such an undertaking would be impossible in view of the limits of the time of study. But it ought to be possible, as it has been found to be in other countries, to teach sufficiently every student the use of the instruments of precision to be able to diagnose simple and straightforward cases of any kind, and not through ignorance of these methods to let cases, which at their commencement would have been perfectly amenable to treatment, slide until they are past help and recovery. That the laryngoscope

¹ Oct. 15th, 1881, p. 655 et seq.
² Jour., Jan. 24th, 1880.

and rhinoscope belong to these instruments of precision I hope to be able to show you from a few examples which graphically illustrate their importance.

If it were only for the sake of the laryngeal complications of tuberculosis, every practitioner ought to be able to discern for himself in a case in which a phthisical patient complains of his throat, whether there are actual tuberculous lesions present in the larynx or not. The fact has been ascertained by reliable statistics that every seventh person in this world dies from pulmonary tuberculosis. Again, it has been found that every fifth person suffering from pulmonary tuberculosis has got a laryngeal complication. Thus, in other words, on the average every thirty-fifth person coming under your care will be found to be afflicted with a serious complication of one of the most serious maladies we have to deal with. And this complication does not merely arise in the last stages of pulmonary tuberculosis, but is present in an unexpectedly large proportion already at its commencement. Last autumn I had, as a member of the consulting staff of King Edward the Seventh's Sanatorium at Midhurst, to pay my first visit of inspection to that institution. At that time there were 67 inmates in the sanatorium. Not less than 17 of these—I found to my own surprise—were shown to me as suffering from their throats in one way or the other, and of these not less than 14 were found to have genuine laryngeal tuberculosis. This number practically corresponds to the general percentage of laryngeal complications in pulmonary tuberculosis which I have given you. But the surprising thing is, that—admission to the sanatorium being strictly limited to the very early stages of pulmonary consumption—the proportion of laryngeal complications should have been so great already in these early stages. In almost all these cases it was possible to hold out a hope that with complete vocal rest and appropriate local treatment in some of them it would be possible to arrest the laryngeal complication. Three weeks ago I again inspected the sanatorium. The personnel of the inmates meanwhile had, of course, considerably changed, but the percentage of throat complications at the time of my visit was exactly the same—viz., 20 per cent.—and, what was most pleasing, in a good number of the patients afflicted with laryngeal tuberculosis, whom I had seen on the occasion of my first visit, considerable improvement or even arrest of the disease had been obtained. It may be found, of course, on longer continued observation that the percentage of laryngeal complications in these early stages is somewhat smaller than it was on the occasion of my two visits, but even if this were so, are not the facts just stated alone sufficient to show you the importance of the laryngoscope and to justify my demand that every practitioner should be acquainted with its use?

Let me give you another illustration. A few weeks ago I introduced a discussion on the diagnosis and treatment of laryngeal cancer at the Medical Society of London. In my introductory remarks I stated that I had seen in private practice between October, 1887, and December, 1906, 212 cases of malignant disease of the larynx. Of these 136 were intrinsic and 76 extrinsic or mixed. (I should state here that according to general custom all cases of malignant disease of the larynx are nowadays divided into two large classes—viz., the intrinsic, which comprises the cancers originating within the laryngeal cavity, and the extrinsic, which comprises those cases in which the disease is situated on the epiglottis, aryepiglottic folds, or the oesophageal aspect of the cricoid cartilage.) These two classes diametrically differ from the therapeutic aspect, inasmuch as the intrinsic variety, if only diagnosed early enough, permits of a prognosis better than that of cancer in almost any other part of the body. Indeed, I was able to state that of the 25 cases of intrinsic cancer of the larynx, which I had operated upon by means of thyrotomy, not less than 80 per cent. had been lastingly cured. Most of these patients have a good or fair, a large proportion an astonishingly good, voice, and hardly any of them is prevented from following his previous occupation.

Extrinsic cancer of the larynx, on the other hand, can only be attacked with any prospect of success by total laryngectomy and removal of the cervical glands. The mortality from this operation, although no longer so appalling as it was some years ago, is still considerable—viz., 19 per cent. Recurrence according to the latest statistics takes place in 24 per cent. and life in the great majority of cases, which have been successfully operated, is anything but pleasant, the patient being deprived of the power of ordinary speech and reduced to a pharyngeal whisper, whilst in

not a few cases difficulty in swallowing is also present. Thus you see that the prospects of the two classes of laryngeal cancer are, indeed, as I just stated, extremely different from one another.

After the meeting in which I had stated my experience a distinguished laryngologist asked me how it was that I had seen so preponderating a proportion of intrinsic cases whilst he in hospital practice had found an almost inverse preponderance of extrinsic cases. The explanation I was able to give him is extremely simple; he refers to his hospital practice, whilst all my statistics relate to my private practice. Now there is the great difference between these cases in private and in hospital practice, that whilst in the former patients who are troubled by nothing else but by persistent hoarseness—which in the great majority of cases is the first and for a long time the only symptom of this variety of the disease—consult their general attendant or a specialist already at an early period of the disease, hospital patients, as a rule, do not take any notice of such hoarseness and allow the insidious disease to go on, until it passes over the confines of the larynx proper, when pain, difficulty in swallowing, enlargement of the cervical lymphatic glands, and general cachexia are induced, and when the case no longer belongs to that class in which the simple operation of thyrotomy will cure them, but when the much graver recourse to total laryngectomy represents the only possibility of saving them.

Here, then, is another illustration of the necessity of the use of the laryngoscope in private practice. You ought not to be satisfied when a middle-aged patient comes to you complaining of hoarseness of several weeks' duration, for the occurrence of which he can give no explanation, in assuming, without making a laryngoscopic examination, that he is merely suffering from a laryngeal catarrh. You ought to use your laryngoscope, and when you find congestion limited to half of the larynx only, or a suspicious thickening, or a distinct outgrowth from one vocal cord, send your patient at once to a competent specialist in order not to lose precious time. Many a valuable life will be saved, and indeed has been saved, by such prompt recognition on the part of the general practitioner, in whose hands, indeed, in the majority of these cases lies the patient's fate.

One more fact will illustrate the same point. A patient may come to you with various vague complaints about early fatigue, pains in his head, chest, or abdomen, shortness of breath on exertion, and similar nondescript or ambiguous symptoms which may be due to an immense variety of causes. You carefully examine him in the approved manner, you find no organic change to explain these symptoms, and you console him and yourself with so cheap a diagnosis as that of his "being out of sorts" or "neurasthenic," &c. Yet, if you had included amongst your investigations an examination by means of the laryngoscopic mirror you might have found one sign positively characteristic of organic disease, and at once drawing your attention to quite a variety of serious organic affections, of which its appearance may be, and often enough is, the first and for a long time the only demonstrable sign, viz., abductor paralysis of one vocal cord. The mere enumeration of the principal of these diseases—tabes dorsalis, syringomyelia, amyotrophic lateral sclerosis, bulbar paralysis, pachymeningitis, aneurysm of the arch of the aorta, malignant mediastinal tumours, pleuritic thickening of the apex of the right lung, oesophageal carcinoma, &c.—will suffice to show you the enormous practical importance of this sign, which is so easy to detect but which must be sought for in order to be detected, as it does not reveal itself either by changes in the voice or in the respiration.

It would be easy to multiply the number of examples demonstrating the value, nay, the necessity, of the use of the laryngoscope in general practice. Thus, I just mentioned that hoarseness often is the first, and for a long time the only, symptom of intrinsic laryngeal cancer. But apart from this, consider what a multifarious significance that symptom, which so often brings the patient to a cancer that symptom, may have. Hoarseness may be a sign of a simple catarrhal process, of laryngeal tuberculosis, of syphilis, of the existence of an innocent or malignant growth in the larynx, of laryngeal paralysis, of the ingrowth of a foreign body in that part—in fact, of conditions as different in kind as in requiring different treatments. To treat such symptoms in mere routine fashion by prescribing an inhalation, or a spray, or an expectorant

without even looking at the larynx means, bluntly speaking, neglect of duty, and exposes, I need not say, the practitioner if the real cause be afterwards detected by somebody else to the reproach of carelessness or ignorance. The same applies to laryngeal dyspnoea, which may, as you know, be due to such different causes as oedema of the larynx, perichondritis, tuberculosis, syphilis, or malignant disease, laryngeal neoplasms, spasm, bilateral paralysis of the abductors, impaction of a foreign body, external compression, stenosis remaining after diphtheria or typhoid fever, fractures or injuries—conditions again, as you see, as widely different from one another as could be, and in most cases reliably differentiated only with the help of the laryngoscope.

Turning now to affections of the nose, let me remind you in the first place of the great influence exercised by stenosis of the nose and naso-pharynx upon the general health and more particularly upon the tendency towards catarrhal affections of the air passages. Perhaps no progress made within the last 40 years in the field of laryngology and rhinology has more thoroughly influenced the minds and has more generally entered the thoughts of the bulk of the profession than the effect of the most frequent form of naso-pharyngeal obstruction—viz., of adenoid vegetations—upon the general development of children. It is fully and generally recognised nowadays that chronic obstruction of the naso-pharynx during childhood not merely brings about such unpleasant results as mouth-breathing, frequent colds in the head, and periodical or permanent deafness, but that it also leads, when long continued, to insufficient oxygenation of the blood, deficient development and deformity of the thorax, and to mental hebetude, leaving alone the fact that the unhealthy condition of the naso-pharyngeal mucous membrane predisposes towards infection of different kinds, and that if such infection has taken place it is apt to run a more severe course and more particularly to cause ear complications. But apart from adenoid vegetations the importance of stenosis of the air-passages proper is of such a character as to force itself time after time upon the mind of the thoughtful practitioner. When you once enter upon private practice you will find that the graver diseases of mankind to which your attention is more particularly devoted during your years of study fortunately are not those with which you have to deal most frequently, and that affections which you have been apt to consider as trivial during your student years after all occupy a much larger part of your daily work. Amongst such trivial complaints of which you are likely to hear almost daily in your practice perhaps none will be more frequent than that about a particular tendency "to catch cold." "I catch cold on the slightest or on no provocation," you will be told, "and every cold directly flies to my throat and chest." In a large number of the patients consulting you for that complaint you will find on examination the typical face of the mouth-breather, with oblong configuration of the head, pinched nose, retracted upper lip, and prominent incisor teeth. They may give you a history making the presence of adenoids in childhood very probable. You elicit the fact that the patient always keeps his mouth open, snores at night, and awakes with his throat parched and dry. On examination you find, apart from the symptoms of general catarrh of the upper air-passages, genuine nasal stenosis due in some cases to general narrowness of the parts, more frequently, however, to deviation of the septum or enlargement of the turbinates, or a combination of both these changes, associated possibly with abnormal steepness of the hard palate. No remedy is, in these circumstances, likely to diminish the catarrhal tendency, unless proper nasal breathing is restored. That judgment in these cases is required goes without saying; to attribute every cold to nasal stenosis and to proceed by means of operation against perfectly harmless small excrescences from the nasal septum or slight enlargement of the turbinates, which do not in the least prevent the patient from breathing freely through his nostrils, is just as injudicious as to hold every slight amount of lymphatic tissue in the naso-pharynx as responsible for every kind of obscure neurosis in the body and surgically to proceed against it as being the certain cause of those nervous disturbances. But when proper caution is exercised, cases enough still remain in which the catarrhal tendency will really be benefited by the restoration of nasal breathing, and the attainment of this desirable purpose rests in the first place with the diagnostic powers of the general practitioner.

Exactly the same obtains with regard to the affections

which I select as a final example of the importance of the general practitioner's knowing something of laryngology and rhinology—viz., empyema of the accessory cavities of the nose. I do, of course, not speak in this connexion of those cases of empyema of these cavities in which urgent local symptoms cry out, as it were, for attention on the part of even the most casual observer, but I refer to those categories in which either there is no, or very little, periodical discharge (latent empyema) or in which nasal discharge has become, as it were, so much a part of the patient's existence that he either does not refer to it at all, or only incidentally, when consulting his medical adviser for what appears to him a trouble of a very different kind. In the first of these two categories (cases of latent empyema) the patient's only complaints may be headache or neuralgia (permanent or periodical, general or more frequently limited to the frontal region, vertex, or the occiput, according to the cavity affected), combined in more advanced cases with eye troubles, general depression, loss of memory, or somnolence; in the second class, in which, particularly during sleep, there is more or less continuous drainage of pus into the stomach and auto-infection of the system, the complaints may only refer to grave dyspepsia and general feeling of being unwell. If, in the first of these categories the practitioner is satisfied with treating his patient as neurasthenic and with ordering simply change of air and residence, sedatives, &c., and if, in the latter, he looks upon the disease as originating from, and confined to, the digestive organs, and treats the patient accordingly, he will, needless to say, never be able actually to cure him, and will sooner or later in all probability have the chagrin of finding that he leaves him to seek other aid. If, on the other hand, in cases of this kind he thinks at an early period of the possibility of a nasal origin of the obscure headache or dyspepsia, and either succeeds in diagnosing himself the existence of an empyema, or sends his client for confirmation of his suspicion to a specialist, who confirms it, he may be sure that this proof of his diagnostic acumen will greatly redound to his credit in the eyes of the patient and his friends.

The foregoing examples will suffice, I trust, to convince you, gentlemen, that an acquaintance with matters laryngological and rhinological, even though these branches do not yet occupy in the medical curriculum and in the final examinations the position which they deserve, is nowadays indispensable for the general practitioner who does not wish to be left behind in the struggle for existence. That no undue demand should be made with regard to the extent of this knowledge I heartily admit. In a previous part of this address I have expressly stated that it is an impossibility to educate our students within the time of the official curriculum to be specialists in every branch of medical science, and I am further fully aware that similar claims to those raised for my specialty could with equal reason be adduced on behalf of many other of the special branches. But it is not necessary that every general practitioner should be a specialist for everything. He will do justice to himself and to his patients when he possesses sufficient knowledge to diagnose and treat simpler cases himself, and to recognise at a sufficiently early period in difficult and obscure cases that further help is required. In the words "at a sufficiently early period" lies the whole crux of the question. The time ought to be over when a patient with beginning cancer of the larynx is sent to a watering place, when a beginning bulbar paralysis is treated with amputation of the uvula, when a tuberculous ulceration of the larynx is allowed to extend until it is past the limits of possible help, when an empyema of the frontal sinus remains unrecognised until caries and necrosis of the walls of the cavity occur, accompanied by meningitis or encephalitis. Not in treating for an indefinite length of time an obscure case with all possible remedies without endeavouring to establish the correct diagnosis lies the wise policy of the general practitioner, but in calling in help at the time when help can still be given.

Here the big question of the proper relations of the consultant and the general practitioner opens, and although this question is, of course, much wider than the immediate purpose of this address, the subject of the latter is so inseparably bound up with the general question that I trust you will bear with me if, in conclusion of my remarks, I dwell for a few minutes on one aspect of this all-important topic which is of particular interest in connexion with my observations. More than once I have emphasised in the course of my remarks the impossibility of educating our

students to be specialists in everything. This, however, I trust will not be understood by any of you as meaning that I wished to relegate the general practitioner to the humiliating position, that he should only prescribe for colds and stomach-aches, and that for the rest he should merely act as an adviser as to who should be called in, when the matter became slightly more serious or obscure. It would be an evil day for the science and art of medicine, and for the self-respect and sense of responsibility of the general practitioner, if such became the general practice. But what I contend he ought to know is: the limits of his own knowledge and that he ought to act upon this recognition of his own limitations. It is not a sign of strength, but of weakness if a practitioner misguided by a false sense of shame obstinately refuses to recognise that he has arrived at the end of his own powers, and if with equal obstinacy he refuses to let his patient have the benefit of further advice in conjunction with himself. Apart from the grave responsibility thus engendered, he certainly does not strengthen his own position by such a short-sighted policy. The times are fast approaching their end when the patient consented to be looked upon as a piece of property on two legs, and nowadays when he finds that his general medical adviser has done him no good by a prolonged course of treatment, and has neither suggested himself nor received with favour his own timid suggestions as to a consultation, he takes his fate into his own hands and clandestinely consults someone else. Remember, gentlemen, it is his own usual medical attendant who has driven him to adopt that course!

Here the difficult task of the consultant begins, a task not rendered any the easier by the wholly or partly erroneous views, which unfortunately appear to be entertained on this point by a good many general practitioners. It seems to be thought by them that the patient who comes on the sly to the consultant begins the conversation by saying: "I have been under the care of Mr. So-and-So for a long time and am still under it, but as he does me no good I have come to see you." Now let me assure you, gentlemen, on the strength of nearly 30 years' experience as a consultant, that a patient introduces himself in such a manner on the rarest of occasions only, when every decent-minded consultant would at once interrupt him and say that as he was still under Mr. So-and-So's care he (the consultant) could only see him with the general attendant's knowledge and consent. But, as a matter of fact, in the great majority of all cases the patient either begins by at once telling the consultant the symptoms of his complaint or he states that he had received certain advice with regard to an operation or other form of treatment and that before consenting to it he wished to take a further independent opinion, a course to which I think he is fully entitled. In not a few cases he merely asks to be examined, in others he positively denies having a general medical attendant; again in others he may tell you that he had suggested a consultation but that this had been declined, or say that he was not satisfied but did not wish to hurt his feelings, and had given up attending his usual medical attendant, &c. Frequently enough it is quite impossible to ascertain the true condition of things. In fact, the number of contingencies is so great that I believe no code of ethics could be compiled in which they were all satisfactorily provided for. The consultant, therefore, must depend in almost every individual case upon his own judgment, tact, good fellowship, and desire to avoid making mischief. In a goodly proportion of cases he will find, of course, that the patient has been quite correctly treated, when it will give every honourable consultant the greatest pleasure to tell the patient so and to encourage him to continue with the treatment adopted by his general medical attendant. Not much good, I think, could come from the consultant's communicating in such circumstances with the general practitioner and, on the contrary, mischief might be done, inasmuch as the general attendant's susceptible *amour propre* probably would be still further wounded and a feeling of distrust be engendered in his breast against his patient. I think it, therefore, wisest and kindest for the consultant to treat such a consultation as a passing episode, after which the patient will, with renewed confidence, return to his ordinary medical attendant. But the course to be followed becomes infinitely more difficult and delicate when the consultant after examination arrives at the conclusion that a mistake has been committed with regard to either the diagnosis or the treatment of the case or to both. His *esprit de corps* forbids him

to disparage the opinion of the usual medical adviser, his duty towards the patient commands him not to let the latter continue under what he considers a mistaken *régime*. The obvious way out of this difficulty would seem for him to communicate with the general medical attendant, and to this course I have found in long experience the patient almost always, even if at first feebly protesting, ultimately consents, if it be explained to him that his case was not one for a casual stealthy consultation behind the back of his general medical attendant, but for hearty coöperation between the latter and the consultant. To this most natural proceeding, however, opposition has arisen in a quarter in which one should have least expected it; instead of appreciating that such communications are made not only in the patient's but most certainly in the general attendant's interest as well, some general practitioners violently resent what they call "unrequested advice," and many more, alas, have not a word of thanks for the consultant, who has endeavoured to keep for them patients who often enough were on the point of leaving them altogether when seeking independent advice! It is truly difficult to understand this mental attitude, but if proofs were wanted to show its actual existence I need only refer you to a correspondence on the ethical aspects of medical consultations which has taken place within the last few weeks.³ Personally I have been lucky enough to escape the "acrimonious and insulting replies" which have fallen to the lot of many a consultant, who wrote with the best of intentions to the practitioner in attendance, when the latter's patient had clandestinely consulted him, but speaking from memory I must say, with sincere regret, that in by far the larger part of all the letters I have written in former years in similar circumstances I have received no reply at all! Experiences of that kind do not encourage a man to continue in taking a good deal of trouble when the latter apparently is so little appreciated! It is my custom now, when I see a case in which in the course of the consultation it becomes apparent that the patient has been, and possibly may be still, under the care of another man, and in which I think that the latter in the patient's and in his own interest ought to know my own views, to tell the patient that if his medical attendant should wish to know my opinion and would write to me in that sense I should be very happy to report to him. The adoption of this course enables me to fulfil my duties towards both the patient and the general practitioner without exposing me to unpleasantness. Still, I am far from thinking that this course affords a healthy and truly satisfactory solution of the question. Yet it ought not to be difficult to solve it satisfactorily. All this internecine bickering would be done away with and a much more cordial feeling created between general practitioners and consultants if the former would only credit the latter with their true motives in writing to them about truant patients whose cases require further consideration.

In the cordial coöperation of the consultant and of the general medical attendant lies the true interest of everybody concerned. That this general principle, from the nature of the diagnostic and therapeutic questions involved, applies with particular force to the relationship of laryngology and rhinology to general practice I have endeavoured to illustrate to-night.

³ Brit. Med. Jour., March 2nd, 1907, p. 534

THE Medical Graduates' College and Polyclinic held its annual general meeting at 22, Chenies-street, London, on March 22nd, under the chairmanship of Dr. O. Theodore Williams. The annual report and balance-sheet, which were unanimously adopted on the motion of the chairman, showed that the polyclinic was in a prosperous condition and that its financial condition and other interests only require the individual assistance of its members and subscribers to enable the Council to widen the scope of the work and to increase the usefulness of the institution. In 1906 there were 14,528 attendances of medical men and 1164 cases of disease, many of them of extreme rarity and interest, were shown at the various clinics. In addition there were held four sessions of practical classes and one vacation course of three weeks attended by 198 practitioners. The medical superintendent of the polyclinic, Captain A. E. Hayward Finch, was heartily congratulated on the success of the college.

ABSTRACT OF

The Goulstonian Lectures

ON

CERTAIN ACUTE INFECTIVE OR TOXIC
CONDITIONS OF THE NERVOUS
SYSTEM.

Delivered before the Royal College of Physicians of London

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LECTURE III.¹

Delivered on March 15th.

MR. PRESIDENT AND GENTLEMEN,—Having devoted the whole of my second lecture to the consideration of acute poliomyelitis, I have left myself but a meagre allowance of time for the discussion of the remaining and less common diseases of my group—namely, acute ascending myelitis, Landry's paralysis, and acute toxic polyneuritis. The task of dealing adequately with these morbid conditions in the time at my disposal would have been an impossible one if it had been my object to describe them in a systematic manner. My purpose, however, is, as I have already told you, of a different nature, and I shall merely place before the results of my own observations, and the grounds my belief that there are features, clinical as well as anatomical, by which these three maladies can be differentiated.

ACUTE ASCENDING MYELITIS.

It is a matter of some difficulty to choose between the terms "acute ascending myelitis" and "acute disseminated myelitis" because the one is probably better supported from clinical and the other more appropriate from a pathological point of view, but I have chosen to include the word "ascending" for the reason that it graphically suggests the prominent characteristic of the disease. "Acute ascending myelitis" would do equally well and is in most cases, at any rate, more correct. Reference to the meningitis, however, no more necessary here than is reference to the uræmia which undoubtedly complicates the great majority of cases of pneumonia.

Let me introduce the subject through the medium of a case. A bricklayer, aged 44 years, was admitted to the National Hospital for the Paralysed and Epileptic on August 14th, 1903, under the care of Dr. J. S. Collier. The patient's previous health had been good in every way and no evidence could be obtained either of venereal infection or of temperance. On August 3rd, 4th, and 5th he had noticed all pain about his chest, especially between his shoulders, and on the following day he experienced some weakness of his legs, although he was able to continue his work. Leaving his bed on August 7th he was conscious that his legs were numb and he found that he could not empty his bladder, but as he was able to walk a quarter of a mile. Inability to climb a ladder caused his return home and on the next morning he was unable to stand. On the 9th he did not suffer any incontinence when pins were inserted into the skin of his legs or abdomen and all power of moving his lower extremities had disappeared. Three days later he suffered from pains shooting down his arms, and this was followed within 24 hours by paresis of those limbs.

On admission to the hospital the patient was found to be a large, robust, and well-nourished man, completely unable to move his legs, to sit up, or to turn over in bed. The skin covering the trunk and limbs was pale and dry, a well-marked tache being obtainable on stroking. On the other hand, his face and neck were flushed and moist with perspiration. His lips and tongue were furred, foul, and dry. Mentally, the patient was clear but somewhat apathetic. The temperature was 101° F., the pulse was 72, and the cardiac condition was normal. Respiration was shallow, regular, chiefly diaphragmatic, and recurring about 23 times

a minute. There was no spontaneous cough and attempts to produce one were feebly carried out. The abdomen was distended with flaccid walls, nothing abnormal being detected on palpation. After much aperient medicine a continuous and uncontrolled expulsion of fluid feces was obtained. The urine, which had to be withdrawn by catheter, was scanty, high coloured, acid, and of a specific gravity 1030; it contained some albumin but no sugar. Examination of the function of the cranial nerves revealed no abnormality. The patient was able to turn his head from side to side and to raise it from the pillow in rather feeble fashion, but he could shrug his shoulders with fair strength. Both arms displayed complete flaccid palsy of movements at the wrists and finger-joints, whereas some diminished power of moving the limbs at the elbow and shoulder was still present. No wasting, tremor, or muscular fibrillation was observed. Respiration was carried on by the diaphragm and accessory muscles, the intercostal and abdominal muscles being totally paralysed. The legs were flaccid and quite powerless throughout but no atrophy was evident. The muscles everywhere responded normally to electrical currents. On the sensory side it was elicited from the patient that he had suffered from pain in the back and chest, with a feeling of tightness and burning around the lower abdomen, associated with numbness and tingling over the legs which gradually extended up the trunk. At the time of admission he was conscious of numbness from the feet to the nipples and a dull diffuse pain in the back. On testing his cutaneous sensibility it was discovered that prick and touch were unperceived up to the level of the nipples and only partially recognised as high as the fifth cervical root area, the right arm being more insensitive than the left. The sense of position was lost in all four extremities and no tenderness was present on squeezing the muscles. All deep and superficial reflexes were absent in the trunk and limbs, the jaw jerk, however, being easily obtained. On August 15th, the day after admission, moist sounds were audible in the lungs and the arms and respirations were more feeble. I inoculated culture tubes with the cerebro-spinal fluid by means of lumbar puncture and with blood from a vein which I opened under strict aseptic precautions. Death took place from respiratory failure early the following morning, less than 13 days from the first symptoms of pain and less than ten days from the earliest signs of paresis. During his stay in the hospital the patient's temperature varied between 101° and 102° 4°.

Twelve hours after death I performed a necropsy, finding rigor mortis present, the body well nourished, and the abdomen markedly distended. The dura mater was normal in appearance, the leptomeninges, on the other hand, being intensely congested, although free from visible exudation or pus. The spinal cord was softer than usual throughout its length but from the tenth dorsal segment to the lower cervical region almost diffident in consistence. On transverse section in this part it was impossible to distinguish white from grey matter and dark brown patches suggestive of extensive hæmorrhages were seen scattered about. Beyond general hyperæmia the brain presented no abnormal features. The left sciatic nerve was rather soft and fatty and the muscles appeared healthy. The heart and liver were normal, the lungs and kidneys were congested, and the spleen was soft, large, and deeply coloured. At the necropsy I inoculated culture tubes from the heart blood, cerebro-spinal fluid, and spinal cord.

The results of the bacteriological investigation during life and after death may be conveniently considered at once. Part of the cerebro-spinal fluid taken during life was centrifuged and the very scanty deposit was examined. It contained few cells but some organisms which are best described as diplo-bacilli—very short rods with rounded ends placed end to end, generally in pairs but sometimes forming irregular chains. Cultures from the cerebro-spinal fluid were sterile. Cultures from the venous blood extracted during life produced in broth only a slight turbidity and smears showed a diplo-bacillus resembling the one already described except that they appeared to be somewhat larger and stouter. All efforts to subcultivate the organism failed. All culture tubes inoculated post mortem proved sterile except the broth tube from the spinal-cord substance which again grew a scanty and short-lived organism resembling the one obtained from the venous blood during life. The organism I have referred to retained Gram's stain badly. Owing to failure in subcultivation I have no knowledge of its cultural characteristics and the only point of importance is the fact

¹ Lectt.
(p. 765) a

published in THE LANCET of March 16th
respectively.

that the bacillus was found in the blood and cerebrospinal fluid during life and the spinal cord after death. With regard to its causal relationship with the disease it is unwise to speculate further but it is well to remember Homen's experience which I referred to in my first lecture. That investigator was unable to find organisms in the cord more than a few days after their injection and I may add that in my case the search for bacteria in stained sections of that organ was unsuccessful.

Microscopical examination.—The parts examined included various levels of the brain and brain stem, the spinal cord, some peripheral nerves and muscles; the Nissl, Löffler's methylene blue, Busch, logwood and eosin, or van Gieson methods were employed. I may say at once that no changes were found in the sciatic nerve or in the anterior tibial muscle, and that changes in the central nervous system did not extend higher than the lower part of the pons. Speaking generally the most marked disease was found throughout the dorsal and lower cervical region, less marked disease in the remainder of the cervical region and medulla, and least disease in the lumbo-sacral enlargement. Taking this fact along with the clinical history of the case it is justifiable to assume that the morbid process originated in the lower dorsal region and spread upwards with somewhat fading intensity after reaching the cervical region as high as the bulb. At every level foci of acute inflammation were present, either confluent over the whole of a transverse section, as in some parts of the dorsal region, or discrete and irregularly scattered, as in the cervical segments. The incidence of these patches was chiefly on the white matter and especially on the posterior columns, but in the dorsal region the condition was so general that it was often impossible to differentiate white from grey substance or to detect any remains of the central canal. Whether the lesion was in the white or grey matter the essential characteristics were similar and it will be sufficient to describe one or two typical pictures as seen under the microscope.

For instance, a section through the mid-cervical region shows the posterior median artery and its branches engorged with blood and surrounded in its adventitial lymph sheath by a cellular proliferation practically identical with that seen in the cases of acute poliomyelitis. In the white matter surrounding the vessel the most noticeable feature is the great proliferation going on in the neuroglial cells, which is much more active in the immediate proximity of the vessels and fades off more or less as the distance increases. All, or nearly all, the neuroglial cells are enormously swollen and many contain two or more nuclei which are also large and sometimes vesicular. Vacuoles are at times present in the cell plasma. Among these cells are seen the remains of the nerve fibres with swollen myelin sheaths and swollen axil cylinders, the latter often five or six times their normal diameter. Here and there are spaces from which the myelin and axil cylinders have fallen. In a section showing their condition in only moderate intensity in the posterior columns one may find the grey matter practically normal and most of the anterior horn cells in a state of good preservation. On the other hand, in sections where the involvement of the white columns is more general it is usual to find the cells of the anterior horn swollen and chromatolytic.

Another characteristic picture is that presented by a portion of the white matter in which two or three small vessels are seen in transverse section. These appear engorged with blood which, although probably in a condition of stasis, shows no definite evidence of coagulation. Around the vessels is a dense ring of mononuclear cells, a little further away a zone in which there appear to be many polymorphonuclear leucocytes, and everywhere in the neighbourhood numerous neuroglial cells of all shapes and sizes scattered amongst granular debris or swollen nerve fibres. In similar situations large hæmorrhages have taken place and the blood is dispersed between the fibres so as to form for the latter in places a kind of dark framework.

In the soft meninges covering the cord, and also in the anterior median fissure, is seen a cellular proliferation; the majority of the cells are of the mononuclear type but a few are polymorphonuclear, and other varieties, which are difficult to classify, are also present. The Nissl sections emphasise the fact that ganglion cells are only degenerated in proportion to the amount of inflammation present, but, unlike acute poliomyelitis, the anterior horns may be free from inflammatory exudations and yet the cells swollen and chromatolytic provided that there are marked inflammatory lesions in the surrounding white columns. Sections from

the cervical and other regions stained by the Busch method show surprisingly little change, probably owing to the short duration of the morbid process, but a remarkable feature in these preparations is the presence of large droplets of fat in the meninges, the epispinal space, and undoubted evidence of degeneration of the fibres of the cord immediately subjacent to it. In this manner a narrow rim of scattered but large black dots can be seen just beneath the membrane. Numerous amyloid bodies are scattered about the periphery of the cord and along the rim of the great vessels. This case is typical of acute ascending myelitis, other examples of which may be found scattered through medical literature.

A very complete account of another fatal case was published by Dr. Thomas Buzzard and Dr. J. S. Risien Russell in the Transactions of the Clinical Society in 1898, the clinical features and morbid anatomy closely resembling those I have just referred to. Risien Russell succeeded in growing a diplococcus from the meninges after death which presented some characteristics similar to, but not identical with, those of the meningococcus and which proved pathogenic to guinea-pigs and mice. Rhein in 1904 recorded another example of the disease and his paper contains references to most of the preceding published cases. There has been sufficient bacteriological investigation to show that this morbid condition can be the result of infection by many different varieties of bacteria, and experimentally Marinesco has shown that an infective meningo-myelitis can be produced by several of the ordinary pyogenic organisms. Another point of interest to be gleaned from the literature is the evidence afforded for the belief that although this malady may arise in what appears to be a spontaneous manner in healthy subjects, it is not infrequently a secondary complication in cases of infective diseases of other organs. For instance, Sir Thomas Barlow described in 1887 the onset of symptoms of rapidly spreading paralysis in a man, aged 23 years, who was recovering from measles and who died in the course of 11 days. The cord showed changes which enable one to place the case in this group although the grey matter had suffered in a relatively greater degree than in some of the other instances. Outtlinger and Marinesco, and Auch and Hobbs have recorded a similar sequela in cases of variola, and Lépine believes that there is a definite typhoid myelitis of the same infective character. It is very probable, too, that many cases of so-called "primary paralysis" and the cases of acute ascending paralysis secondary to chronic cystitis described clinically by Walker should be placed in this category.

We may fairly assume, then, that acute ascending myelitis is an infective disease probably due to the presence of various bacteria in the tissue of the cord, and we have already seen that acute poliomyelitis is an infective process due to the influence of bacteria or their toxins. What is the essential difference in the pathogenesis of the two conditions which will explain the very different morbid anatomy, the different symptomatology, and the very different etiology in the way of age, epidemic, and seasonal incidence. I have in my second lecture laid before you my grounds for believing that acute poliomyelitis is the result of a poison, with neuroglial affinities, circulating in the blood stream. There is still stronger evidence, to my mind, in favour of the view that acute ascending myelitis is the result of a bacterial infection of the lymphatic system of the spinal cord. In saying this I do not wish to suggest

DESCRIPTIONS OF ILLUSTRATIONS ON PAGE 855

Fig. I.—Acute ascending myelitis. Transverse section from white matter of posterior columns in dorsal region. Vessels engorged and surrounded by round cells. Infiltration of the nerve substance by leucocytes and proliferating neuroglial cells.

Fig. II.—A large hæmorrhage in the white matter among the nerve fibres.

Fig. III.—Perivascular infiltration around a vessel in the anterior horn in the dorsal region.

Fig. IV.—A vessel in the posterior median septum showing the cells in the adventitial sheath and the proliferation of neuroglial cells in the neighbouring white matter. Explained diagrammatically in Fig. 5.

Fig. V.—a, White matter with neuroglial proliferation. b, Outer layer of adventitial sheath. c, So-called perivascular lymph space crowded with cells. d, Vessel wall (media). e, Lumen of vessel.

Fig. VI.—Landry's paralysis. The most advanced type of cell change met with in the anterior horn in any of the three cases. The usual change is represented in Fig. 3 of Lecture I.

Fig. V.I.—Anterior horn in Landry's paralysis showing fatty condition of ganglion cells and fine fatty change in the surrounding grey matter.

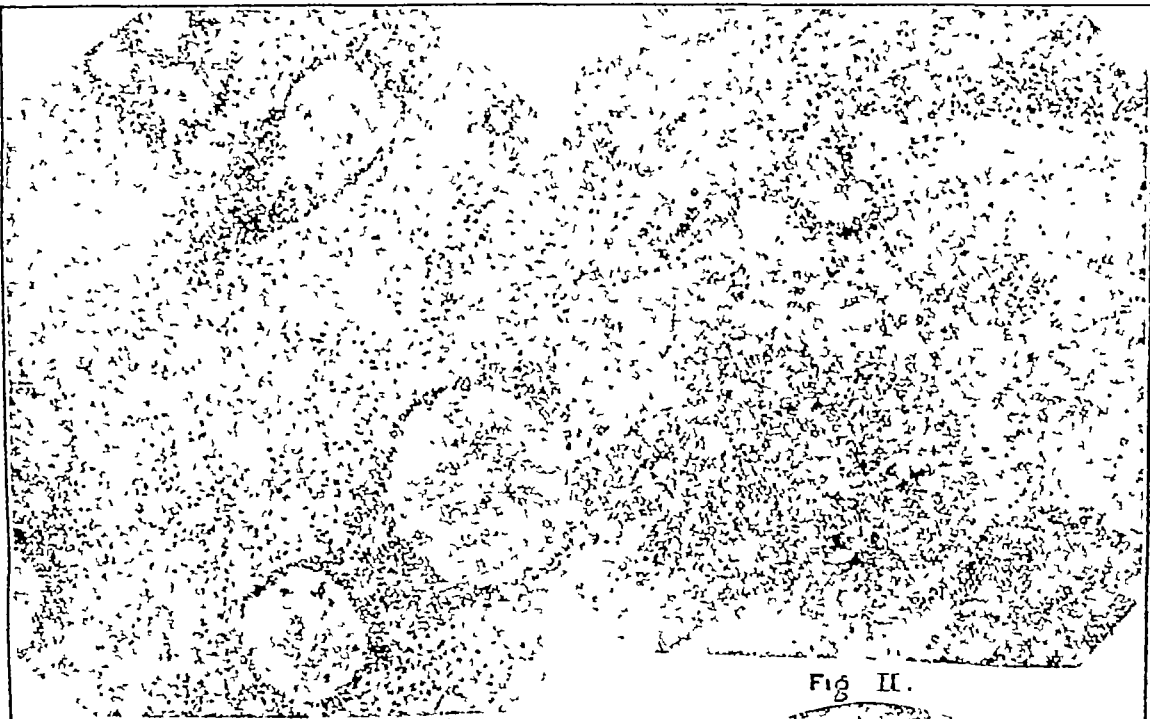


Fig. I.

Fig. II.



Fig. III.



Fig. IV.

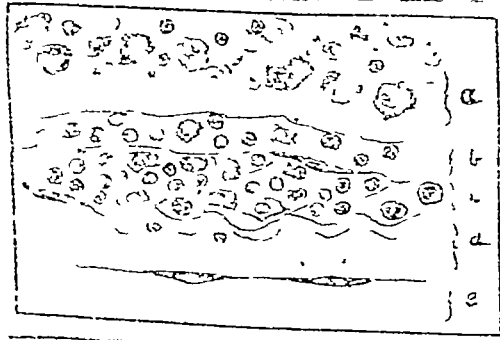


Fig. V.

Fig. VI.

Fig. VII.

that this disease is a myelitis secondary to meningitis produced by the presence of organisms in the cerebro-spinal fluid. We frequently see cases of intense meningitis in which there is no evidence of myelitis beyond the general toxic effects of the poison on the ganglion cells and myelin sheaths. In acute ascending myelitis we have a condition closely resembling the morbid process produced experimentally by Homen when he injected organisms into the sciatic nerve or into the substance of the spinal cord. The characteristics common to both the human disease and the experimental results are the scattered irregularity of the lesions, the preference for the white matter, and especially for the posterior columns, the spread of the process in an upward direction along the central cord and meninges, in addition to the essential features of the inflammatory processes. The fact that in many cases of virulent meningitis in which the causative organism can be seen in great numbers in the meningeal exudate there is no invasion of the cord itself, suggests that the subarachnoid space is not in direct communication with the intramedullary lymphatic system, although both the meninges and the cord can be infected from the lymphatics of the spinal nerves and spinal roots. The anatomical basis for this pathological fact is not, as far as I know, clearly understood.

The theory of lymphatic infection explains why in acute ascending myelitis the perivascular infiltration is not a general one as it is in acute poliomyelitis, and why the foci of inflammation are localised in such a way as one would expect from the lodgment of micro-organisms here and there in the tissues. In other words, the incidence of the disease is independent of the blood-supply except in so far as the vessels penetrating the cord carry with them lymphatic channels. Some further support is offered in my case by the presence of the ring of fatty change in the pia mater, epispinal space, and cord periphery, indicating, as it does, that the earliest changes took place in this part of the lymphatic system and thence spread along the lymphatics of the radial vessels into the interior of the cord. Unfortunately this point of view was not in my mind when I examined the case anatomically. If it had been I should have studied especially the lymphatic tracts leading to the central nervous system—those which accompany the spinal nerves. On the other hand, I have had the opportunity of examining carefully a case of secondary infection of the spinal cord with sarcoma, the primary lesion being situated in the kidney.

This case suggested very forcibly the possibility of infection of the spinal cord from the organs of the abdomen and thorax and is confirmatory of the experimental work of Homen, in spite of the fact that a malignant neoplasm and not a bacterium was the infective agent. It is, on the other hand, conceivable that in some instances the infection of the cord may be, in the first place, through the blood stream and the spread of the morbid process within the cord carried on by the intramedullary and meningeal lymphatics.

The question of the diagnosis of this disease need not detain us long. Sufficiently careful clinical examination should prevent any confusion with acute poliomyelitis or Landry's paralysis on account of the presence of more or less complete sensory loss climbing up the segmental ladder of the body rung by rung, hand in hand with the paralytic phenomena, and on account of the early affection of the sphincters. In a similar way the root distribution of the anæsthesia and paralysis will suffice to distinguish acute ascending myelitis from acute toxic polyneuritis, in which disease the anæsthesia is rarely so complete and is usually confined to the stocking and glove areas. It is obvious that the prognosis in acute ascending myelitis must always be exceedingly grave and it is highly probable that the great majority of cases end fatally.

The conclusions arrived at in connexion with acute ascending myelitis are as follows:—

1. A group of cases, which have the same clinical picture, but which may arise either spontaneously or as a secondary complication in other infective conditions, deserves the name acute ascending myelitis.

2. These cases are characterised from the clinical point of view by an acute ascending paralysis associated with marked loss of cutaneous and deep sensibility of all kinds and with loss of sphincter control, and anatomically by an acute inflammation of the spinal cord, affecting both the white and grey matter, beginning generally in the lower dorsal or lumbar regions and spreading upwards to the medulla.

3. Both on experimental and clinico-pathological grounds

there is evidence to support the view that the inflammation is due to an infection of the lymphatic system of the spinal cord; in other words the disease is a spinal lymphangitis.

4. The condition is not a specific one and may be due to the action of various micro-organisms. There is no particular age incidence nor is there any instance of an epidemic tendency.

LANDRY'S PARALYSIS.

The first question I have to put is this: Is there a distinct morbid condition deserving of the name Landry's paralysis? Probably Landry's paralysis is the best-abused name in medical literature and more cases have been described under that heading with no justification than under any other title. Every form of paralysis which has been rapid and which has happened to begin in the lower extremities and extend upwards has been called Landry's paralysis, whether the morbid changes in the cord have been gross or insignificant. Nearly as many fatal cases of acute poliomyelitis in the adult have been published under the name Landry's paralysis as under their proper title.

Much the same may be said of the efforts which have been made to force all cases of Landry's paralysis into the category of peripheral neuritis, but for this course there are much stronger grounds. It is quite evident that not every case of acute ascending paralysis should be called Landry's paralysis and therefore the important point to decide is whether there are sufficient other clinical and pathological data to form a special disease. To my mind it does not matter, nor shall we ever know, what was the actual disease from which the cases described by Landry suffered. It is sufficient that he called our attention to a class of case in which the symptoms were those of a rapidly spreading motor paralysis without atrophy and without sensory or sphincter disturbances and in which he was unable by the methods at his disposal to detect anatomical changes. Does this class of case exist now? The answer to this question is in the positive if we make allowance for our improved histological methods, and yet remember that Landry would certainly have been able to detect the changes of acute poliomyelitis or of any other acute inflammatory process. The advantages we have over Landry consist chiefly in being able to examine nerve cells by the Nissl and nerve fibres by the Marchi methods.

I have had the opportunity of examining clinically and anatomically three cases of acute motor paralysis presenting the symptom-complex described by Landry and in each case there were identical pathological findings, all of which were slight and only demonstrable by the methods I have just referred to. Three cases alone are almost sufficient, but there are many others in the literature which may be added for the purpose of establishing a distinct morbid entity. The first case was one which I published in full about four years ago, together with the results of a bacteriological investigation. Of the other two, one was observed before and one after the first, but neither has been previously published. A short account of the clinical history of each is necessary before passing on to their pathological features.

CASE 1.—The patient, a man, aged 33 years, was admitted into the National Hospital for the Paralysed and Epileptic on Dec. 20th, 1902, under the care of Sir William Gowers. The duration of his symptoms extended over 18 days.

CASE 2.—A youth, aged 18 years, was admitted under the care of Dr. James Taylor on March 3rd, 1902. The patient was an engineer's assistant and had never had a day's illness since he began work at 11 years of age. There was no history of alcohol, gonorrhœa, or syphilis. Three weeks before admission he noticed some pain in his back and a feeling of general weakness. Four or five days later he experienced definite paresthesia in his legs, falling down in attempting to ascend some steps. The trouble increased and in the course of a day or two he was obliged to take to bed. A week later his arms began to lose power, respiration became affected, and regurgitation of fluid through his nose took place on drinking. On admission the patient looked strong and healthy as he lay in bed and his mind was perfectly clear. The motor functions of the cranial nerves were in no case lost, but there was slight general weakness of the facial, mandibular, and palatal muscles. On the other hand, the tongue and eye movements were of normal strength and range. The neck muscles were distinctly paretic and the patient was unable to raise his head. All the arm movements were feeble, but none absent; he could not raise his arm or forearm against gravity, but could extend and flex his wrists and fingers against the same

force. Full extension of the terminal phalanges was impossible and the movements carried out by the thenar and interosseal muscles were extremely feeble. On the whole the proximal parts of the limb were affected more than the peripheral, but the condition was very generalised. The whole of the thoracic and abdominal musculature was morbidly paretic, respiration being partly costal, partly diaphragmatic, and much embarrassed. The respiratory rate was 28 per minute. The legs were still more paralysed; slight flexion and extension of toes were possible, but no movements at the ankles or knees. The patient could just shift the thighs but was unable to lift them. The electrical reactions were normal everywhere. On the sensory side no impairment of cutaneous sensibility could be detected, but the patient experienced some tingling and pricking in the hands, feet, and legs. There was some tenderness of the calves and arms on pressure. All deep and superficial reflexes were absent and examination of the internal viscera revealed no abnormality. The sphincters acted normally. Death took place within 48 hours of his admission from respiratory failure, the temperature never rising above normal until just before death, when it reached 99.4° F. The duration of the symptoms was about three weeks.

CASE 3.—A man, aged 41 years, was admitted into the National Hospital for the Paralysed and Epileptic on May 27th, 1903, under the care of Dr. J. S. Collier. The patient had enjoyed good health with the exception of an attack of rheumatic fever at 22 years and a doubtful history of syphilis. On May 22nd he noticed some tingling in his hands and feet. On the evening of the 23rd he was unable to lift a glass to his lips and the following morning he was conscious of weakness in all four extremities. On the day of admission he had become unable to stand or even to sit up and his arms were useless. He complained of some painful cramps in his paralysed limbs and some dull pain in the small of the back. He had no numbness and no sphincter trouble. On examination the patient proved to be a large, muscular, robust man, quite unable to help himself in any way. His temperature was 99° F., the pulse was 112, and the respirations were 28. There was complete flaccid palsy of both the upper and lower extremities and of the trunk muscles; raising the head from the pillow was just possible. Respiration was very difficult, both intercostals and diaphragm being extremely weak. Coughing was impossible, articulation was imperfect, and the voice was feeble. Although he had considerable difficulty in masticating his swallowing was fairly good. There were no other signs in the cranial nerves. Cutaneous sensibility was perfect everywhere and no tenderness was present in the muscles or on pressure over the spine. All deep and superficial reflexes, including the jaw-jerk, were absent. The electrical reactions were normal except that the response in the legs was perhaps rather slow. The sphincters were under normal control. The respiratory difficulty increased rapidly and the patient died at 6 o'clock the following morning, the temperature never rising above 100.4°. In this case the duration of the disease was only six days.

The results of the post-mortem examination of the three cases may be taken together as they closely resemble one another. The points of interest are the following.

1. No evidence of disease was present in the nervous system to the naked eye, except general vascular engorgement. It is particularly to be noted that the cord was firm in consistence throughout in all cases.

2. The only cell change was that seen in the spinal cord by the Nissl method, and in no instance was it extensive. The first case presented a considerable number of cells, both of the anterior horns and Clarke's column, with early pericentral chromatolysis and a few with complete, or nearly complete, loss of chromatin granules and concentration of nuclei, especially in the lumbar region. In both the other cases a similar condition was met with, but of even slighter degree in the third. With regard to this cell change I would remind you that I found nothing of the kind in the spinal cord of any of the general toxic cases which I mentioned in my first lecture.

3. By the Marchi method the nerve fibres in the cord and in the peripheral nerves showed the fine scattered droplets of fat to which I referred in my first lecture. I pointed out then that this form of myelin degeneration differed from true Wallerian toxic degeneration in the fact that the droplets were smaller and discontinuous, generally single or

only two or three together, and was not necessarily associated with any loss of function on the part of the axis cylinders. Having found a similar appearance in all sorts of toxic conditions without paralysis I am not inclined to regard it in Landry's paralysis as indicative of anything more than the toxic state undoubtedly present. When I published the first case some years ago I attached more importance to this fatty change than I do at the present time. Fatty change was also demonstrated by the Marchi method in some of the leg muscles in two out of the three cases, and the cells of the spinal cord probably contained rather an excess of fat as seen by the same method.

4. There was no definite evidence of neuroglial or vessel changes. In the first case, in one part of the cervical region a very slight perivascular infiltration was seen around one of the branches of the central artery, but this was entirely exceptional. Examination of the neuroglial tissue in sections of the first case, stained by methyl violet, showed that many of the neuroglial nuclei were surrounded by rather more protoplasm than normal but there was nothing to suggest active proliferation of these elements. A certain number of amylaceous bodies was present in each instance.

If we subtract from the morbid changes I have described the diffuse fatty myelin degeneration in the white columns of the cord and in the peripheral nerves, which is common to acute toxic states of various kinds, we have left practically nothing but the ganglion-cell changes in the spinal cord. The latter are not of great degree or of extensive distribution but must be regarded as important on account of their absence in cases of "non-nervous" toxæmia. There is justification, then, if histological data are to count for anything, for believing that the poison at work in these cases exerted its chief influence on the ganglion cells and that the changes thus induced form the only obvious morbid anatomy of the disease. With this we must rest content, noting, by the way, that histological change does not indicate truthfully in this instance, as in many others, the depth of functional disturbance.

The cases that I have just described are not by any means the only instances in the literature in which the clinical symptoms of Landry's paralysis have been associated with slight cell changes and diffuse fatty myelin degeneration. Moreover, the cases which were examined before the days of the Nissl and Marchi methods and which presented no anatomical changes may well be allowed a place in the same category.

BACTERIOLOGY.

It is usual, in discussing the bacteriology of Landry's paralysis, to drag into the discussion all the cases of acute spinal paralysis in which bacteria have been detected in the spinal cord, the meninges, or the blood. I have done this myself in a previous paper, but now I shall confine myself to those examples of the disease which may properly be placed by the side of the three cases I have just described, cases in which there is nothing to suggest a bacterial invasion of the spinal tissues with inflammatory reaction. In the first place I will recapitulate briefly the results of my bacteriological investigation of Case 1. 1. A micrococcus was isolated in pure culture from the blood of the patient after death. 2. An organism, indistinguishable from that which was cultivated, was found in large numbers in the external part of the spinal theca. 3. A subdural injection of the cultivated coccus into a rabbit produced after some days a rapidly spreading palsy. 4. The same organism was discovered in the theca of the rabbit and isolated in pure culture from its blood. 5. In neither the patient nor the rabbit was the organism to be demonstrated in the spinal cord or the pia-arachnoid, and in neither case were there inflammatory reactions in those tissues. In my second and third cases all efforts to find bacteria, either by culture or by staining of films and sections, were without result.

The same lack of success has attended the bacteriological examination of most cases of Landry's paralysis which have not shown evidence of being in reality cases of inflammatory myelitis. Roger and Josué recorded a case of acute ascending paralysis without any known etiological factor in which they found toxic changes in the cells of the lumbar enlargement. Sections stained for bacteria did not demonstrate the presence of any organisms but cultivations from the heart blood produced a diplococcus resembling the pneumococcus. Injections of the coccus into a mouse did not prove fatal. A rabbit submitted to the same experiment died at the end of 21 days with symptoms of paraplegia and the

diplococcus was recovered from its blood. Macnamara and Bernstein isolated from the blood and cerebro-spinal fluid of a case of Landry's paralysis during life a micrococcus most frequently seen in tetrad groups, staining by Gram and growing anaerobically on gelatin without liquefaction. They considered that it bore some resemblance to the organism which I had found but were unable to obtain any positive results from experimental inoculation. The latter might be due, according to their statement, to the fact that only sub-cultures were used for injection in animals. This case made a complete recovery. These are, in my opinion, the only positive observations which are of value in regard to the bacteriology of the particular class of case under consideration. There is little to go on, at present, but it is clear that the blood should be investigated as well as the cerebro-spinal fluid during life, and that other tissues besides the central nervous system will need more careful search after death. The possibility of the extradural vascular tissues forming a hiding place is one to which I have already drawn attention, but my one and only opportunity for confirming this was unsuccessful.

With your permission I will leave the subject of Landry's paralysis at this point for the moment and reserve the discussion of its pathogenesis, diagnosis, and prognosis until I have said something about acute toxic polyneuritis.

ACUTE TOXIC POLYNEURITIS.

The subject of toxic polyneuritis is a very large one and I have no time or desire to deal with it as a whole. There are, however, cases belonging to this group in which the acute onset, the widespread palsy, and the lack of any marked anaesthesia produce a striking clinical resemblance to cases of Landry's paralysis, or even in some instances to acute poliomyelitis. It is with these cases I have now to do. The question of title again presents itself and there is a general feeling that this group might well have a distinctive name if only a suitable one could be found. "Toxic degeneration of the lower motor neuron" is too long, and "motor neuritis" is open to popular if not medico-legal misinterpretation. It is perhaps better to postpone the classification of the various forms of toxic polyneuritis until we know more about the agents concerned in their causation. The only object I have in bringing these cases forward is to endeavour to settle the question as to their identity or non-identity with Landry's paralysis. The solution of the problem is, I believe, of great practical moment in that it involves the all-important question of prognosis in individual instances.

CASE 1.—A man, aged 25 years, was admitted into the Royal Free Hospital on August 8th, 1903, under the care of Dr. J. W. Carr. His previous health had been good, with the exception of a syphilitic infection three years before, for which he had been well treated. He had always been abstemious as regards alcohol and had been a total abstainer for four months. No other etiological factor could be discovered to account for his disease. About six weeks before admission he had suffered from some vague pains called rheumatic from which he recovered. On August 6th he did not feel well, was easily exhausted and faint, and experienced some tingling in his hands and feet and some pains in his toes while walking. In the course of the next few days he rapidly developed paresis in all four limbs and to a certain extent in his trunk muscles, although respiration was never embarrassed. On examination this paresis was found to be slightly more marked on his left than on his right side and to affect the peripheral more than the proximal parts of the extremities. There was also well-marked loss of power in the muscles supplied by both facial nerves so that he was unable to shut his eyes firmly or to whistle. There was practically no loss of cutaneous sensibility anywhere but the limb muscles were distinctly tender on pressure. The tendon reflexes were abolished and the plantar reflexes of the flexor type. The patient made a somewhat rapid recovery but not without some wasting of the muscles below the knees and elbows, which were slower in regaining power than those of the thighs and upper arms.

CASE 2.—A married woman, aged 34 years, was admitted into the National Hospital for the Paralysed and Epileptic on Jan. 15th, 1904, under the care of Dr. C. E. Beevor. Her previous history was good and as regards alcohol free from suspicion. A fortnight before her troubles began she had suffered from influenza. The onset of her illness was characterised by three days of pain in the back and legs,

followed by sudden development of almost complete loss of power in the lower extremities. A week later her arms and face became similarly affected. On admission she was found to have facial diplegia of the peripheral type affecting both the orbicularis palpebrarum and oris, as well as the other muscles supplied by the seventh nerves. The function of the other cranial nerves was normal. All four extremities were markedly paretic, the peripheral muscles suffering more severely than the proximal. There was no sensory loss but both nerves and muscles were tender on pressure. All the deep reflexes were absent, the abdominal present, and the plantar of the flexor type. Slight but temporary difficulty in micturition was also noted. The patient made a fairly rapid and complete recovery.

CASE 3.—A man, aged 26 years, was admitted into the National Hospital for the Paralysed and Epileptic on March 9th, 1897, under the care of Dr. J. A. Ormerod. His circumstances were good, his previous health was satisfactory except for gonorrhoea two years before, and his habits were temperate. Eight weeks before admission the patient fell off his bicycle and cut his hand, the wound healing in a fortnight's time. Six weeks before admission he noticed numbness of both hands and a week later numbness of both feet. This was immediately followed by weakness of all four extremities. On examination his cranial nerves were tested and found to be normal. The movements of the head and neck were well performed. All the muscles of the arms were feeble but none of them completely paralysed. Respiration was carried on by the intercostal muscles, the diaphragm being entirely out of action. The abdominal muscles were moderately affected. There was great weakness of the legs, especially of ankle movements. The knee movements were affected more than those of the hips. Cutaneous sensibility was slightly diminished over the glove and stocking areas and the muscles of the limbs, especially of the forearms, were tender on pressure. None of the deep reflexes were obtained, the abdominal reflexes were brisk, and there was slight difficulty in emptying the bladder in the supine position. This patient made a rapid and good recovery but reappeared at the hospital six years later in a precisely similar condition which had again begun about six weeks before his admission. The paralysis had been ushered in with numbness in hands and feet and had attacked the peripheral more than the proximal limb muscles. Speaking generally, the patient was worse than during his first attack and suffered from slight impairment of phonation and deglutition but his restoration to health was both rapid and complete.

Such cases as these could easily be multiplied, but the three chosen will serve to illustrate the class with which I am dealing.

The opportunities for studying the morbid anatomy of this condition are not so numerous on account of its more favourable course, but there are instances in which a fatal termination has occurred and in which lesions limited to the lower motor or to the lower motor and sensory neurons have been found. Apart from cases complicated with a history of alcohol, the only post-mortem examination I have made bearing on this subject was that on a case already published by Stanley Barnes in his paper on Toxic Degeneration of the Lower Motor Neurons. In this patient, a woman, 34 years of age, the history recorded two attacks of peripheral neuritis. The first followed an attack of mumps, about 14 months before her death, and affected the lower extremities only. The second occurred two months later and involved all four extremities. The second attack left her with almost complete atrophic palsy of the feet and hands, the proximal muscles of the limbs recovering. About a year later she became suddenly ill and in the course of a few days developed fresh paresis which caused her death within 24 to 48 hours from respiratory failure. In this case I found, in addition to the evidence of the old lesion, acute toxic changes in the anterior horn cells of the cervical and lumbar enlargements, although no recent changes were present in the peripheral nerves, a fact which is not to be wondered at when it is remembered that the paralytic phenomena of the third attack had hardly lasted long enough for demonstrable changes by the Marchi method. There can be little doubt that this patient succumbed to the third attack of some toxic condition implicating the lower motor neurons. The same case illustrates the physical condition of a patient who has suffered from a severe attack of this disease by the presence of an almost complete atrophic palsy of the peripheral parts of the limbs.

Let me contrast this with a case which has been recently under the care of Dr. James Taylor at the National Hospital for the Paralyzed and Epileptic. A man, aged 26 years, in the course of two or three weeks developed marked paresis of all the muscles of his limbs and trunk, beginning in the legs and spreading upwards. A similar paresis affected the facial muscles and those of deglutition. It was remarked that the movements at the hips and shoulders were as weak as those at the ankles and wrists; cutaneous sensibility was practically normal and there was no definite tenderness of any muscles on pressure. In the course of his recovery, which took place gradually and completely during the two months he was in hospital, the gain of power was steady and equal over the whole of the musculature and no local atrophy was present at any time. Dr. Taylor regards the case as one of mild Landry's paralysis—an opinion with which I am in complete accord.

While it is clear that, both in the cases which I have described under the heading of Landry's paralysis and in those to which I have referred as examples of toxic polyneuritis, the incidence of the toxic agent is chiefly upon the lower motor neurons, there is undoubted evidence from the clinical point of view that the two conditions are not identical. In both groups all the muscles of the bodies may be involved, but in Landry's paralysis it is the rule to find the paralysis evenly and generally distributed, in toxic polyneuritis to detect a more pronounced affection of the limbs and especially of their peripheral parts, and in some cases of the facial nerve. There are other points of diagnostic value to which I shall refer presently. In the meanwhile it will be of interest to consider whether there are any pathogenetic facts which will throw light on the difference between these two clinical pictures. Taking the case of the toxic polyneuritis first, it is only natural to suppose that the poison at work is carried by the blood and that the parts innervated by the grey matter of the cervical and lumbar enlargements suffer more than those in similar connexion with the dorsal region for reasons which I have already given in discussing the general principles of blood-supply. At the same time the whole of each lower motor neuron, including both the cell and its axon, is exposed to the poison in the general circulation and in these circumstances the particular affection of the long processes to the periphery of the limbs has an explanation offering some degree of probability. This applies to all forms of polyneuritis, whether the poison is of autogenous or exogenous origin, so long as it is carried by the blood.

Is it possible that the lower motor neurons are affected in a different way in cases of Landry's paralysis? Marinesco in his experimental inoculations of various forms of bacteria into the subarachnoid space of animals found that in some cases the organisms invaded the arachnoid space and the lymphatic spaces around the vessels without producing vascular or leucocytic reaction, at the same time secreting toxins which affected the elements of the spinal tissues. This fact is one of great importance because it would seem to show that certain bacteria or their toxins present in the lymphatic system of the cord can produce toxic effects without inflammatory reaction. In my first case of Landry's paralysis I found the cocci in the extradural tissues and it is quite conceivable that infection either by the cocci or by their toxins could take place from those tissues into the extradural and intramedullary lymphatics. From the absence of actual organisms in the spinal tissues in most of these cases it is probable that the toxins play the most important part in this infection. Allowing for a moment that this theoretical process can take place it must be granted that an explanation of the gradual, ascending, step by step, involvement of the central nervous system is provided, and one which makes the more progressive and even distribution of the palsies more readily understood. This theory does not necessarily pre-suppose that the blood is free from the responsible organism nor that the extradural tissue is its only resting place, but it suggests that there may be places where the bacteria may find suitable lodgment for the purposes of multiplication and whence they may pour their toxin into the spinal lymphatic system.

DIAGNOSIS.

I must now hasten to pass from what may well be considered the realms of theory to the more practical results of my own observation on the clinical characteristics which distinguish the various morbid conditions I have dealt with. In doing this I will leave acute ascending myelitis out of

consideration for the reason that its sensory and sphincter disturbances are sufficient to distinguish it from any of the other three diseases. The two most important problems are the differentiation of acute poliomyelitis from Landry's paralysis and that of the latter condition from acute toxic polyneuritis. The mistake of calling a case of acute and widespread poliomyelitis one of Landry's paralysis has been made so often and by such good observers that I feel no shame in admitting that I have erred in the same way. The error, however, has led me to consider whether there are clinical features in the early stages of these diseases, at which time the only possibility of confusion arises, characteristic enough to prove efficient guides. The following points must not be taken as of universal and unexceptional application, but as general principles:—

1. *The constitutional symptoms* in the severe cases of acute poliomyelitis are more marked than those in Landry's paralysis, the range of temperature is higher, often reaching 102°–104°, the malaise and anorexia are more profound, and vomiting and disturbance of the alimentary canal are more frequent. In children convulsions are often associated with the former ailment.

2. *Sensory phenomena*.—In Landry's paralysis there may be, and often is, complaint of pain in the back, of sensations of numbness or tingling in the extremities before and during the onset of paralysis. The only sensation complained of in the paralyzed limbs is that of discomfort or of cramps arising, partly at any rate, from their immobility; they may be handled without giving rise to anything more than slight tenderness on deep muscular pressure. In acute poliomyelitis the pains complained of are more urgent and affect not only the back, head, and neck, but frequently the limbs as well. The paresthesia may be present but a prominent feature is the pain, sometimes very severe, elicited by passive movements of the affected extremities.

3. *Motor phenomena*.—In both diseases paralysis is flaccid and may be general. The escape of a single muscle or of a group of muscles in a region where all the others are affected or a marked asymmetry in the condition of corresponding muscles on the two sides of the body are suggestive of acute poliomyelitis rather than of Landry's paralysis. Within a few days or a week of the onset in cases of acute poliomyelitis, if death has not occurred it is usual to find rapid recovery in some parts and early atrophy and electrical changes in others. In Landry's paralysis recovery, if it takes place, is slow and evenly distributed without marked atrophy.

4. In both diseases the sphincters usually escape, the inability to empty the bladder and rectum, which is often a temporary symptom, being due to the impaired abdominal musculature and the position of the patient.

Similar general rules for diagnostic guidance can be drawn in the case of Landry's paralysis and acute toxic polyneuritis.

1. *Constitutional*.—Although the constitutional symptoms in Landry's paralysis may be only of slight severity it is the rule to find some rise of temperature and associated anorexia. Cases of acute toxic neuritis may, on the other hand, often run their course with no corresponding features.

2. *Sensory phenomena*.—I have already referred to those of Landry's paralysis. In acute toxic polyneuritis numbness, pins and needles, and sharp pains are common in the extremities and very marked tenderness of muscles, sometimes of nerves, is the rule. There may or may not be relative anaesthesia in the glove and stocking areas.

3. *Motor phenomena*.—These are very important and can only be properly appreciated by carefully and systematically testing the various groups of muscles in the body. In the first place the limbs are more affected than the trunk and the peripheral parts of the limbs more than the proximal in acute toxic polyneuritis. In the same disease, although many of the trunk muscles may be involved, the most marked incidence is generally upon the diaphragm, in which case respiration becomes entirely costal. Of the cranial nerves those supplying the facial nerves are often picked out and may be the only ones to suffer. Sometimes the palate is also affected. In Landry's paralysis the musculature is affected generally and evenly, the trunk and limbs presenting a degree of paresis which is more or less symmetrical and equal. In cases in which the paralysis first affects the lower extremities it is not uncommon to find these parts most parietic at the time of observation, but the spread of the disease will then be a progressive one in an upward direction and the thoracic muscles may succumb before the diaphragm or both may be

equally weak. When the muscles affected by the cranial nerves are involved deglutition, phonation, articulation, together with the movements of the face and jaws, may be impaired, but the fatal termination generally takes place before any one of these actions is abolished. The condition may be progressive over two, three, or more weeks, and yet be unassociated with any definite local atrophy of muscles, and recovery may take place without its appearance. In acute toxic polyneuritis recovery, even if rapid and good, is usually accompanied by some temporary muscular atrophy and diminished electrical excitability in some of the limb muscles, especially the dorsiflexors of the ankles and the extensors of the wrist and fingers.

4. *Reflexes.*—The deep reflexes are abolished in both diseases in the affected parts. The abdominal reflexes are often retained in acute toxic polyneuritis and nearly always abolished in Landry's paralysis. The plantar reflexes are absent or flexor in type in both instances and the sphincters are only temporarily, if at all, disturbed. In addition, it is interesting to note that relapses and recurrences occur in toxic polyneuritis, although they are, as far as I know, unrecorded in poliomyelitis or Landry's paralysis.

PROGNOSIS.

In acute poliomyelitis the prognosis depends upon the extent of the morbid process with especial relation to the respiratory musculature. In the case published by Greene, Wilson, and Rothrock artificial respiration was carried on for 41 days before sudden death brought a "merciful solution to a hopeless problem." If the patient survives the first few days without grave respiratory difficulty the prognosis may be regarded as favourable. The issue in cases of acute ascending myelitis I have already discussed and I need only emphasise here the gravity of the outlook. Landry's paralysis must also be regarded as a particularly fatal disease and in this respect presents a distinct contrast to acute toxic polyneuritis, in which a favourable termination may be generally anticipated.

In conclusion, may I venture to hope that I have provided some evidence that there are four distinct kinds of acute paralysis, that there are clinical and anatomical points by which they may be differentiated, and finally, but by no means conclusively, that acute poliomyelitis is an acute specific fever in which the nervous system is attacked through the circulation, acute ascending myelitis a spinal lymphangitis, Landry's paralysis possibly a species of spinal lymphatic intoxication, and acute toxic polyneuritis a toxæmia producing a parenchymatous degeneration of the lower motor neurons?

THE TREATMENT OF ACUTE FAILURE OF THE HEART.¹

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IN selecting my subject I have been guided by the two following considerations: first, the importance of acute failure of the heart, which terminates life in such a vast number of diseases; and secondly, the fact that it is the medical man in general practice who is brought most intimately into relationship with this condition, and therefore fittingly qualified to discuss the subject and relate what his personal experience has been.

With regard to the manner in which acute heart failure is brought about two distinct classes of cases must be recognised. 1. The failure may be due to some organic condition affecting the heart, the blood, or the blood-vessels, and therefore initiated in a purely mechanical manner. 2. It may be the result of some nervous disturbance such as occurs in sudden death from vagus inhibition or in cases of tachycardia. The time-limits of this paper will allow me to deal with the first class only. It includes the vast majority of cases and is therefore of greater importance, more especially as the heart condition resulting from nervous disturbance does not so readily yield to treatment.

As a preliminary step I will first indicate the various pathological conditions with which we have to deal. The heart, as you know, has two functions: (1) that of a force pump, by means of which the blood is pumped during

systole from the veins where the pressure is low into the arteries where the pressure is high; and (2) that of a suction pump, by means of which the ventricles are filled with blood during diastole. As a matter of fact, the heart has very little suction power at all, its cavities being filled chiefly because the pressure in the large veins is greater than that in the pericardium. Acute heart failure is therefore brought about by any condition interfering with the emptying of its cavities during systole or the filling of its cavities during diastole.

1. Interference with the heart in its capacity as a force pump may be brought about in two ways: either (a) by deficiency in its muscular power or (b) by an increased resistance to the output of blood. (a) Deficiency in the muscular power of the heart occurs in acute degeneration of its muscular fibres resulting from the action of a poison. Diphtheria, typhoid fever, pneumonia, rheumatism, influenza, and alcoholic poisoning are all examples of diseases leading to acute degeneration of the heart. There is evidence that alcohol may act as a direct depressant to the muscular tissue of the heart, without degeneration of the fibres having been previously produced. When the blood-supply of the heart is interfered with rapid failure may be brought about as illustrated by that resulting from coronary occlusion. Finally, acute failure may result in cases of chronic muscular degeneration, brought about in all the various ways with which you are quite familiar. Probably in a number of these cases implication of the auriculo-ventricular bundle is at the bottom of the mischief. (b) An increase of the normal resistance to the output of blood leads to an increase of work to be done. The heart may be diseased or healthy and therefore failure to respond to the increased amount of work presented to it may be brought about in some cases quite easily and in others only if the increased resistance is very excessive. Such an increase of work results from excessively high pressure either in the systemic or pulmonary blood-vessels. Acute Bright's disease is a good example of a disease producing a more or less rapid rise of arterial blood pressure and in this disease acute failure of the left heart may result. Everyone is familiar with acute failure of the right ventricle resulting from obstruction in the pulmonary circulation especially in mitral stenosis, bronchitis and emphysema, and pneumonia. It is also held by some observers, notably Professor Kronecker of Berne, that the diminished barometric pressure of high altitudes gives rise to acute heart failure, especially when some disease of the heart or arteries is already present, by engorging the lungs with blood and thus throwing a strain upon the right ventricle.

2. *The diastolic filling of the heart* may be affected in one of two directions, the diastolic blood quantum being either increased or diminished. Each of these conditions leads to a rapid failure of the muscular tissue of the ventricles. I will give two examples of excessive filling of the cardiac cavities. Muscular exertion empties the veins towards the heart and distends the right ventricle, this effect being exaggerated by the deep respiratory efforts. The vaso-dilatation and low arterial blood pressure of prolonged exertion also aids in keeping up the distension of the veins. The aortic blood pressure, on the contrary, is raised by a sudden effort and as you know may lead to rupture of an aortic valve with regurgitation of blood and resulting acute dilatation of the left ventricle. The diastolic blood quantum is diminished by any condition which raises the intrathoracic pressure, the best example being pericardial effusion. A much more serious event is hæmorrhage into the pericardium, which rapidly leads to death by increasing the pressure in that cavity so that the heart is unable to fill. In this case the pericardium has not the time to stretch as it has in cases of pericardial effusion, so that in the latter disease death brought about in this way is comparatively rare. Finally, a diminution in the total amount of blood, as seen in hæmorrhage, and vaso-motor paralysis occurring in the shock, both produce acute heart failure owing to the diminished filling of the cavities during diastole and also through muscular weakness resulting from deficient circulation in the coronary vessels.

Cardiac thrombosis and embolism probably bring about heart failure in several of the various ways which I have already mentioned. They may interfere with both the filling and the emptying of the heart and at the same time failure in the muscular power of the ventricles is generally present.

I shall commence with the treatment of deficiency in the

¹ A paper read before the North London Medical and Chirurgical Society on Jan. 17th, 1907.

muscular power of the heart resulting from acute disease. This class includes undoubtedly the largest number of cases which have to be treated, and in each disease the muscular weakness is brought about by the direct action of some poison on the muscular fibres, and probably in many cases the high fever is also responsible to some extent. We are, therefore, dealing with an acute degeneration of the heart. The old treatment consisted in stimulating the heart by means of alcohol, in the hope of keeping this organ in action until the disease had passed away. Acute degeneration of the muscular tissue was not then so well recognised as at the present day, and there is no doubt that many of those patients died from exhaustion of the heart as a result of overstimulation. Stimulation also increases the work of the heart, and this is precisely the state of affairs which we wish to avoid. At the present day we recognise three indications for the treatment of this condition: (1) to prevent, to stop, or to diminish the degenerative process; (2) to diminish the work of the degenerate heart; and (3) to stimulate the heart only over very short periods when fatal syncope is threatened.

There is only one acute disease in which we can successfully accomplish these ends, and that disease is diphtheria. Acute diphtheritic poisoning kills the patient from the direct action of the toxin giving rise to fatty degeneration of the heart; there is also acute degeneration of the nucleus of the vagus, causing slowness and irregularity of the heart beat and a tendency to sudden syncope. This degenerative process can be arrested or prevented, if not already present, by the timely administration of antitoxin. The efficiency of action of the antitoxin depends upon the stage of the disease at which it is administered and upon the size of the dose. The importance of the antitoxic treatment of diphtheria is so very great that it cannot be reiterated too often. If antitoxin is administered on the first day of the disease, a circumstance only possible when the patient contracts the disease in a hospital, the mortality is only $\frac{1}{2}$ per cent., and this mortality increases in exact proportion to the delay in the administration of antitoxin. After the fifth day antitoxin is unable to produce any reduction of the mortality because by that time advanced degeneration has already occurred and if it is sufficient in amount to kill the patient antitoxin is quite powerless. Therefore not an hour's delay must be allowed to occur before it is administered. If antitoxin is given to an animal already poisoned by diphtheria toxin large doses are necessary to save the animal. If given at the same time as the toxin comparatively small amounts are sufficient. Therefore the dose of antitoxin administered to a diphtheria patient must be very large and clinical experience substantiates this statement. In a mild case from 4000 to 6000 units must be at once given; in a severe case from 12,000 to 24,000 units, and if the membrane shows signs of spreading the dose should be repeated on the following day. Larger doses than this are probably of no use.

The second point—namely, to diminish the work of the heart—is of the utmost importance in diphtheria, and this is accomplished by rest, both physical and mental. Vomiting, jumping up suddenly in bed, mental excitement or shock, respiratory paralysis, getting up too early in the course of the disease, will all induce heart failure and may lead to sudden death. This effect of strain in bringing out a latent weakness of the heart may be seen at any stage of the disease. Strict confinement to bed in all cases is absolutely necessary. As the pulse varies from hour to hour it should be examined frequently to detect the first sign of irregularity. A slow, irregular pulse is a very fatal sign. When such irregularity is detected, especially if at the same time the heart shows the physical signs of dilatation, the greatest care should be exercised in the nursing of the patient. The head should be kept low and the patient on no account allowed to sit up. He should be disturbed as little as possible and the nurse instructed to be very careful in syringing or making applications to the throat, as the patient may struggle and become very exhausted during the treatment. Vomiting throws a strain upon the heart and therefore caution must be exercised in feeding the patient. If vomiting is present rectal feeding should be resorted to, as no drugs have any influence upon this symptom when once it is present. A consideration of the length of time a patient should be detained in bed is important. However mild the case

appears to be, strict confinement to bed for three weeks is necessary, whether the pulse becomes irregular or not. The patient may then sit up for an hour or two during the day and at the end of a week will be able to walk about. If this exertion brings out a latent heart weakness the patient must be at once put back to bed. The signs of dilatation of the heart and irregularity of the pulse may last for eight weeks or more. Sudden death after the third month has not been observed; therefore, if the pulse is still irregular at this late period of the disease the patient may commence sitting up. Paralysis of the respiratory muscles throws a strain upon the heart by impeding the diastolic filling of that organ, by leading to obstruction of the pulmonary circulation, and by the collection of mucus in the air passages which cannot be expectorated. The heart muscle, already degenerate, is further affected by the chronic asphyxia induced. No direct treatment for this condition can be adopted but the useful expedient of raising the foot of the bed by blocks may be adopted. By this procedure the lungs are drained and the pharynx kept free from saliva, which causes asphyxial attacks by its entrance into the larynx. Belladonna may be given to diminish the secretion. The use of cardiac stimulants and tonics finds very little place in the treatment of acute fatty degeneration of the heart. It must also be remembered that the slow pulse indicates vagus irritation and therefore when this sign is present strychnine and digitalis are contra-indicated. Belladonna, which paralyses the terminations of the vagus in the heart, may be given and occasionally proves useful. Alcohol, which reflexly stimulates the heart, after absorption depresses the muscular tissue from the beginning and therefore is useless for prolonged stimulation in any form of cardiac degeneration. Its use is needed when an attack of sudden syncope occurs. Later in the disease, when the heart fails as the result of strain, the pulse is usually rapid. Strychnine and digitalis may now be given, because they slow the heart and, so to speak, put the brake on, thereby resting that organ. Digitalis in addition directly acts upon the muscle but strychnine does not. The application of heat and counter irritation to the præcordium is sometimes useful, especially when the patient is vomiting.

The acute cardiac degeneration occurring in typhoid fever is due to the direct action of some toxin upon the heart muscle and also to the prolonged fever. Unfortunately, we cannot prevent the degeneration by any antitoxin, as in the case of diphtheria, but we can act upon the fever. Cardiac degeneration, fortunately, is by no means so common in typhoid fever as in diphtheria. It usually shows itself clinically during the third or fourth week of the disease and is especially apt to supervene in those cases with very high fever. The pulse increases in rapidity and becomes very small and compressible and sometimes irregular. The first sound of the heart is short and the sounds are spaced. The impulse may also be displaced to the left. Systematic cold bathing, in addition to its beneficial effects on other systems, prevents heart failure in two ways. Firstly, it produces a lower range of temperature than would otherwise be present; and secondly, it acts as a tonic to the cardiovascular system as in health.

The limits of time prevent my entering into the details of the bath treatment. By this treatment the progressive increase in pulse frequency is not so often seen in typhoid fever; neither does it become so small and compressible. Systematic bathing renders less frequent the complications and modes of death dependent on circulatory failure and the mortality from these is considerably reduced. As in the case of the treatment of diphtheria by antitoxin, so in the treatment of typhoid fever by the cold bath, time is of the greatest importance. The treatment should be commenced at the earliest possible date.

In speaking of diphtheria we have seen the great importance of absolute rest, especially as the patients often feel quite well and resent the confinement to bed. The same applies to typhoid fever; however, in this condition rest is necessarily enforced because the heart failure occurs just at the very time when the patient is in his most helpless condition. Syncope is not so much to be feared as in diphtheria and does not occur during convalescence. Prolonged rest in bed after the temperature has dropped is therefore not so essential. Stimulants are usually not needed when the cold bath treatment is employed. They are, however, required if the case comes under observation late and heart failure has already appeared. In these cases it is dangerous to use very cold

³ Bolton: The Pathological Changes in the Medulla Oblongata in Acute Diphtheritic Toxæmia (Archives of Neurology, L.O. Asylum, vol. II, 1903).

baths. The temperature of the water should not be below 80° F. if the treatment is employed. If heart failure appears in spite of the bathing some stimulation is usually required. Alcohol continuously administered is unsafe owing to its depressing action on the heart muscle and its tendency to give rise to fatty degeneration. It is useful occasionally in an emergency, and also immediately before the administration of a bath. Hypodermics of strychnine are useful in heart failure in typhoid fever because this drug slows the heart and therefore gives it rest. It probably also prevents the tendency to collapse from vaso-motor dilatation. But, as Orle³ has shown, it is of little use unless it causes twitchings and therefore its value is detracted from on this account. Quinine given early is in favour with many. When the pulse rate reaches 120 per minute three grains every three hours should be given day and night. After 24 hours if the pulse is not slowed the dose should be raised to five grains. The drug must be given early. Digitalis is objected to by some because it is said to produce very little effect when the temperature is raised, but in the apyrexial periods the pulse may suddenly fall in frequency. Personally I have not seen any ill effects result from the employment of digitalis in this disease. Ammonia, ether, camphor, and caffeine all have their advocates, but personally I think they are not of much use.

In pneumonia the nerve centres are probably implicated as well as the heart muscle. The cardiac degeneration is brought about by the direct action of some poison, by the fever, and by the partial asphyxia to which the heart is subjected. The acceleration and increase in intensity of the respirations indicate an excitation of the respiratory centre. This is due to the partial asphyxia and probably also to the direct action of the toxic agent, since it occurs in the absence of pain and does not vary in proportion to changes in temperature. The same remarks may be made with regard to the acceleration of the pulse and high systolic blood pressure. Whether an increase in irritability of the heart muscle or an excitation of the cardio-accelerator centre over-riding that of the vagus centre is responsible for the circulatory changes is not certain. The signs of circulatory failure are increase in frequency and smallness of the pulse, some fall in blood pressure, cyanosis and pallor of the face, and coldness of the extremities. The first sound of the heart becomes short and feeble and probably also oedema of the lungs occurs. These symptoms may come on quite rapidly and death occur as early as the third or fourth day or some time after the first or second week. The left ventricle may be chiefly at fault or distension of the right ventricle may occur, with engorgement of the vessels of the neck. This condition of things, as I have before remarked, is referable to degeneration of the cardiac muscle and probably also to over stimulation. The obstruction to the flow of blood through the lungs also plays its part in increasing the work of the right ventricle. No specific serum, which is so valuable in diphtheria in preventing muscular degeneration, has so far been produced in the case of pneumonia. Certain sera have been manufactured but the results of this treatment are too indefinite at present to allow of any reliable deductions being drawn therefrom. Brem⁴ in a recent paper recommends internal hydrotherapy with the object of passing a large amount of fluid through the blood so as to remove, if such a thing be possible, the toxic agent by the kidneys. He claims good results from the internal administration of large quantities of water. It is important to treat the fever and there is no doubt that, as in typhoid fever, the best means to employ for this purpose is external hydrotherapy—e.g., cold sponging or even the cold bath if the fever is high. An ice-bag applied to the affected side not only relieves pain but reduces the fever, and it is a method of treatment of which I can speak very highly. If there is much cyanosis and signs of circulatory failure tepid water or hot sponging should be employed. Delirium and sleeplessness, signs of excitation of the central nervous system, will induce heart failure. In mild cases the bromides or trional are the best drugs to use; when persistent sleeplessness and pain are present a hypodermic injection of one-quarter of a grain of morphine and one-third of a grain of atropine is indicated.

With regard to the use of cardiac stimulants the same remarks may be made as were used in the case of diphtheria, because in pneumonia the central nervous system is also affected. All cardiac stimulants acting upon the central nervous system

such as strychnine are contra-indicated. Strychnine will further stimulate the respiratory centre and respiratory insufficiency may be induced. This objection does not apply to digitalis as it has practically no action upon the respiratory centre. The digitalis group of drugs acts chiefly upon the muscular tissue of the heart and is probably the best class of drugs to employ in circulatory failure in pneumonia. I object to the employment of digitalis in the early stage of diphtheria, because the pulse in this disease is so frequently very slow, but this objection does not hold in the case of pneumonia. Digitalis is regarded by some physicians as a specific for pneumonia. It is not of so much use when the right side of the heart is overloaded with blood, and for this condition the only efficient treatment is bleeding from the jugular vein. Opinions with regard to the administration of alcohol in pneumonia are divided. Some give it freely, others withhold it. Personally I administer alcohol only in cases of the alcoholic type of pneumonia. If used in other cases of pneumonia I think it should be given early when the central nervous system is excited and then it may do good by reducing cerebral excitement or it may be useful in a sudden syncopal attack as a reflex stimulant. Administration of oxygen temporarily relieves the asphyxia and causes a slight fall in the blood pressure. If used I think it should be allowed to play upon the patient's face and not be given through an inhaler.

Acute failure of the heart may result from alcoholic poisoning. Alcohol is a local irritant and therefore reflexly stimulates the heart, after absorption it is a depressant to the cardiac muscular tissue and leads to fatty degeneration. It allays irritability of the central nervous system and reduces delirium, and hence slows the pulse and respiration in acute diseases. It is stated that acute dilatation of the heart may come on after a drinking bout and independently of fatty degeneration. However this may be, dropsy resulting from acute heart failure is common in alcoholic subjects. It may be the left ventricle alone which is found dilated or the physical signs of enlargement of the right side also may be present. There is often no albumin in the urine, the pulse is usually quite regular, and after a few days' rest in bed, together with the administration of digitalis, the dropsy disappears. Sudden occlusion of a coronary artery always leads to death and does not admit of treatment. Acute failure of a heart which is the subject of chronic degeneration either leads to syncopal and anginal attacks or acute dropsy supervenes. In the former case the indications are to lower the blood pressure by nitroglycerine or any nitrite and reflexly to stimulate the heart by alcohol, ether, ammonia, and carminatives. When dropsy is present digitalis should be administered and other treatment for uncompensated heart disease employed. There is much more to be said in this connexion, but I must now pass on to consider those types of acute heart failure dependent upon an increase in the resistance to the output of blood. This increase of work may be presented either to the left ventricle, as is illustrated by acute Bright's disease, or to the right ventricle, as is seen in mitral stenosis or bronchitis and emphysema, in which diseases acute failure of the right ventricle is apt to occur. In acute scarlatinal nephritis hypertension in the systemic circuit is rapidly developed. The heart is healthy to begin with, but in from five to six weeks shows the physical signs of hypertrophy of the left ventricle. In the meantime failure of this side of the heart may occur leading to oedema of the lungs, cyanosis, and a rapid feeble pulse. The right side is also commonly dilated. The first indication for treatment is to lower the arterial tension and to relieve the heart. In order to do this nitroglycerine should be employed and may be used fully combined with venesection and saline purgation. At the same time I employ digitalis to stimulate the heart muscle. Digitalis should not be used for cases of this description unless combined with nitroglycerine, as one of its actions is to raise the blood pressure.

When acute dilatation of the right side of the heart occurs in mitral stenosis or emphysema and bronchitis the treatment is venesection, preferably from the jugular vein. I say from the right side of the heart in this way; whereas, if the basilio vein be used, the blood is abstracted not from the right side of the heart directly but from the whole of the arterial system, and thus indirectly from the right ventricle. Digitalis with diffusible stimulants are not of any use till the patient has been bled.

I now pass to a consideration of acute the heart

³ Orle: An Experimental Research into the Pathology of Shock, 1897, and Blood Pressure in Surgery, 1903.

⁴ Brem: Johns Hopkins Hospital Bulletin, vol. xvi., No. 175, p. 325.

resulting from an increase in the diastolic blood quantum. Here the heart muscle may be perfectly sound and the acute failure results directly from a flooding of the cavities with blood during diastole so that the ventricles become over-distended and are unable to empty. The best example of this condition is found in the effects of strain, including all forms of undue exertion. Sudden severe exertion results in a narrowing of the peripheral arterioles and a rise of systemic blood pressure. The blood pressure, however, soon falls from reflex dilatation of the arteries of the muscles, from increase of the circulation in the skin, and from the sweating produced. The muscular contractions empty the veins in the direction of the heart and the right ventricle is unduly dilated during diastole. The left ventricle secondarily dilates. In prolonged exertion, therefore, the stress is chiefly borne by the right ventricle. When the strain is very sudden the stress is chiefly borne by the left ventricle and an aortic valve may rupture leading to rapid acute dilatation of that cavity. It follows, of course, that the most dangerous results are seen in those who have not had any preliminary training. Functional disorder of the heart, irritable heart, or persistent rapidity for months may follow, but what concerns us now is the acute dilatation of the right ventricle. Cyanosis, dyspnoea, cold perspiration, precordial pain and irregular small pulse ensue, and later mitral regurgitation, albuminuria, and oedema may appear. Autometabolic poisons are formed in violent exertion and may account for the profound insensibility or convulsions which are liable to occur. The first principle in the treatment of such a condition is to relieve the right side of the heart by venesection and the application of leeches. The heart must then be stimulated by counter-irritants and diffusible reflex stimulants such as alcohol, ether, or ammonia. Following this, if the patient recovers a few weeks' complete rest are absolutely necessary, with careful supervision. Later, quiet and interesting exercises such as golf may be indulged in. No alcohol or smoking should be allowed. If dropsy supervene with dilatation of both cavities of the heart digitalis is the drug to employ. When an aortic valve suddenly ruptures there is severe pain in the precordium and faintness, with irregular pulse and possibly hæmoptysis. Drugs are not of much value here and the only good treatment consists in absolute rest and the administration of morphine. Later, if the patient survives, the pulse develops the characters of aortic regurgitation. Cardiac thrombosis leads to acute dilatation of the heart, the result being violent anginal pains, with cyanosis and all the other signs of acute failure. The best treatment in cases of this description is to inject morphine subcutaneously.

According to Professor Kronecker of Berne² the effect of the fall of barometric pressure occurring in mountainous districts is to bring about engorgement of the lungs and increased filling of the right side of the heart. This is said to occur in healthy people at 10,000 feet. It becomes very dangerous in people with impairment of the vascular system, either arterio-sclerosis or chronic heart disease. The symptoms of heart failure, moreover, may not be present until after the patient has returned to the lower level, when he quickly may develop the symptoms of acute cardiac dilatation with fullness in the head and vertigo. The symptoms are especially apt to supervene if the ascent has been rapid, as occurs in railway journeys. The first point in the treatment is to send the patient down to the lower level and let him have absolute rest for several days. The methods of relieving the heart employed by the medical men who have these cases to treat are venesection, followed by the application of counter-irritation with aperients and diaphoretics. As stimulants caffeine and camphor are recommended but not digitalis. Insomnia, which is liable to be troublesome, is treated by wet packs and bromides. Morphine in doses of from one-fourth to one-third of a grain is also used. If the patient recovers he is to be kept perfectly quiet for several weeks or even months.

I will now take up the last group of cases of acute heart failure—namely, that resulting from a diminution in the diastolic blood quantum. The efficient contraction of the cardiac muscle depending upon the proper distension of its cavities during diastole and also upon the normal circulation of blood through the coronary vessels, any condition which interferes with the diastolic filling of the heart by reducing the blood quantum will bring about a rapid acute failure of the organ. This may be brought about in one of three ways:

(1) by a diminution in the total amount of blood; (2) by vaso-motor paralysis which increases the total capacity of the vascular system; or (3) by an increase of pressure in the chest which mechanically prevents the diastolic filling of the heart. The first condition is typically illustrated by hæmorrhage. The indications for the treatment of this accident are (a) to stop the hæmorrhage, and (b) to replace the blood which has been lost by salt solution. The saline must be given intravenously but not unless the hæmorrhage can be certainly stopped. The preliminary syncope is to be treated by raising the foot of the bed so as to increase the diastolic filling of the heart. The legs may then be tightly bandaged or abdominal pressure applied so as to force blood along towards the heart. The patient must be placed in a cool room and physical, emotional, and mental rest completely secured. If the bleeding has been absolutely stopped an intravenous injection of saline solution is then to be given and some diffusible stimulant. If the bleeding has not been certainly stopped, styptics are to be given if there is any probability of their reaching the bleeding spot. Saline is not to be intravenously injected, but after time for clotting has been allowed to pass repeated small subcutaneous injections of saline solution, or saline solution by the rectum, may be administered. The thirst is best relieved by spoonfuls of cold acidulated water. Later, iron will be found a valuable heart tonic. The second condition—namely, vaso-motor paralysis—is seen in shock. Shock probably includes a wider field than simple vaso-motor paralysis, but the researches of Crile have shown that vaso-motor paralysis is a very important factor and this affords definite indications for treatment. According to Crile's³ definitions collapse is an immediate depression which may lead to death and may be primarily due to one or more of the following factors: (1) to cardiac failure; (2) to respiratory failure, resulting from disease or injury of thorax or of the central or peripheral nervous mechanisms; (3) to hæmorrhage; or (4) to vaso-motor paralysis, as in peritonitis, chloroform poisoning, and so on.

Shock is a later depression which may lead to death and is due to impairment or breakdown of the vaso-motor mechanism. It may be added to by any of the factors causing collapse. The vessels have lost their power to accommodate for changes of position, they are toneless, and stimulation of a sensory nerve causes no vasomotor response, or a further fall of blood pressure may result. The blood is largely transferred to the venous side and collects chiefly in the splanchnic vessels.

In the treatment of this condition it must be remembered that prevention is better than cure, and a great deal can be done, as you are all quite well aware, especially in conducting operations, to avoid subsequent shock. The indications for the actual treatment of a case are (1) to restore the vascular tone or (2) to increase the volume of the blood. Strychnine might appear to be an ideal drug for the treatment of this condition, as it is a powerful vaso-motor stimulant; however, Crile has shown that it is practically useless, because the vaso-motor centre is not in a condition to respond and, moreover, strychnine will not produce a rise of blood pressure until the stage of twitching has been reached. It is also known that shock due to over-stimulation of the vaso-motor centre can be produced by strychnine. Better results may be expected to follow the administration of suprarenal extract, which acts on the peripheral vaso-motor mechanism. A single injection of adrenalin is useless, because the subsequent fall of blood pressure is too rapid. If very small amounts are administered at frequent intervals in conjunction with repeated saline infusion the best results are obtained. The saline infusion should not be administered in a single large dose, especially in post-operative shock, but in repeated small doses. The position of the patient is of great importance. The head should be placed low and the feet raised in order to aid the diastolic filling of the heart. The question of diminishing the capacity of the vascular system by external pressure is to be considered. Crile, as you know, has invented a pneumatic suit, by means of which he exerts pressure on the surface of the body; he claims good results from its employment. At any rate bandaging the legs and abdomen can be tried quite easily. Cardiac stimulants are of doubtful value, because the heart will usually respond if sufficiently supplied with blood. The external application of heat is, of course, usually necessary.

² Zangger: THE LANCET, June 22nd, 1903, p. 1730.

³ Crile: Loc. cit.

The last group of cases of acute heart failure with which I shall deal includes those in which there is an increase of pressure in the chest. The heart, as you are aware, has very little suction power and is filled with blood mainly because the pressure in the veins is higher than the pressure in the pericardial sac, in which the pressure is continually negative, this negative pressure being markedly increased during inspiration. An increase of pressure in the pericardium is therefore accompanied by deficient filling of the heart and hence the great danger of acute heart failure. Two conditions with which we have to deal are pericardial effusion and pericardial hæmorrhage. The pericardium readily stretches as the result of pericarditis and will hold a considerable quantity of fluid without its tension being raised to the dangerous limit; the fluid is, moreover, poured out comparatively slowly and hence time is allowed for the stretching of the pericardium. However, if a high pressure occurs the patient will certainly die from acute heart failure unless tapping is resorted to, the needle being introduced into the fourth or fifth left intercostal space near the left edge of the sternum. Pericardial hæmorrhage is much more dangerous because the blood is poured out at a high pressure and rapidly distends the pericardium, which has not time to stretch. The patient dies not from the loss of blood but from the rapid rise of intrapericardial pressure. Tapping is, of course, useless and the patient always dies unless operation is resorted to within about 14 hours. The results of operation are certainly encouraging, as 41 per cent. recover,* cases of injury to the heart, of course, being more favourable than rupture of that organ due to disease.

Practically speaking, rupture of the heart due to fatty degeneration, acute abscess, and so on, always leads to death. The same may be said of a ruptured aneurysm. If the wall of the ventricle or a coronary artery be ruptured as a result of injury the pericardium must be at once opened and the artery tied or the wall of the ventricle sutured. It is advisable to introduce interrupted sutures not involving the endocardium and placed close together. They should be tied during diastole.

Finally, pleural effusion is liable to be accompanied by acute heart failure, and in the days when Trousseau* advocated tapping sudden death was of frequent occurrence. In addition to causing a rise of intrathoracic pressure, pleural effusion obstructs the circulation through the lung and displaces the heart. Whenever the dulness reaches up to the apex of the lung, whether symptoms of respiratory distress are present or not, the patient is in danger of acute heart failure. He may die suddenly from syncope or a slower heart failure may occur, resulting in intravascular thrombosis or œdema of the sound lung. The only treatment for this condition is tapping and the chief indication for tapping is the amount of the effusion.

Devonshire-street, W.

CEREBRO-SPINAL FEVER.

BY NATHAN RAW, M.D. DURH., M.R.O.P. LOND.,
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VISITING PHYSICIAN TO THE MILL-ROAD INFIRMARY, LIVERPOOL.

THE somewhat sudden and alarming epidemics of cerebro-spinal fever in Glasgow, Belfast, and other large centres of the United Kingdom have served to direct special attention to this most extraordinary and obscure disease. Isolated or sporadic cases of typical cerebro-spinal fever are constantly occurring in the practice of any large hospital, and I have during the last ten years observed several cases which cropped up in a most mysterious manner, some of them recovering and others rapidly progressing to a fatal termination. Why it is that these sporadic cases should not become epidemic is difficult to understand, and it is still more difficult to understand how the disease is spread with such rapidity amongst the children of a populous centre. The general impression is that the special germ or micro-organism known as the meningococcus of Weichselbaum is conveyed through the air passages directly to the base of the brain. The resemblance in the symptoms of this disease to many other forms of meningitis

renders it extremely difficult of classification and the definition given by the late Mr. Radcliffe is, in my opinion, the most accurate. He describes cerebro-spinal fever as "an acute, epidemic disease, characterised by profound disturbance of the central nervous system, indicated at the onset chiefly by shivering, intense headache or vertigo, or both, and persistent vomiting; subsequently by delirium, apathy or stupor; an acutely painful condition with spasms—sometimes tetanoid—of certain groups of muscles, especially the posterior muscles of the neck, occasioning retraction of the head; and an increased sensitiveness of the surface of the body. Throughout the disease there is marked depression of the vital powers, not unfrequently collapse; and in its course an eruption of vesicles, petechial, or purpuric spots, or mottling of the skin is apt to occur. If the disease tend to recovery, the symptoms gradually subside without any critical phenomena and convalescence is protracted; if to a fatal termination, death is almost invariably preceded by coma. After death the enveloping membranes of the brain and spinal cord are found in a morbid state, of which the most notable signs are engorgement of the blood vessels, usually excessive, and an effusion of sero-purulent matter into the meshes of the pia mater and beneath the arachnoid. To the clinical manifestations of the disease indicated in this definition may be added the presence of Kernig's sign and of tache cérébrale."

From my own personal experience of a great many forms of inflammatory disease involving the brain and spinal cord I would say that the presence in the exudate of the meningococcus of Weichselbaum removed by lumbar puncture is the only absolute indication that we are dealing with true cerebro-spinal meningitis. If this particular organism is discovered and corresponds to the well-defined tests, then we are dealing with a case of epidemic cerebro-spinal meningitis. In a few instances it is impossible to discover the particular organism, but that alone will not negative the true nature of the disease. The full and excellent report of Dr. Gordon made to the Local Government Board is well worthy of careful study, hence it is not necessary to refer to the special characteristics of the micro-organism. The two cases which I record are of profound interest in demonstrating the difficulty, I might say impossibility, of differentiating between this disease and another form of meningitis with similar symptoms during life.

CASE 1.—The patient, a boy, aged ten years, was admitted into Mill-road Infirmary on Feb. 1st, 1907. His mother stated that he had been quite well until a week previous to admission (Jan. 24th), when he came home from school complaining of pain in the head—across the forehead and at the back of the head. He had also complained of pain in the abdomen and had vomited once on the morning before admission. The child had been very quiet and drowsy but irritable and not caring to be touched at all. On the night of Jan. 31st he had screamed out at intervals and had been restless and delirious. The mother said that the child had stated on Jan. 21st that he had been hurt by a football hitting him in the abdomen. He had complained of pain since then and had a slight cough. The bowels were regular.

On admission the patient was unconscious, delirious, and very irritable. The temperature was 103° F., the pulse was 110, and the respirations were 40. When left alone he was quiet but he breathed noisily. When being examined he struggled and was resistive. He did not understand questions and made no attempt to speak. He was not emaciated but there were several petechial spots about the skin. The patient assumed a lateral decubitus. Both knee-jerks were present and were somewhat exaggerated. Kernig's sign was not marked. There was no retraction of the head but there was some stiffness on passive movement. The pupils were dilated equally and there was no squint or nystagmus. There was a discharge from the ear on the right side. The abdomen was not distended, was soft, and moved with respiration. The tongue was dirty and dry and the bowels were constipated. The cardiac rhythm was rapid and regular in time and force. Râles and rhonchi were audible all over the upper and lower lobes of the left lung. There was no loss of percussion resonance. Over the right lower lobe there was loss of resonance. The breathing was bronchial and there were fine crepitation and bronchophony, which were also audible over the back of the right upper lobe. One and a quarter grains of sulphate of quinine were given every four hours and a drachm of brandy at like intervals. A "pneumonia jacket" was applied and seven and a half

* Hill: THE LANCET, Feb. 16th, 1901, p. 491.

* Trousseau: Lectures on Clinical Medicine, vol. III., p. 221 (New Edinburgh Society).

grains of bromide of potassium were directed to be given if required. On the 2nd there was dried purulent discharge in both pinnae. There was dulness of the percussion note and fine and medium râles were heard down the whole of the right side of the chest. A dose of three grains of calomel was given, an ice-bag was applied to the head, and an enema was directed to be administered if required. The patient had a rigor at 7 P.M. and the temperature rose to 104.4°. The pulse was intermittent and the child was unconscious. He was delirious at times and he often cried out. Lumbar puncture was performed at 4.30 P.M. The fluid was clear, serous, and colourless. Cultures were made and the fluid was centrifugalised. Under the microscope the deposit was found to contain diplococci of *Welchsebaum*. On the 3rd the patient was still drowsy and semi-conscious but was not shouting out so frequently and was not so restless. Lumbar puncture was again performed at 12.45 P.M. and the fluid was still found to be clear and colourless. On the 4th the child did not appear to be so comatose as before, was not so restless, and appeared to be able to hear questions. Kernig's sign was marked. There was no distension of the abdomen. There was still some dried pus on the right pinna. The ear was syringed with boric acid lotion, after which a solution of one ounce of perchloride of mercury and three drachms of rectified spirit of wine was dropped in morning and evening. Three grains of calomel were given. On the 5th the patient was deeply comatose. The temperature was 106.4°, the pulse was 160, and the respirations were 58. The pulse was very thready and soft, there were no knee-jerks, and all the limbs were flaccid. The head was still rigid. There was some divergent strabismus. The chest still had râles and rhonchi but there were clearing from the front and were audible in the axilla and the back. The patient was perspiring freely. A tepid sponging brought the temperature down to 101°. An enema was administered. On the 6th the temperature, which on the previous evening had been 100.2°, rose at 2 A.M. to 105°. The patient was rather irritable and tried to rub his eyes and ears. The abdomen was slightly retracted still but was soft. The pulse was very rapid and feeble. Coffee was given. At 4.30 P.M. the patient was much worse, the pulse being very rapid and more feeble (120 per minute). There were marked subcostal tenderness and flocculation with occasional cough. The respirations were 60 and the temperature was 105.4°. A drachm of glycerine as an enema was administered with good result and tepid sponging was ordered when the temperature rose above 103.6°. On the 7th the patient was still unconscious and the pulse was very feeble and rapid. The temperature was 104.4° at 10 A.M. At 1 P.M. a tepid sponging brought the temperature down to 101° and the patient's condition was much improved. Lumbar puncture was performed. The fluid was still clear and was not running so freely as before. A petechial rash was marked on the legs and the body. There was optic neuritis in both eyes. *Mistura digitalis cum strychnina* (two drachms every four hours) was ordered. At 8 P.M. the patient appeared to be much more comfortable and seemed to understand questions and to take notice of affairs. There were slight sweating and increased diuresis. The colour had improved. On the 8th the improvement was not maintained. The pulse was very rapid and feeble and the temperature kept high. The bowels were still constipated. The glycerine enema was repeated. On the 9th the patient remained in the same condition as on the previous day. There were loud creaking râles and rhonchi audible over the entire chest, back and front. Bronchial breathing was present over the right lower lobe only and nowhere else. A tepid sponging was applied twice during the night with good effect. The pulse was very feeble and rapid (140 per minute) and the respirations were 44 per minute. There was a small septic blister over the sacrum. Dry gauze and iodoform powder were used. There was slight purulent, very offensive, discharge from both ears. A soap-and-water enema was administered and two drachms of glycerine per rectum were ordered to be repeated if required. The ear drops and the syringing were continued. On the 11th the patient became comatose and died.

A post-mortem examination was made 12 hours after death. No gross macroscopic lesions were seen on the brain or on the spinal cord. The lungs were in a state of broncho-pneumonia. There were several old calcareous ulceration of the intestine. The kidneys, the spleen, the heart, and the liver were healthy. Post mortem appearances were, in fact, almost negative.

CASE 2.—The patient, a child, aged eight years, was admitted to Mill-road Infirmary on Feb. 13th, 1907. His mother stated that on Feb. 10th the child had complained of severe pain in the head and had vomited. On the 12th he had become very drowsy and had not been roused since. He had taken but little nourishment. The bowels had been opened on the 11th after an aperient but not since.

On admission the temperature was found to be 100° F., the pulse was 104, and the respirations were 26. The patient was lying on his back in a comatose state, the limbs being all flexed and rigid but they could be straightened by continued pressure. There was no rigidity of the neck nor was there retraction. The pupils were equal. There was no paralysis of the eye muscles. The lungs were clear and the abdomen was flat. There was no discharge from the ears. Two grains of calomel and an ounce of white mixture were given in the morning and half an ounce of diaphoretic mixture was ordered to be given every four hours. On the morning of the 14th there were rigidity and retraction of the neck. The patient ground his teeth, the limbs were all flexed and rigid, the knee-jerks were very sluggish, and *tache cérébrale* was well marked. The child uttered no cry. The tongue was furled but moist and there were sordes on the lips. Urine and faeces were passed involuntarily and the patient took no notice of anything. He was not irritable when touched. There were no petechial spots. At 3.15 P.M. lumbar puncture was performed when about 30 cubic centimetres of slightly opalescent fluid ran out. At 11 P.M. the patient was perspiring. The neck was very rigid but not very retracted. The patient was not so listless. There were variable squints (slight). Ten cubic centimetres of cerebro spinal fluid were centrifugalised. It was slightly opalescent. There was a fair amount of whitish yellow deposit but no red deposit. Microscopical examination showed a large excess of leucocytes, multinuclear and lymphocytes, a very few red blood corpuscles, and no organisms. On the 15th the patient still perspired profusely. Millaria appeared all over the upper chest. The neck was rigid and the child could not put his chin on his chest. The arms were folded across the chest and were rather rigid. The legs were straight now but Kernig's sign was present. The knee-jerks were slight and there was slight Babinski's sign. There was incontinence of urine and faeces and the patient would not respond to speech. The pupils were dilated but they reacted to light. There was paresis of the external rectus of the left eye. The patient was taking nourishment fairly well. The bowels were rather relaxed; the abdomen was flat. There was no vomiting. There had been no shouting out since admission. Sulphate of quinine mixture, one drachm, was given every four hours. The patient spoke a little when spoken to. He said "What" and "Well." On the 16th he would not speak. The tongue was moist but furled. Kernig's sign was present. There were no spots but some subcuticular mottling was observable on the thighs. The squint was still present. There were some large moist râles to be heard at the left base and some rhonchi at the front chest. At 5.30 P.M. lumbar puncture was performed and about 20 cubic centimetres of fluid ran out, at first in a stream, not drops. Ten cubic centimetres of the fluid were centrifugalised. Numerous lymphocytes and multinuclears were in the field but no organisms were present. At 9 P.M. the patient recognised his father and talked in a delirious way. On the morning of the 17th he again talked a little but was delirious. The head was still very rigid and the arms were folded on the chest. The legs were straight but Kernig's sign was present. The patient did not shout out at all, but he was restless. He had not passed urine for 12 hours. The tongue was moist but was covered with dirty white fur. A quarter of a grain of calomel was given every two hours. On the 18th two drachms of brandy were ordered to be given every three hours. There was slight ptosis on the right side and the right pupil was larger than the left one. There was no vomiting. The patient had uttered no cry since admission. He had tremor of the limbs (upper) again on this day. There was a profuse crop of millaria on the chest. At 8 P.M. lumbar puncture was performed when about 15 cubic centimetres of fluid were withdrawn; at first it ran out, not in drops; it was slightly turbid. Microscopical examination showed an excess of cells as before, but no organisms. On the 19th the patient was rather worse. He was restless and he uttered sighing noises. The head was not retracted, but the neck was rigid. The back also was rigid. At 10 P.M. as the patient

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Practically speaking, rupture of the heart due to fatty degeneration, acute abscess, and so on, always leads to death. The same may be said of a ruptured aneurysm. If the wall of the ventricle or a coronary artery be ruptured as a result of injury the pericardium must be at once opened and the artery tied or the wall of the ventricle sutured. It is advisable to introduce interrupted sutures not involving the endocardium and placed close together. They should be tied during diastole.

Finally, pleural effusion is liable to be accompanied by acute heart failure, and in the days when Trouessau⁸ advocated tapping sudden death was of frequent occurrence. In addition to causing a rise of intrathoracic pressure, pleural effusion obstructs the circulation through the lung and displaces the heart. Whenever the dulness reaches up to the apex of the lung, whether symptoms of respiratory distress are present or not, the patient is in danger of acute heart failure. He may die suddenly from syncope or a slower heart failure may occur, resulting in intravascular thrombosis or œdema of the sound lung. The only treatment for this condition is tapping and the chief indication for tapping is the amount of the effusion.

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renders it extremely difficult of classification and the definition given by the late Mr. Radcliffe is, in my opinion, the most accurate. He describes cerebro-spinal fever as "an acute, epidemic disease, characterised by profound disturbance of the central nervous system, indicated at the onset chiefly by shivering, intense headache or vertigo, or both, and persistent vomiting; subsequently by delirium, often violent, alternating with somnolence or a state of apathy or stupor; an acutely painful condition with spasm—sometimes tetanoid—of certain groups of muscles, especially the posterior muscles of the neck, occasioning retraction of the head; and an increased sensitiveness of the surface of the body. Throughout the disease there is marked depression of the vital powers, not unfrequently collapse; and in its course an eruption of vesicles, petechial, or purpuric spots, or mottling of the skin is apt to occur. If the disease tend to recovery, the symptoms gradually subside without any critical phenomena and convalescence is protracted; if to a fatal termination, death is almost invariably preceded by coma. After death the enveloping membranes of the brain and spinal cord are found in a morbid state, of which the most notable signs are engorgement of the blood vessels, usually excessive, and an effusion of sero-purulent matter into the meshes of the pia mater and beneath the arachnoid. To the clinical manifestations of the disease indicated in this definition may be added the presence of Kernig's sign and of tache cérébrale."

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On admission the patient was unconscious, delirious, and very irritable. The temperature was 103° F., the pulse was 110, and the respirations were 40. When left alone he was quiet but he breathed noisily. When being examined he struggled and was resistive. He did not understand questions and made no attempt to speak. He was not emaciated but there were several petechial spots about the skin. The patient assumed a lateral decubitus. Both knee-jerks were present and were somewhat exaggerated. Kernig's sign was not marked. There was no retraction of the head but there was some stiffness on passive movement. The pupils were dilated equally and there was no squint or nystagmus. There was a discharge from the ear on the right side. The abdomen was not distended, was soft, and moved with respiration. The tongue was dirty and dry and the bowels were constipated. The cardiac rhythm was rapid and regular in time and force. Râles and rhonchi were audible all over the upper and lower lobes of the left lung. There was no loss of percussion resonance. Over the right lower lobe there was loss of resonance. The breathing was bronchial and there were fine crepitation and bronchophony, which were also audible over the back of the right upper lobe. One and a quarter grains of sulphate of quinine were given every four hours and a drachm of brandy at like intervals. A "pneumonia jacket"

⁷ HILL: THE LANCET, Feb. 16th, 1901, p. 491.

⁸ Trouessau: Lectures on Clinical Medicine, vol. III, p. 221 (New Sydenham Society).

nature of the infection. It is highly improbable, judging from the analogy of other cases of wound infection, that the true incubation period is over 24 hours in length. If, therefore, the initial rigor, or the first rise of temperature, occurs at a longer period than this after confinement, the assumption is that the patient was not infected at that time, but subsequently during the puerperium. In the "practitioners'" cases the average day of onset was the third and in the "midwives'" series between the fourth and fifth. It would then appear that the midwife has not usually infected the patient by her actions at the time of the confinement. In subsequent infection the main factor, I believe, is the administration of vaginal douches which were given in almost every instance in this series. Possibly the neglect adequately to protect the external genitalia after confinement must also be considered.

Apart from these cases only, I may say that my experience leads me to believe that the routine use of the vaginal douche is the predominating factor in a large number of cases of puerperal fever. The injections are given with a Higginson's syringe almost invariably, and even if this is not used for enemata also—and I may add here that by no method of supervision whatever is it possible to insure that it shall not be so employed—infection of the interior of the instrument takes place whenever a vaginal douche is given, and the syringe can only be disinfected by prolonged boiling, which very few of the inexpensive instruments on the market will stand without becoming useless.

I may here express my own opinion that the carrying of a Higginson's syringe by midwives should be made illegal by supervising authorities. It is quite easy to give an enema by means of the douche can, and even if the same nozzle were to be used for rectal and vaginal injections by a careless or unscrupulous midwife, only the exterior and not the interior also of the instrument would be thereby infected.

The bacteriology.—In every instance swabs were taken with due precautions from the interior of the uterus and cultures were made therefrom in the hospital laboratory. The results are as follows. Streptococci were present in 29 cases. Of these, bacillus coli communis was present also in five cases; bacillus coli communis was present alone in one case; gonococci were present alone in two cases; staphylococci were present alone in one case; and a bacillus, as yet not identified, was present alone in one case. In 15 instances there was either no growth on the tubes or some suspicion of contamination of the swab. In 27 cases samples of blood taken from the basilic vein were examined also. Out of these no growth was obtained in 19 cases, whilst streptococci were present in eight. No other organisms were found in any of the blood specimens, though a full examination was made in each case.

For the identification of the various organisms the usual bacteriological methods were employed. I do not propose to enlarge on the bacteriology of puerperal septicæmia at present, but I should mention that the proportion of cases in which streptococci were found is greater in the 1906 cases than in those of the previous year. This is, I believe, to be explained by the fact that in 1905 there was a much larger proportion of "midwives'" as distinct from "practitioners'" cases. In the former late infection is the rule, and bacillus coli is present more frequently.

The nature of the lesion.—As I have stated, there was, in almost every case, evidence of intense toxæmia on admission, but the source of this was not always easy to determine. It is, however, possible to classify the cases somewhat roughly according to the nature of the lesion and we have accordingly the following. 1. *Cases of retained placenta or membranes.*—Of these there were 18, but it is important to note that in all except four the condition had passed from that of sapræmia only to septicæmia when the patient was first seen. In these the recovery was slow and often interrupted by pelvic inflammation or abscess, whereas in the purely sapræmic cases a marked and sustained improvement followed the removal of the retained products. This series also shows the futility of treating puerperal fever by intra-uterine douching only, without examination of the interior of the uterus, for in almost every instance the interior of that cavity had been douched by a medical man previously. There was one death only in this series. 2. *Injuries.*—These were apparently the cause of the toxæmia in seven cases and in all the lacerations had been produced by the use of instruments. In one case there was a tear extending through the vaginal vault and the side of the cervix

through the broad ligament into the peritoneal cavity which had been caused by the use of Hegar's dilators without preliminary anaesthesia or steadying of the cervix. In another, an almost precisely similar lesion followed manual extraction of the placenta. In the remaining five cases the premature application of forceps was responsible for the injury. Fortunately all these recovered, though general peritonitis supervened in one instance. 3. *General peritonitis.*—Eight cases, with four deaths. In all of this series the abdominal cavity contained free pus to an amount of at least one pint. All were treated by laparotomy and drainage with flushing in one case. When it is noted that the supervention of general peritonitis in puerperal cases is almost always regarded as an indication that death is imminent and unavoidable it is evident that this series, as far as it goes, is an indication that it is not always wise to refuse operation in moribund cases. 4. *Pelvic suppuration.*—Three cases, all fatal. Here there was a collection of pus in some portion or other of the pelvis shut off by adhesions from the general peritoneal cavity. These were all apparently hopeless cases in which an accurate diagnosis was impossible and an exploratory operation was therefore performed on admission. This series does not include cases in which pelvic suppuration occurred in the course of convalescence and in which the results were much better. 5. *General septicæmia without obvious lesion.*—13 cases with four deaths. In each of these there was marked subinvolution of the uterus, but no evidence of retained placenta or of laceration. Probably most, if not all, were instances of septic endometritis.

The treatment adopted.—In all but eight cases the procedure adopted on admission was as follows. After thorough preparation of the parts the patient was examined in the operating theatre in the lithotomy position. At first a general anaesthetic was given, but latterly, on the suggestion of Sir William Sinclair, I have with advantage given alcohol internally followed by the hypodermic injection of morphine instead. The parts were then exposed by an Auvar's weighted speculum and the cervix steadied with volsellæ. Cultures were taken from the interior of the uterus, which was then curetted with a specially made instrument. This is shaped in general like a Sim's sharp curette and is made as light as possible. The cutting hoop, however, is pear-shaped and broadest at its extremity, where it measures an inch and a half across. After as thorough a removal of the endometrium as possible, the raw surface was swabbed thoroughly with undiluted izal fluid and the cavity was then packed with izal gauze, the vagina being loosely plugged also. Sometimes an intra-uterine douche of 1 in 500 izal solution was used also, but as a rule no douching was thought necessary at the time of the operation or subsequently. In two instances the curetting and swabbing were repeated on the next day. When curetting was not done laparotomy was performed for the reason stated in the table under each case. It will therefore be seen that the "routine" treatment of these cases consisted in vigorous disinfection of the uterus—a procedure which has frequently been described as almost necessarily fatal to the patient.

The objection usually urged against the use of the curette in septic conditions is that the barrier of leucocytes on the maintenance of which the patient's only hope of safety is supposed to lie is thereby disturbed, with the result that the organisms which it formerly restrained are free to make their way into the blood stream. It is, however, to my mind more probable that it is just in these cases of septic disease that the barrier is either useless or, more probably, non-existent and that what is wanted is something that will either take away or kill the organisms themselves. Moreover, though I have now examined sections from a somewhat large number of puerperal uteri in cases of septicæmia, I have only twice seen any signs of this barrier, even in cases where curetting had not been performed.

In this series the uterus has been removed as a last resource three times, once vaginally and once abdominally by myself, and once vaginally by Sir William Sinclair, who saw the case in consultation. In no case did recovery ensue. I have no experience of removing the uterus before the patient becomes intensely ill, as I should in any case try thorough local disinfection first. There can be no doubt that the shock following the removal by any method of the puerperal uterus is very great. There have been no cases in which thrombosed veins in the broad ligaments have been detected and ligatured; in fact, there have been no cases of thrombosis in any situation in this series at all. In three

had not passed urine since 1 A.M., a soft rubber catheter was passed. The urine was acid and clear and its specific gravity was 1010. At midnight on the 20th a catheter was passed. On the 21st the patient was in a dying state. There were no fresh focal symptoms.

A post-mortem examination was made 16 hours after death. Pus was found in the interpeduncular space and over the upper surface of the cerebellum in the middle line. The vertex of the brain was normal. Miliary tubercles (early) were discovered in both lungs and in the spleen and liver. There was a caseating patch in the spleen of about the size of the head of a bonnet-pin, as well as some caseating material about the glands round the head of the pancreas. The mesenteric glands were normal. The bronchial glands were not noticeable. On Feb. 25th some smears from the caseating patch in the spleen and the caseous glands about the head of the pancreas showed numerous tubercle bacilli.

The above two cases show the impossibility of making an accurate diagnosis between cerebro-spinal and acute tuberculous meningitis, especially in time of epidemic when attention is turned in that direction. The absence of tubercle bacilli from the lumbar puncture exudate is, of course, no reason for negating tubercle, as they are only recovered in a small percentage from such exudations. The rapid onset of the tuberculous case is unusual, whilst in both cases there were skin rashes of a petechial character. I felt quite certain that I had to deal with a case of genuine cerebro-spinal meningitis and it was only at the post-mortem examination that that opinion was reversed. Had there not been the presence of an epidemic we would probably have looked upon the case as one of acute tuberculous meningitis. The withdrawal of quantities of cerebro-spinal fluid by lumbar puncture was followed in every instance by marked amelioration of the symptoms and even rapid improvement for a time, due evidently to the relief of pressure, but so soon as the fluid re-accumulated the symptoms seemed to arise with even greater severity than before. As a therapeutic measure, however, I would strongly urge repeated lumbar puncture and injections of lysol or some of the silver salts, or even permanent drainage of the spinal canal. No other treatment with which I am acquainted seemed to have the slightest curative effect on the disease, although the symptoms, of course, were immensely relieved. I have had no experience of the special meningococcus serum, but it is well worthy of trial. In fact, everything possible ought to be tried in such a malignant and fatal disease.

For the careful and accurate observations on these cases I am indebted to my colleagues, Dr. Arthur Hendry and Dr. R. G. Willis, resident medical officers in the hospital.
Liverpool.

A SERIES OF CASES OF PUERPERAL SEPTICÆMIA;

WITH COMMENTS.

By A. KNYVETT GORDON, M.B. CANTAB.,

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DURING the year 1906 there have been discharged from Monsall Hospital 49 completed cases of puerperal fever and it has occurred to me that some particulars of their condition may be interesting to others besides myself if only for the reason that clinical observations of this class of disease have not hitherto been reported with any degree of frequency in this country. Moreover, as the cases have all been treated by the same medical and nursing staff it is perhaps rather more possible than usual to compare them with each other.

I would call attention, in the first place, to the annexed table, in which the details of each case are briefly set forth. It is not pretended that this is in any sense complete, but it is, I think, useful inasmuch as it shows the type of case that is admitted to the isolation hospital of a large city. These details I propose to analyse and to comment upon briefly.

The results.—There is a gross mortality of 12 cases, or 24 per cent. Of these, four were obviously moribund on admission, and, in fact, died within a few hours of their arrival. It is, I think, greatly to be regretted that isolation hospitals are treated so badly in this respect by the general

practitioner. When it must be obvious that the patient has but a few hours to live it can serve no good purpose, as far as his illness is concerned, to have him removed to hospital—usually it accelerates his end. It is often convenient, no doubt, that a death shall not occur in the particular house, or in the practice of the certifying medical man, but, on the other hand, the procedure adopted at the hospital, be it medical or surgical, is often debited with the patient's death, and the progress of science and the good that the hospital can do in other cases are thereby considerably hindered. In this series if the moribund cases could be deducted the death-rate would be reduced to 16 per cent. Of the remaining eight, one died from an attack of pneumonia which began six weeks after admission, when the patient was apparently convalescent, and had no apparent connexion with the original illness.

Another point is that in only two instances was the patient not obviously in danger of her life when admitted. This series does not, therefore, include those mild cases of septic intoxication, which yield to gentle local treatment, or, it may be, to purgatives alone, which may occur in private practice or in the clinique of the maternity hospitals. If these are included, the statistical fatality of any series may be very low indeed. Such cases have, as a matter of fact, never been sent to Monsall Hospital at all.

That the cases have, as a rule, not been admitted until the treatment adopted has been obviously useless, is shown by the fact that the average interval elapsing between the calling in of the medical man by the midwife, or (in the cases where he has been in attendance all along) from the onset of the signs of sepsis to the notification of the case was a period of four and a half days. In other words, what must be admitted to be the most important period in the disease from the therapeutical point of view has been spent in the application of ineffective—often futile—measures. As a matter of fact, this series, as far as it goes, is not a bad record of the uselessness of such measures as vaginal and intra-uterine douches with a little quinine internally in cases of severe septic infection.

With regard to those discharged as cured it is necessary to observe that the patients have not been sent home until they have had sufficient rest in hospital to enable them to perform ordinary house work without pelvic pain or inconvenience, and have resumed their normal weight. In the great majority the uterine had recovered its mobility. As will be seen from the record their stay in hospital has on this account been frequently prolonged, the average detention of all cases being 40 days, and of those that recovered 60 days. The only exception to this is case No. 29, where the patient was discharged to the workhouse infirmary in a somewhat weak state owing to the pressure on our accommodation that existed at the time. As far as possible lacerations of the vagina and perineum and adhesions in the pelvis have been treated before the patient left hospital.

The cause of the illness.—In every case a detailed account of the circumstances that preceded the removal of the patient has been furnished me by the courtesy of the medical officer of health (Dr. J. Niven) and the medical officer to the midwives supervising committee (Dr. M. Merry Smith), to whom I am much indebted. It is possible, therefore, to divide the cases into those attended at the confinement by a medical man and those where a midwife only was present. There were some cases also where the woman was confined in solitude or attended by a neighbour only. The "practitioners'" cases are 28 in number, the "midwives'" are 16. It does not, however, follow that the medical man was responsible for the infection of the patient in all cases where he was present at the confinement, for in many a midwife or trained nurse was there also and may well have made internal examinations, and it is, moreover, probable in some instances that infection took place during the puerperium from contact with dirty clothes or the unskilful administration of vaginal injections. Evidence of the responsibility of the medical attendant is seen more clearly when an inquiry is made into the degree of interference that took place at the confinement. In 11 of these 28 cases there is a history of the use of forceps combined with a variety of laceration of the parts (seen on admission) that could not have resulted from natural causes only. There were other instances also in which the hand had been introduced into the uterus for the removal of the placenta in which infection by this means is at least probable, but it is not possible to put this statistically.

The length of the incubation period gives some clue to the

PARTICULARS OF 49 CASES OF PUERPERAL FEVER DISCHARGED FROM MONSALL HOSPITAL, MANCHESTER, DURING 1906—(Continued).

No.	Day of onset of fever.	Day of disease on admission.	Days elapsing between calling in of the medical man and admission to hospital.	Practitioner or midwife.	Forceps.	Courting of uterus.	Other operations.	Serum.	Bacteriology of uterus.	Bacteriology of blood.	Complication.	Days in hospital.	Result.
35	Fourth.	Fifth.	—	P.	Yes.	Yes.	Laparotomy.	Yes.	Streptococci.	Sterile.	Large pyosalpinx.	75	Recovered.
36	Seventh.	Fifth.	2	Neither.	No.	Yes.	"	Yes.	—	"	Pelvic suppuration.	45	"
37	Second.	Fourth.	—	P.	Yes.	No.	"	No.	Streptococci.	"	—	4	Died (12 hours).
38	Fourth.	Second.	1	Neither.	No.	Yes.	—	No.	—	"	—	19	Recovered.
39	Sixth.	Third.	—	P.	Yes.	Yes.	—	No.	Streptococci.	"	—	40	"
40	Seventh.	Second.	—	P.	Yes.	Yes.	—	No.	"	"	—	32	"
41	Third.	Second.	1	M.	No.	Yes.	—	No.	"	"	—	30	"
42	Third.	Sixth.	5	M.	No.	Yes.	—	No.	"	"	—	44	"
43	Fifth.	Fifth.	—	P.	No.	Yes.	—	No.	—	"	—	49	"
44	Third.	Thirteenth.	—	P.	Yes.	Yes.	Pelvic incision.	No.	Streptococci; bacillus coli communis.	"	—	54	"
45	Fourth.	Fourth.	—	P.	No.	Yes.	—	Yes.	—	"	—	32	"
46	Fourth.	Fourth.	—	P.	No.	Yes.	—	Yes.	Streptococci; bacillus coli communis.	"	—	32	"
47	Sixth.	Third.	7	M.	No.	Yes.	—	No.	A bacillus not identified.	"	—	40	"
48	Eighth.	Fifth.	—	P.	Yes.	Yes.	—	No.	Streptococci.	"	—	22	"
49	Second.	Third.	4	M.	No.	No.	Laparotomy.	Yes.	"	Not examined.	General peritonitis on admission.	1	Died (24 hours).

instances pelvic abscesses occurring in convalescence were opened extra-peritoneally through the vagina; all recovered. In another case the general peritoneal cavity was opened through the vagina; diffuse suppuration in the parametrium, together with a large tubo-ovarian abscess, was found. This case did not recover.

Serum treatment.—Antistreptococcal serum was given on admission to 20 patients, the dose ranging from 50 cubic centimetres in three cases to 200 cubic centimetres in three; the usual amount injected was 100 cubic centimetres. In these 20 cases streptococci were found in the uterus in 16 instances and in the blood also in five. The sera employed had been prepared in the Wellcome Research Laboratory at first from five cultures of streptococci obtained from material removed from the uterus and blood of cases treated at Monsall Hospital. Latterly more strains from other puerperal sources had been, I understand, added. So far I have been unable to discover any difference in the action of these two brands.

The whole subject of the use of bacteriocidal sera in puerperal fever is beset with difficulties, which have not been diminished by the publication of cases in which active local treatment has been adopted together with the administration of small quantities of a (possibly stale) serum and the result attributed to the serum only. My own practice is to give a polyvalent serum in all cases in which examination fails to discover any gross lesion and to any in which streptococci are subsequently found in the blood. I have never seen any ill effects from the sera except the production of transient rashes and, in some instances, of joint pains also. I feel, however, that the administration of a single dose of 10 or 20 cubic centimetres is almost useless and that it is better to give any quantity in one injection than in repeated small doses. The prevailing factor is one of time. The sooner it is given, the better.

It is not, of course, possible to come to any definite conclusions statistically from such a small series as 49 cases of puerperal sepsis. For most of the incidental remarks I have made I have drawn upon my previous experience also. As far as they go, however, the 1906 cases have strengthened my belief that in such a terrible disease as puerperal fever we must act as we should in any other variety of wound

fever and try active local disinfection promptly, and that collections of pus, whether they be inside or outside the peritoneal cavity, must be treated by incision and drainage. As adjuncts to these surgical methods that have received due recognition in every other region of the body, such measures as the use of bacteriocidal sera and some drugs are occasionally useful, but they can never cure by themselves. As long as puerperal fever continues to be treated by vaginal douches and bottles of medicine only it will, I believe, always have a high mortality. It is, of course, better still to prevent its occurrence altogether.

Manchester.

CHLORETONE AND ITS USES, ESPECIALLY IN CHOREA.¹

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It has been said by an eminent French physician that what impresses the patient's friends is a correct prognosis, what impresses other medical men is an accurate diagnosis, but what impresses the physician himself is the occurrence of any decided benefit from the employment of a particular remedy. It is because we are naturally rather impressed with what is new than with what is already familiar that this statement may be regarded as applying to new remedies or new applications of old ones, and it is of such an impression, while still fresh, that I propose to speak to-day.

Chloretone, which is trichloro-tertiary-butyl-alcohol, is obtained by the interaction of chloroform, acetone, and an alkali. It is a white crystalline compound having a camphor-like odour and taste, and may be melted and sublimed at the body temperature. It is only slightly soluble in water but easily so in glycerine, alcohol, petroleum, or oil. The dose is from five to 25 grains in cachet or solution in one of the

¹ This paper goes over the ground of a recent lecture delivered at the Middlesex Hospital.

PARTICULARS OF 49 CASES OF PUERPERAL FEVER DISCHARGED FROM MONBALL HOSPITAL, MANCHESTER, DURING 1906.

No.	Day of onset of fever.	Day of disease on admission.	Days elapsing between calling in of the medical man and admission to hospital.	Practitioner or midwife.	Forceps.	Curetting of uterus.	Other operations.	Serum.	Bacteriology of uterus.	Bacteriology of blood.	Complication.	Days in hospital.	Result.
1	Second.	Third.	—	P.	No.	Yes.	Incision of pelvic abscesses.	Yes.	Bacillus coli communis; streptococci.	Not examined.	—	213	Recovered.
2	Third.	Sixth.	—	P.	No.	Yes.	Incision of pelvic abscess.	Yes.	Streptococci.	"	—	136	"
3	Third.	Fourth.	—	P.	No.	No.	Laparotomy.	No.	Bacillus coli communis;	"	Severe injuries and general peritonitis from instrumental distention.	95	"
4	Fourth.	Third.	Sameday.	M.	No.	Yes.	—	Yes.	"	"	—	38	"
5	First.	Second.	—	P.	No.	Yes.	—	Yes.	No growth.	"	—	35	"
6	Fourth.	Third.	2	M.	—	Yes.	—	No.	"	"	—	25	"
7	Fifth.	Fifth.	2	M.	—	No.	Laparotomy.	No.	Gonococcus.	"	General peritonitis on admission.	81	"
8	Fifth.	Fifth.	4	M.	—	Yes.	—	No.	No growth	"	—	39	"
9	Sixth.	Fourth.	2	M.	—	Yes.	—	No.	Staphylococci.	"	—	39	"
10	Fourth.	Second.	—	P.	No.	Yes.	Laparotomy on admission.	Yes.	Streptococci, a bacillus of the coli group.	"	Intestinal obstruction on admission.	61	"
11	Seventh.	Third.	4	M.	—	Yes.	—	Yes.	No growth.	"	—	30	"
12	Sixth.	Third.	2	M.	—	Yes.	Vaginal hysterectomy.	No.	"	"	—	5	Died.
13	Second.	Fourth.	—	P.	Yes.	Yes.	—	Yes.	Streptococci.	Streptococci.	—	48	Recovered.
14	Second.	Fourth.	—	P.	No.	No.	—	Yes.	"	Not examined.	Extensive laceration from manual extraction of placenta.	47	"
15	Seventh.	Sixth.	—	P.	No.	No.	Laparotomy.	No.	Streptococci, bacillus coli communis.	Streptococci.	General peritonitis on admission.	1	Died (24 hours).
16	Fourth.	Third.	3	M.	—	Yes.	—	No.	No growth.	Sterile.	—	2	Died (48 hours).
17	Third.	Fourth.	—	P.	No.	Yes.	—	Yes.	Streptococci.	Streptococci.	Late pneumonia.	58	Died.
18	Second.	Fourth.	3	Neither.	—	No.	—	No.	Gonococci and streptococci.	Not examined.	General peritonitis on admission.	2	Died (12 hours).
19	Fifth.	Seventh.	—	P.	No.	Yes.	—	Yes.	Streptococci.	Streptococci.	—	50	Recovered.
20	Fourth.	Ninth.	—	P.	No.	No.	Laparotomy.	No.	—	Not examined.	General peritonitis on admission.	68	"
21	Third.	Third.	2	M.	No.	Yes.	Vaginal hysterectomy.	Yes.	Streptococci.	"	—	11	Died.
22	Eleventh.	Eighth.	8	M.	No.	Yes.	Laparotomy.	No.	—	"	General peritonitis on admission.	79	Recovered.
23	Third.	Fifth.	—	P.	Yes.	Yes.	Laparotomy.	Yes.	Streptococci.	Streptococci.	Pyosalpinx.	60	"
24	Fourth.	Third.	—	P.	No.	Yes.	—	Yes.	"	Not examined.	—	34	"
25	Eighth.	Third.	11	Neither.	No.	Yes.	—	No.	—	"	—	24	"
26	Second.	Third.	2	M.	No.	Yes.	—	No.	Streptococci.	"	—	28	"
27	Second.	Second.	—	P.	Yes.	Yes.	Laparotomy.	Yes.	"	Streptococci.	General peritonitis on admission.	76	Recovered.
28	Second.	Tenth.	—	P.	Yes.	Yes.	Vaginal section.	No.	—	Not examined.	Pelvic abscess.	1	Died (24 hours).
29	Fifth.	Sixth.	—	P.	Yes.	Yes.	—	Yes.	Bacillus coli communis	Sterile.	Pyæmia.	97	Recovered.
30	Fifth.	Second.	4	M.	No.	Yes.	—	No.	Streptococci	"	General pelvic sup-puration.	23	"
31	Third.	Seventh.	—	P.	No.	Yes.	Abdominal hysterectomy.	No.	"	"	—	6	Died.
32	Fifth.	Second.	2	Neither.	No.	Yes.	—	No.	"	Streptococci.	General pelvic sup-puration.	18	Recovered.
33	First.	Sixth.	—	P.	No.	Yes.	Laparotomy.	No.	"	"	—	3	Died.
34	Fourth.	Third.	—	P.	No.	Yes.	—	No.	"	"	—	3	"

years, but no other illness. There was no history of acute rheumatism or of syphilis in the family, the other members of which were quite healthy. The patient was very cyanosed and clubbing of the fingers, the toes, and the nose was well marked. A systolic murmur was heard over the præcordium, probably due to defect of the interventricular septum; it was best heard to the left of the sternum and in the third and fourth intercostal spaces, but was also audible at the apex beat of the heart and in the second intercostal space; it was not conducted towards the left clavicle. There were no signs of any of those diseases of the lungs which have hitherto been found associated with clubbing of the fingers and osteoarthropathy; the tuberculo-opsonic indices observed on five separate occasions by Mr. D. Embleton were 0.98, 0.78, 0.96, 0.96, and 0.82. The blood examination showed 8,320,000 red corpuscles and 9300 white corpuscles per cubic millimetre; the percentage of hæmoglobin was 150 and the colour index was 0.94; the polymorphonuclear cells numbered 60.2 per cent., the small lymphocytes 19.9 per cent., the large lymphocytes 12 per cent., the hyaline cells 6.9 per cent., and the eosinophile cells 1 per cent. Besides the clubbing above referred to there was obvious swelling of both legs due to thickening of the lower ends of the tibiae and fibulae, and there was slight swelling of the bones of the forearms, of the wrists, and of the shafts of the metacarpal and phalangeal bones.

Radioscopic examination.—Compared with the corresponding bones of the patient's sister, who was quite healthy and of almost the same height and build, there was very considerable enlargement of the tibiae and fibulae of both legs, especially of the lower two-thirds, more marked in the right limb; irregular bony deposits were present at the attachment of the interosseous ligaments to the adjacent tibiae and fibulae. The upper halves of the shafts of the femora showed increase of the mass of bone, but in a more marked degree, especially in the right leg; the head, the neck, and the lower halves of the femora appeared to be normal. The first and second phalanges of the fingers and thumbs, the metacarpal bones, the first and second phalanges of the toes, the metatarsal bones, and the bones of both forearms showed very slight thickening; there was no bony increase of the terminal phalanges of the fingers or toes.

This case is of special interest in several directions. In the first place it confirms the belief that Pierre Marie's sign-complex is not a feature of particular forms of lung disease only; such as bronchiectasis, tuberculosis, empyema, neoplasm; &c., for the patient was quite free from any signs or symptoms of pulmonary disease. The changes in the bones and the joint pains constitute "osteo-arthropathy" which, combined with clubbing, is known under the title given by Pierre Marie² as pulmonary hypertrophic osteo-arthropathy; the latter observer and Bamberger³ considered that the genesis of this sign-complex depended on the effects of toxins formed in the lungs; we consider that everything points to the absence of any toxic focus in the lungs of this case; tuberculosis of the lungs, the most common infection in congenital heart disease, may yield no physical signs and yet be present; that this is not so in this case is shown by the existence of normal opsonic indices above quoted—a condition of affairs which could not occur if a tuberculo-toxin were circulating in the system so widely as to produce the above diffuse osteo-arthropathy. A mechanico-toxic cause of clubbing and of osteo-arthropathy has been advanced recently by Bécclère⁴ and by Groedel⁵ and confirmed by an observation by Berent⁶; clubbing of the fingers has long been known to occur in one hand⁷ in cases in which an aneurysm has caused interference with the circulation of the limb and Groedel and Berent have shown that bone changes may also occur in such cases; the toxic substance or substances must in these cases be generated locally and be derivations of tissue metabolism. Their retention, owing to the obstructed circulation, is considered to be responsible for the clubbing and for the bone and joint changes. We consider that this case gives support to the view of Bécclère and of Groedel because the greatest bone change is noticed in the

lower extremities, gravity tending to increase the stagnation of the blood in these parts; that mechanical obstruction is in the first place responsible for the change is also shown by the fact that the patient has suffered for as long a period as ten years frequently and immediately from pain in the lower limbs on standing or walking.

This case is finally a unique one, for, so far as we are able to ascertain, there are no other reports in the literature of cases of congenital heart disease being associated with Marie's sign-complex in the absence of lung disease; Bamberger's eighth case was one of congenital heart disease but was complicated by the presence of tuberculosis, and Thorburn's⁸ case (footnote to his paper), though occurring in a boy, is not stated to be due to congenital as opposed to acquired heart disease; the latter association has been established by Bamberger. The distribution of the changes, mainly in the lower extremities of our case, is also very unusual and, as already stated, in the absence of any focus of disease in the lung supports the view that clubbing and osteo-arthropathy are due to the effects of tissue toxins normally generated at the periphery but prevented from being rapidly removed owing to the impairment of the circulation, in our case dependent upon congenital heart disease, in others upon the existence of lung disease, of acquired heart disease, and even, it is stated, of impaired action of the diaphragm in cases of hypertrophic cirrhosis of the liver.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

TWIN OVUM IN A TUBAL PREGNANCY.

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THE rarity of the above condition lends interest to the accompanying illustration from a case recently, under my care.

The patient, aged 39 years, married in January, 1890, had a miscarriage at about three months in May of the same year, had a uterine polypus removed 12 months later, and in February, 1892, was delivered of an eight months' child.



Twin ovum in tubal pregnancy.

In 1896 she had a "false conception" (the description seems to point to hydatid mole), followed by an attack of peritonitis

² Pierre Marie, *Revue de Médecine*, 1890, tome x., p. 1.
³ Bamberger, *Zeitschrift für Klinische Medizin*, 1891, Band xviii., S. 193.
⁴ Bécclère: *Semaine Médicale*, 1901, p. 94. *Bulletins et Mémoires de la Société Médicale des Hôpitaux*, 1901, vol. xviii., p. 233. *Gazette des Hôpitaux*, 1904, p. 754.
⁵ Groedel: *Münchener Medizinische Wochenschrift*, 1906, S. 264.
⁶ Berent: *Berliner Klinische Wochenschrift*, 1903, S. 75.
⁷ Sir Thomas Smith: *Transactions of the Pathological Society of London*, 1871, vol. xxiii., p. 74. Canton: *Ibid.*, 1885, vol. xvii., p. 428.
⁸ Ogle: *Ibid.*, 1882, vol. x., p. 103.

⁸ Thorburn: *Brit. Med. Jour.*, 1893, vol. 1, p. 1155.

above-mentioned solvents. The first account of the drug in English medical literature is in THE LANCET of Jan. 13th, 1900, and so far as I am aware it was first employed by Messrs. Parke, Davis, and Co. in 1899 as a preservative for their solutions of adrenalin.

On account of its local anæsthetic effect I was prompted to employ this drug in painful and irritable conditions of the stomach, such as gastritis, cancer, gastrodynia, ulcer, and especially in those cases of pain, vomiting, and hæmatemesis so frequently associated with chlorosis and scarcely yet completely removed from the category of gastric ulcer, with which they are by no means identical. In doses of five grains or more in petroleum emulsion it has a remarkably soothing effect both on pain and vomiting and exercises a deterring influence on fermentation, resembling in this carboic acid. It was while using chloretone for this purpose that its hypnotic effect became apparent, and I have since employed it satisfactorily in ten-grain doses simply to procure sleep, though the state of quietude induced by the smaller doses is itself a very great alleviation of painful and protracted illness, such as the gastric conditions to which I have referred.

The local anæsthetic effects have been found of value in vaginal pruritus as exercised by a 0.4 per cent. solution in warm water, or by five-grain suppositories in hæmorrhoids. The sedative effect on the brain, similar to that of the bromides but more rapidly induced, associated as it is with a similar effect on the stomach, led to its early employment for sea-sickness, and it is in connexion with this distressing malady that its reputation has chiefly been established. Five grains in powder taken a quarter of an hour before embarking will generally insure complete immunity from sickness during the Channel passage even in rough weather, and the drug does not appear to lose its efficacy by repetition, as is the case with some others. A young French lady, who was invariably ill during the crossing to Dieppe, since being fortified with chloretone has only once suffered and that in a way which suggests a useful hint in prescribing. Having performed the outward journey "tute, cito et jucunde" under the influence of one of the five-grain powders of which she was provided with four, the other three were carefully deposited in a purse against her return after the summer holiday. Then accompanied by a friend, to whom she promised immunity from the discomforts of the sea on the strength of this new remedy, she confidently embarked and proceeded to share the remaining doses. One paper after another was opened but all were empty. In the hot weather the chloretone had evaporated and vanished, leaving nothing behind but disappointment and the prospect of a miserable voyage, which was amply verified in both cases. As negative evidence this was distinctive testimony to the value of the drug and has been subsequently remedied by inclosing it in impervious wrappers such as paraffin paper.

When taken at intervals in similar doses longer voyages have been undertaken without discomfort—such, for instance, as that across the Atlantic. The drug was taken about 20 minutes before meals two or threetimes a day during rough weather and the journey was completed without a qualm. A more general knowledge of this remedy will certainly save a large amount of discomfort and in those who suffer continuously will enable journeys to be undertaken which were formerly dangerous or actually impossible.

I have dwelt upon these effects of chloretone as they have led up to its employment in another class of cases for which we have hitherto possessed no efficient remedy. I refer to chorea. During the past 12 months the opportunity has occurred of exhibiting the drug in some 14 cases and the result has been so striking and uniform that though the number is small it is worth making known that those who have wider opportunities may further test its reliability. In these cases, both boys and girls between the ages of seven and 12 years, five grains of chloretone in half an ounce of petroleum emulsion were given three times a day for two and sometimes three days; there was in all of them such a marked diminution of the choreic movements that the dose was then halved and sometimes given only twice and even once a day according to the severity and progress of the case. The number of days in which the drug was continued varied from five to ten, by which time it was omitted and either steel wine with arsenic or cod-liver oil was substituted to meet the anæmia and feebleness which usually accompanied the disease. Under this treatment the duration of choreic movements was limited to nine days and the stay in hospital to three weeks on an average. This is a great advance in the treatment of chorea, which even with the advantage of hospital

régime usually extended to double and treble that time. These advantages consist in rest in bed with isolation and liberal dietary. When convalescing the patients were encouraged to knit or crochet or to use the hands in some such manner so as to practise purposive movements and also as a test of steadiness.

Many patients on admission were unable to feed themselves, experienced considerable difficulty in speech, and in some cases needed padding in their cots to prevent bruising in their uncontrolled movements. It was found that those cases which came under treatment early benefited most. Of the 14 which took chloretone, two were removed from the hospital before they were quite recovered on account of contracting röteln, and two others resisted the treatment for a longer time—one, a girl, aged ten years, who had suffered from chorea for three years with short remissions, and another girl, aged seven years, who, after four months' chorea before admission, appeared rather to be cured by the relief of constipation, which had been a marked feature, this being effected in 21 days.

With any comparatively new drug exerting marked beneficial effects the question always arises as to drawbacks, and in the present instance there are some, though not of serious account. Two of the cases exhibited exfoliation of the skin on the hands and heels which gave rise to a suspicion of scarlet fever—one after ten days in hospital without fever or rash and the other shortly after removal on account of röteln, of which there had been an outbreak in the hospital. The other 12 cases did not show this and the retention of one such case in the hospital and subsequent removal to the convalescent home did not lead to communication of scarlet fever to anyone else, so this exfoliation of the skin may be regarded as an occasional effect of the drug.

In two of the earlier cases treated, possibly owing to the physiological effect of chloretone being carried rather too far, there was marked somnolence, the child lying in any attitude in which he was placed and rousing only to take food. This passed off in a few hours on discontinuing the drug. The only other objection taken account of was the cost (4s. an ounce is somewhat expensive in hospital work), but considering the small quantity used and the comparative infrequency of the cases it is not serious and with increased demand it will no doubt be reduced.

As regards the permanency of the cure further experience is required; one of the cases cited was readmitted in about three months with a relapse, and on the other hand another was successfully treated which had relapsed after treatment by arsenic. Like the treatment of rheumatism by salicylates the effects of the specific drug requires to be followed by a tonic régime in most cases since the little patients are usually anæmic and feeble in addition to suffering from the spasmodic movements. Where endocarditis coexists salicylates can be combined with the chloretone or may be applied to the skin instead, but for the chorea itself chloretone appears to be as much a specific as the salicylates have come to be regarded in rheumatism.

Wimpole-street, W.

"PULMONARY HYPERTROPHIC OSTEO-ARTHROPATHY" OCCURRING IN A CASE OF CONGENITAL HEART DISEASE (!).¹

BY H. BATTY SHAW, M.D. LOND., F.R.C.P. LOND.,
ASSISTANT PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL AND THE
HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST,
BROMPTON,

AND
R. HIGHAM COOPER, L.S.A.,
RADIOGRAPHER TO UNIVERSITY COLLEGE HOSPITAL AND THE
STELINA HOSPITAL FOR SICK CHILDREN.

THE patient, a young unmarried woman, aged 21 years, was recently admitted to University College Hospital under the care of Sir Thomas Barlow, to whom we are indebted for the care of the notes of the case. The patient had permission to publish the notes of the case. The patient had suffered from palpitation, breathlessness, and blueness since birth. During the last ten years she had suffered from pains in the limbs, both in the ankles and wrists and in the shafts of the long bones of the legs, more particularly after standing and walking. She had scarlet fever at the age of ten

¹ Report of a case shown at a meeting of the Clinical Society of London held on March 22nd, 1907.

of five successive weeks. Fig. 2 shows the result of this treatment. The infiltration of the palmar fascia was now limited to one band. It was previously much more diffuse. Fig. 3 shows the result after subcutaneous division of this band by one incision.

London.

A Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Prooemium.

ST. GEORGE'S HOSPITAL.

A CASE OF SKIN ERUPTION DUE TO CHLORETONE.

(Under the care of Dr. ROLLESTON.)

FOR the notes of the case we are indebted to Dr. Ivor Back, house physician to the hospital.

A girl, aged 15 years, was admitted to St. George's Hospital, under the care of Dr. Rolleston, on Feb. 19th, 1907, for choreic movements of sudden onset. She was at once put on five-grain doses of chloretone three times a day, in accordance with the plan of treatment carried out by Dr. W. E. Wynter. At first its beneficial effects were most remarkable and in four days all movements had gone (Feb. 23rd). This was followed by a slight relapse; the drug seemed to lose its effect on the patient. Early in the morning of March 2nd a rash was first noticed. Up to this time the patient had taken exactly two and a half drachms (150 grains) of chloretone. When first seen the rash was distributed over the front and back of the hand and forearm, and extended upwards as far as the elbow. It consisted of a number of flat-topped papules (rather like a lichen ruber planus). They were of a bright mulberry colour, varied in size from that of a pin's head to that of a pea, and did not show any tendency to run together. They faded on pressure but quickly returned. The rash itched. The chloretone was at once omitted. On March 4th the eruption appeared on both ankles and in the sacral fold. On the 5th the eruption completely changed in character, consisting of a number of rings which were white in the centre and pink at the periphery. Their margins tended to coalesce, and it had somewhat the appearance of subsiding urticaria. The appearance of the eruption was at no time comparable to that of a rheumatic rash. On the 6th the eruption had practically disappeared. Up to the time of writing (March 28th) the patient has taken another 150 grains of chloretone, but there has been no further eruption.

Remarks.—Chloretone, or trichloroethyl-ethyl-alcohol, was recommended verbally to us by Dr. Wynter as a successful drug in the treatment of chorea, and from our experience, since his recommendation, we can confirm his good opinion. The rash resembled in a general way the eruption due to chloralamide described by Dr. P. H. Pye-Smith in Vol. XXIII. of the Transactions of the Olthical Society of London, but did not show any subsequent desquamation as in his case. Dr. Wynter has told us that desquamation may occur in patients taking chloretone without any preceding rash, and we have observed this in a patient taking chloretone for reasons other than chorea.

UNIVERSITY OF OXFORD.—In a convocation held on March 20th the degree of D.C.L. by diploma was conferred upon the Right Hon. George Nathaniel, Lord Curzon of Kedleston, M.A., Hon. D.C.L., Chancellor-elect of the University.—John Freeman, D.M., University College, has been elected to a Radcliffe Travelling Fellowship.

CORNELIA HOSPITAL, POOLE.—At the annual meeting of the subscribers of the Cornelia Hospital, which has been recently held, it was stated that there was a deficit in the accounts of £262, which Lady Wimborne has generously offered to pay off. To the funds of this institution during the past few years Lady Wimborne has contributed several thousand pounds.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

The Operative Treatment of Hepatic Ascites.

A MEETING of this society was held on March 25th, Sir EDGECOMBE VENNING, a Vice-President, being in the chair.

Mr. LAWRENCE JONES read a paper on the Operative Treatment of the Ascites of Hepatic Cirrhosis. There was, he said, still much doubt as to the manner in which cirrhosis of the liver brought about ascites, and at present it seemed best to allow both portal obstruction and toxæmia as factors. Recent experiments of Herrick seemed to show that the portal obstruction was not due to pressure on the portal radicles by the new fibrous tissue but to the increased communications which formed in this disease between the hepatic artery and the portal vein, and this would account for the ascites which sometimes arose early in the course of cirrhosis. Ligature of the portal vein in animals usually failed to produce ascites, but this fact might be used against the toxæmic as well as against the obstructive origin of ascites, for the symptoms caused by ligature were those of toxæmia. On the other hand, thrombosis of the portal vein was frequently accompanied by ascites. Ascites was usually a terminal event in cirrhosis, but this was not always the case. The ideal patient for operative treatment was one who was still fairly young, with no suggestion of any other cause (such as cardiac failure) for the ascites, whose liver was in the hypertrophic stage, whose symptoms were more those of portal obstruction than of toxæmia, and who had recovered from one removal of a fluid—showing it to be of mechanical rather than of inflammatory origin. All operations aimed at the formation of fresh porto-caval communications which were usually effected by suture of the omentum to the abdominal wall. The operation might be intraperitoneal, as originally devised, or extraperitoneal, as in the operation of Schiassi, Bunge, and others. Many additions, such as hepatoptomy, splenectomy, and the formation of intestinal adhesions, had been made to the original operation or performed when simple suture of the omentum had failed or had been impracticable. There seemed no doubt as to the value in certain cases of the operation. It appeared to relieve the patient from ascites and prolonged life in comparative comfort, perhaps for some years. No improving effect on the liver itself was claimed, although sometimes the operation seemed to check the cirrhotic process. The results obtained up to the present were fatal in about one-third of the cases, marked improvement took place in one-third, and little or no benefit in the remainder. The mortality usually given was too high, for many cases were included which died two or three weeks after the operation, and this should be ascribed more to a bad selection of cases or delay until too late than to the operation itself. The direct death-rate from the operation should not be more than 10 per cent.

Mr. W. G. SPENCER dissented from some of the opinions expressed. He thought that the subject should be considered apart from the liver, simply as affecting cases of fluid in the peritoneum or as if the case were one of chronic peritonitis. Each case must, however, be dealt with on its own merits. He referred to several cases in which various other abdominal conditions had been revealed at the operation apart from hepatic disease. One case previously recorded had revealed chronic peritonitis secondary to ovarian disease. Another patient went on with her drinking habits but had had no return of the ascites. As regards the precise method of operation, the German method with a six-inch incision and complex procedure was quite unnecessary. The mortality after the simpler operation which he had usually done was very small. It was very desirable to find out the underlying cause and the operation itself was often a means of revealing this and of effecting a cure.

Dr. F. DE HAVILLAND HALL also emphasised the importance of thorough medical investigation before undertaking operation. It was particularly necessary to exclude syphilis, and reference was made to cases of this kind recorded by the late Dr. J. S. Bristowe. The injection of adrenalin into the peritoneal cavity was often efficacious. From three to four drachms of adrenalin solution injected into the peritoneal cavity after tapping was the method which Dr. de

lasting about five months. She suffered frequently from pelvic pain and occasional leucorrhœa till the present illness. Her last menstrual periods were July 12th, July 22nd, and August 12th of last year, since when she had intermittent brownish discharge and dull, aching pelvic pain. She suspected that she was pregnant. On Sept. 27th, about 8 A.M., she was suddenly seized with severe pain in the left pelvis and hypogastrium and sent for me. Examination of the breasts bore out her suspicion of pregnancy and per vaginam the true nature of the condition was diagnosed by the feeling of an hæmatocele filling the left pelvis. After rallying from this attack she, about 1 P.M., showed signs of collapse from internal hæmorrhage and consented to immediate operation. On opening the abdomen a placenta and two foetuses were found separately among a huge mass of blood clot which was rapidly removed and the ruptured tube brought up to the wound, its ends tied in one grasp of the ligature, then cut away and the stump returned to the pelvis. The peritoneal cavity was flushed out with hot saline solution, at least a quart being left in when the wound was closed. The patient was back in bed again within 20 minutes of the commencement of the anaesthetic and made an uninterrupted recovery. She remains, six months after the operation, in excellent health. In our anxiety for the welfare of the patient we unfortunately allowed the placenta to be thrown away in the process of tidying up, thus leaving the specimen incomplete but as it is it may be considered worthy of reproduction. One foetus may be seen to be still enveloped in a separate amniotic sac.

I am indebted to Mr. E. Allan for his assistance at the operation and to Mr. F. E. Daniel for photographing my gelatin preparation of the specimen.

Barrow-in-Furness.

A CASE OF SUPPURATING HYDATID OF THE GALL-BLADDER; OPERATION; RECOVERY.

BY ARTHUR G. L. READE,

SENIOR HOUSE SURGEON TO THE RADCLIFFE INFIRMARY, OXFORD.

A MAN, aged 31 years, a labourer, was admitted to the Radcliffe Infirmary and County Hospital, Oxford, under the care of Dr. W. T. Brooks, on Sept. 24th, 1906, complaining of acute abdominal pain. He had always been a healthy man until August 22nd, when he was in this hospital under the care of Mr. H. P. Symonds suffering from biliary colic. At that time his stools were white and his urine was dark brown; the conjunctivæ were yellow. There was nothing to be made out in the abdomen and, as he refused operation, in a fortnight's time he was discharged, as by that time he had recovered. He remained well until Sept. 22nd, when he was suddenly seized with sharp pain in the stomach and back which doubled him up; he vomited several times and sweated with pain. This pain had been continuous and the vomiting was so persistent that he could retain no food. The bowels were opened on the 23rd, since which date he had begun to get yellow. He had had no sleep for the last two nights on account of the pain; his urine was very dark in colour. He had never been abroad and there was nothing of importance in the family history. His condition on admission was as follows. The patient lay on his back with his knees slightly drawn up, he had an anxious expression, and his respirations were hurried. His face had a yellow tinge and the cheeks were red. His temperature was 103.8° F., his pulse was 120, and his respirations were 28; the conjunctivæ were markedly yellow and the tongue was furred. On examining the abdomen it was noticed that the skin was yellow and movement was very slight. There was marked fulness in the epigastrium. On palpation there was definite resistance in the epigastrium towards the right side and the abdomen was exquisitely tender above the umbilicus. Nothing was to be made out in the lower part of the abdomen. On percussion resonance over the upper part of the abdomen was impaired; there was liver dullness to the fifth rib. The patient had a bad night, only sleeping when under the influence of morphine; on the next morning the temperature fell to 98°, but the pulse remained 120, and a blood count showed marked leucocytosis (19,000). The patient was transferred to Mr. Symonds's care and at 3.30 on that day (the 25th) was operated on. An incision about four inches long was made to the right of the mid-line over the region of the gall-bladder and on

opening the peritoneum a little free fluid escaped. The gall-bladder was found to be distended and on opening it, the rest of the peritoneum having been packed off as far as possible, a considerable quantity of pus escaped mixed with a large number of hydatid cysts. On exploring with the finger another cyst apparently in the liver substance was opened, which also contained pus and daughter cysts. The walls of these two cavities, which had now been made one, were sutured to the abdominal wall and a drain was put in. The rest of the incision was sutured. On the next day the patient was much better and daily continued to improve, though a very large quantity of bile escaped. Three weeks later the patient was again taken to the theatre and a purse-string suture was put round the neck of the cyst, tying in a Paul's tube, which drained the bile by a piece of india-rubber tubing attached to the tube away from the wound. Ten days later this was removed and the edges of the wound were cauterised. Under this treatment the biliary fistula closed about five weeks later, and on Dec. 29th the patient was discharged cured. He had been seen since his discharge and was keeping quite well.

Remarks by Mr. READE.—There are two interesting points in this case: first that the patient had never been abroad, nor was there any clue as to how he contracted hydatid disease; and secondly, that the daughter cysts gave rise to symptoms exactly like biliary colic followed by suppurative cholecystitis, of which nature the case was considered to be until operation. While very common in the liver the literature shows that hydatid disease affecting the gall-bladder is extremely rare. I find notes of eight cases, two of which occurred in this country. Mr. E. T. Burton reports a case under Mr. H. G. Barling's care in the *Birmingham Medical Review* of October, 1897. The patient's symptoms were very similar to those in the case here recorded. The duration of the acute illness was ten days and though he was admitted with a view to operation he was too ill to stand it and died three days after admission. Post mortem in addition to the cyst in the wall of the gall-bladder several daughter cysts were found in the bladder itself. Mr. Frederick Page reports a case in *THE LANCET* of April 9th, 1898, p. 995. This patient suffered from "bilious attacks"—i.e., epigastric pain and vomiting for five years; a tumour was felt over the region of the gall-bladder, which when explored proved to be a single hydatid cyst with no daughter cysts; this was removed and the patient recovered. I am indebted to Dr. Brooks and to Mr. Symonds for permission to publish this case, but my description of Mr. Symonds's operation has not had the great advantage of his corrections.

A CASE OF DUPUYTREN'S CONTRACTION TREATED WITH FIBROLYSIN.

BY W. DUNCAN LAWRIE, M.D. EDIN., F.R.O.S. EDIN.,

HONORARY SURGEON TO THE BIRMINGHAM CRIPPLED CHILDREN'S UNION.

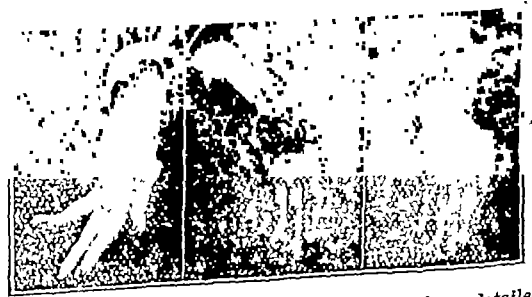
The following case may perhaps claim to be of sufficient interest to be recorded in *THE LANCET*.

The patient, a man, aged 42 years, came under observation in November, 1906. The three illustrations here given speak

FIG. 1.

FIG. 2.

FIG. 3.



for themselves and thus obviate the necessity for a detailed description of the case. Fig. 1 shows the condition at the commencement of treatment. The patient could only come for treatment at the week ends and accordingly the contents of one of Merck's ampullæ containing 2.3 cubic centimetres of fibrolysin were injected on Saturday, Sunday, and Monday

of five successive weeks. Fig. 2 shows the result of this treatment. The infiltration of the palmar fascia was now limited to one hand. It was previously much more diffuse. Fig. 3 shows the result after subcutaneous division of this band by one incision.

Llandudno.

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Havilland Hall commonly adopted. The operative procedure adopted by his colleague Mr. Spencer had a very low mortality and was attended with excellent results.

Dr. F. PARKES WEBER drew attention to the importance of temperature records being carefully made before operation. Many syphilitic cases were attended by an intermitting pyrexia, which disappeared under mercury and iodide of potassium. He also emphasised the value of the part which inflammation played in producing a favourable result.

Mr. A. E. J. BARKER also referred to the fallacy of syphilitic affections of the liver. In regard to the method of operation he emphasised the importance of producing firm and enduring adhesions; these were very difficult to accomplish under modern aseptic methods. Adhesions in these circumstances disappeared, as shown by successive operations on the same patient. On these grounds he advocated the extraperitoneal operation.

Mr. H. J. WARING believed that the best results were obtained when the operation was done as early in the stage of the disease as possible. He also discussed the significance of hemorrhoids as proving the existence of definite portal obstruction. The best surgical measure, in his opinion, was to insert a portion of the great omentum into the sheath of the rectus abdominis muscle.

Dr. J. F. H. BROADBENT believed that it was better to wait until the abdomen had filled the second time. The choice of the case was important. Some cases of cirrhosis appeared to be independent of alcoholism. Very advanced cases, where the liver substance was in great part destroyed, were certainly not amenable to operative treatment.

Dr. F. J. POYNTON referred to a case of multiple inflammation of the serous membranes and asked whether any operation was available for such cases.

Mr. JONES, in reply, did not think that any operation was of use unless portal obstruction was definitely present.

CLINICAL SOCIETY OF LONDON.

Clinical Evening.

A MEETING of this society was held on March 22nd, Mr. H. H. CLUTTON, the President, being in the chair.

THE PRESIDENT exhibited a case of Congenital Hypertrophy or Giant Growth of the Feet in a girl, aged 17 years, who was otherwise quite normally developed. The deformity, which was noticed by the mother at birth, slowly increased up to the age of 14 years. During the last three years the growth had been much more rapid, producing particularly a greater inequality in the length of the two lower extremities. The feet were enormous but were fairly equal in size, the distal parts being rather larger than the proximal. No cause could be assigned. The President proposed to do a Chopart's operation on the shorter leg and a Syme's operation on the longer.

Dr. H. BATTY SHAW and Mr. R. HIGHAM COOPER showed a case of "Pulmonary Hypertrophic Osteo-arthritis" occurring in a Case of Congenital Heart Disease. The paper is published on p. 880.—Dr. A. E. GARROD referred to cases of osteo-arthritis associated with cirrhosis of the liver.—THE PRESIDENT suggested that the clubbing of the fingers represented the same process as osteo arthropathy.—Mr. W. G. SPENCER was not quite satisfied as to the existence of joint lesions in this case.

Dr. F. W. FORBES-ROSS exhibited a case of Operation after Rupture of a Pancreatic Cyst. The patient was a man, aged 71 years, suffering from prolapse of the rectum, who was suddenly seized on Oct. 17th, 1906, with pain in the left hypochondrium, shortly after which a tumour appeared in the same region, presenting a notched border. Abdominal abscess was diagnosed and two and a half quarts of pus were evacuated.

Dr. G. A. SUTHERLAND exhibited a case of Osteogenesis Imperfecta (? Syphilitic) occurring in a male infant, aged eight weeks, a first child. He was born after an easy labour and "the left wrist was seen to be broken and the arm to hang as if dislocated; the thigh and leg bones on the left side were broken." Multiple fractures in the long bones were shown in a skiagram taken seven days later. No fresh fractures were observed to occur. The child seemed to suffer great pain whenever his limbs were touched and cried for hours after he was born. At birth a lump was also noticed on the right side of the head. There was nothing of importance

in the family history. On admission, four weeks ago, great pain and tenderness were present in the extremities, which presented periosteal swelling, especially around the epiphyses. A condition of pseudo-paralysis existed, movement being limited to the fingers and toes. Signs of fracture were manifest in all the long bones of the extremities and in many of the ribs. A swelling was present over the right parietal bone with a large irregular gap in the osseous tissue. There was general peeling of the skin over the trunk and extremities. The pain and tenderness in the limbs passed off, the periosteal swelling subsided, and the infant now moved the limbs freely. Marked deformities had resulted from the fractures which were now apparently united. Mercurial treatment had been carried out.—In discussing this case Dr. LEONARD G. GUTHRIE showed skiagrams exhibiting fractures of both femora and other bones in an infant under his care who died at the age of three months. Extreme tenderness and swelling had been noticed in the fractured limbs a week after birth. At the age of one month the cranial bones were thin and widely separated, and severe ophthalmia and a well-marked syphilitic eruption on the buttocks were present. Under mercurial treatment these symptoms had improved, but the infant died from marasmus. Post-mortem examination showed that all the fractures had united but with much deformity and with no ensheathing callus. This case, like Dr. Sutherland's, was syphilitic, but Dr. Guthrie doubted whether syphilis was the invariable cause of osteogenesis imperfecta. Might not imperfect osseous development be comparable to congenital myopathy? In congenital cases he thought that the fractures were sustained during pressure at birth and not during intra-uterine life. But there were other cases in which fragilitas ossium seemed to be acquired, the fractures not appearing until after a year or two of life. In one such case, a child, aged two and a half years, was found after death to have most of the long bones fractured, and the mother was charged with murdering the child. She was acquitted, however, on the strength of the medical evidence that fragilitas ossium rather than direct violence adequately accounted for the fractures.—Mr. SPENCER suggested that the condition might be due not to disease but to an arrest or delay of development; the skiagrams shown resembled those of a fetus at about the sixth month. If this were so, later improvement might be wrongly attributed to mercurial treatment.—Dr. SUTHERLAND, in reply, said that in his opinion the present case was probably syphilitic; there was periosteal thickening about the epiphyses, the spleen was large, there was ulceration about the anus, and the case had responded to mercury. This case, therefore, should not be placed in the idiopathic but in the syphilitic group of osteogenesis imperfecta.

Mr. A. H. TUBBY showed a case of Facio-hypoglossal Anastomosis for Post-operative Paralysis occurring in a male patient, aged 19 years. An abscess was opened on April 27th, 1905, and when he recovered from the operation he found the left side of the face paralysed. On admission to Westminster Hospital there was facial palsy and the patient had lost all taste on the anterior part of the left side of the tongue. On Oct 16th an anastomosis was carried out. An incision was made with a tenotomy knife deeply into the hypoglossal nerve and the distal end of the facial nerve was implanted into it laterally. On Oct. 23rd it was noted that the palpebral fissure was lessened in size and the eye could be temporarily closed. On Oct 28th the patient began to move the left angle of the mouth. At present movement was almost perfect; there was slight atrophy of the left side of the tongue.

Mr. TUBBY also showed two cases illustrating the Treatment of Complete Paralysis of the Gastrocnemius and Soleus, with Talipes Calcaneus, by Nerve Grafting. The patients were both aged nine years and had old-standing poliomyelitis. The nerve branches to the muscles had been isolated and implanted into the external popliteal nerve. The results were excellent.—Mr. SPENCER thought that physicians should decide on a limit beyond which spontaneous recovery was impossible and then call in a surgeon.—Mr. TUBBY said that the distinction was not always clearly made between the direct effect of muscular paralysis and the secondary effects of contractures. If this were done surgical measures would often be resorted to earlier.

Mr. TUBBY also exhibited a case of Congenital Dislocation of the Hip.

Dr. F. PARKES WEBER showed a case of Acute Thyroid Swelling, with Acute Hamorrhagic (Edema of the Right

le of the Pharynx and Larynx, occurring in a male patient, aged 54 years. He had been under treatment for interstitial nephritis and had a blood pressure of 100 millimetres. On the afternoon of March 4th, the neck had suddenly begun to swell. On admission to the German Hospital at 7 P.M. the whole thyroid and, especially the right lobe, was much enlarged, tense, and tender. There was likewise considerable general swelling of the neck and over the upper part of the sternum there was great oedema of the right side of the pharynx and larynx. The pharynx was scarified and the patient was much relieved by a morphine injection, rest in bed, and the external application of ice to the neck. The swelling gradually subsided. At present (March 17th) the man felt most in his usual condition but the thyroid gland was enlarged and the skin of the neck and the upper front part of the chest was discoloured, as from extensive bruising, and there was still much ecchymosis of the mucous membrane of the pharynx and larynx.—Dr. DAVID FORSYTH said that the anatomical structure of the thyroid gland made it improbable that a hæmorrhage occurring therein would produce symptoms such as those described, but Dr. WEBER replied that an effusion must have taken place into the thyroid.

Mr. H. BETHAM ROBINSON showed a case of Enlargement of the Clavicle and Lower Jaw. The patient was a boy, aged 13 years, with chronic inflammatory swelling of the right clavicle and the left side of the lower jaw dating from fall six months before. There was some nodular enlargement of the right half of the thyroid gland. There had been some reduction in size under iodide of potassium.

Dr. HARRY CAMPBELL showed a case of Disappearance of the Subcutaneous Fat above the Region of the Lower Extremities occurring in a woman, aged 21 years. The disappearance was especially marked in the face, chest, and abdomen, including the region of the mons Veneris. There was no disappearance of fat from the mammary glands or the orbits. There was an abundant deposit of subcutaneous fat in the buttocks and lower extremities generally. The patient was said to have been perfectly normal up to the age of seven years. From this time until the age of 14 years there occurred a gradual disappearance of fat from the affected regions.—The PRESIDENT compared the condition to morphia.

Mr. DONALD J. ARMOUR showed a woman, aged 29 years, from whom a large Polycystic Kidney had been removed two and a half years previously. She had been quite unaware of her tumour and there had been no urinary symptoms.—Dr. ARTHUR WEBER referred to a recent case in which a French surgeon had removed what he took to be a cystic kidney but which proved at the necropsy to be a polycystic pararenal growth of Wolffian origin.

Mr. SPENCER showed a case of Obliteration of Bilateral Psoas Abscesses. The patient, a woman, aged 25 years, had recovered, apparently completely, after several operations.—Mr. WARREN LOW referred to the advantages of closing the wound after operation in such cases.—Mr. SPENCER, in reply, said that it was at first impossible to do so in this case, as the sac was already septic when he first saw the patient.

Mr. A. E. J. BARKER showed a case, in a woman, aged 24 years, of Fixation of the Jaw. The left masseter was fibrous.—The PRESIDENT noted the elongation of the lower jaw and suggested alveolar trouble as the cause of the condition.

OPHTHALMOLOGICAL SOCIETY.

Thrombosis of the Cavernous Sinus.—Sympathetic Irritation.—Cysts of the Pars Ciliaris Retina.—Exhibition of Cases and Specimens.

A MEETING of this society was held on March 14th, Mr. PRIESTLEY SMITH, the President, being in the chair.

Dr. W. O. ROCKLIFFE (Hull) read notes of a case of Thrombosis of the Cavernous Sinus associated with Meningitis, originating in a septic sore on the upper lip. The patient was a fish-dock labourer whose general health but for occasional bronchitic attacks had been satisfactory. When first seen on Nov. 18th there was proptosis on the right side, with fixation of the globe, swelling of the lids, and chemosis. Five days previously a small pimple had appeared on the right side of the upper lip, which had been picked and eventually pricked with a pin. The lip and face became greatly swollen and were subsequently treated with a linseed-meal poultice. During the two days the patient was in the infirmary there

was delirium and the temperature ranged from 102° to 105° F. A lumbar puncture was made and cocci were identified in the leucocytes. Cultures proved the infection to be staphylococcus pyogenes aureus both in the spinal fluid and lip. Death occurred on Nov. 20th, two days after admission and seven days after the spot appeared on the lip. At the necropsy the meninges about the cavernous sinuses were covered with lymph. The right and part of the left cavernous sinus and the transverse sinus were thrombosed. The orbital tissues on the right side were inflamed and swollen, but there was no pus. The case differed from one of cellulitis of the orbit, which did not tend to affect the opposite side.—Mr. J. B. LAWFORD cited a somewhat similar case of cavernous thrombosis in a man, aged 36 years, which resulted from a pustule in the nostril. There was cellulitis of the nose, face, and orbit. Death occurred in four days, though antistaphylococcal serum was given.

Dr. ROCKLIFFE also recorded four cases of Sympathetic Irritation occurring 18, 22, 28, and 50 years after injury to the other eye. In two of these cases a foreign body was found and a fragment of stone was probably present in the eye in the third case, the fourth being a punctured wound. Considerable ossification of the choroid was present in three.—Mr. E. TREACHER COLLINS commented on the wide field of discussion opened up by Dr. Rockcliffe's communication. He thought that three of the cases were rather of the nature of sympathetic inflammation than irritation on account of the presence of keratitis punctata. In the other, glaucoma occurring in the second eye might be attributed to the shock of excision, as it not infrequently followed this. In reference to the specimens shown he said that ossification of the iris was unknown, though such change might occur in the adjacent choroidal processes or the capsule of the lens.

Mr. A. R. BRADLEY read a paper on Cysts of the Pars Ciliaris Retina and stated that clinically these structures had frequently been mistaken for sarcomata of the ciliary body, but little was known of their pathology, though their study might throw some light on the secretion of the aqueous fluid. They were found in such a variety of conditions that he was only able to classify them according to their apparent mode of origin. Two changes which played an important part in the origin of some varieties limited to the cells of the non-pigmented epithelium were multiplication of the cells and vacuolation of the cell bodies. This proliferation was most frequently found in senile eyes and was commonly associated with hypertrophy of the ciliary processes. The cells of the pigmented layer appeared to play a mere passive rôle, and even in cysts arising by simple detachment of the epithelium it was the unpigmented layer alone which was affected; the adhesion between the pigmented epithelium and the underlying ciliary body being a peculiarly intimate one. The different modes of origin appeared to be: (1) detachment of the non-pigmented epithelium; (2) proliferation of the non-pigmented epithelium cells, with the formation of a cavity arising either by a simple separation of the cells or by their vacuolation and destruction; and (3) proliferation and union of the cells of adjacent processes, leading to a portion of the posterior chamber being shut off from the remainder. The number of the specimens was too small for him to come to any conclusion as to the relative frequency of these varieties. The contents of the cysts were usually lost during the preparation of the specimen, but when present they consisted of a deeply-staining, homogeneous, coagulable fluid.

The following cases and card specimens were shown:—

Mr. F. F. BURGHARD and Dr. E. L. PRITCHARD: Cavernous Sinus Aneurysm cured by a new method after failure of the usual operation.

Mr. G. COATS: A case of Orycephaly.

Mr. L. J. PATON: Orycephaly.

Mr. W. I. HANCOCK: Peripapillary Atrophy.

Mr. COLLINS: A Corneal Affection in Myxœdema.

Mr. H. B. GRIMSDALE: Unusual Opacity in the Lens.

Dr. ROCKLIFFE: A Completely Calcareous Lens; Totally Ossified Iris (1).

LIVERPOOL MEDICAL INSTITUTION.

Exhibition of Cases.—The Treatment of the Acute Pathogenic Infections with Vaccines and Sera.

A MEETING of this society was held on March 21st, Mr. FRANK T. PAUL, the President, being in the chair.

Many cases of interest were shown, among them being:

Medical cases by Dr. A. G. GULLAN, Mr. F. A. POND, Dr. NATHAN RAW, and Dr. R. G. WILLIS; Surgical cases by the PRESIDENT, Dr. DAVID MORGAN, and Mr. K. W. MONSARRAT; Skin cases by Dr. H. LESLIE ROBERTS, Dr. F. H. BARENDT, Dr. G. G. S. TAYLOR, Dr. R. W. MACKENNA, Dr. W. O. ORAM, and Dr. E. L. ANDERSON; Eye cases by Dr. K. A. GROSSMANN, Mr. R. J. HAMILTON, Dr. W. E. LIVSEY, and Dr. A. N. WALKER; and Ear cases by Mr. E. M. STOODALE.

The PRESIDENT showed the following cases: 1. A boy, aged 11 years, who had been scalded when two years old on the Side of the Chest. Subsequently the mother noticed a swelling in the region of the left pectoral muscle. This had gradually grown until it was now of the size of a hen's egg. It had been examined and found to consist entirely of muscle. 2. A case of Immense Hypertrophy of the Gums of Both Jaws, shown previously before the society and now cured. The gums were removed by four operations two years ago without extracting the teeth, and recurrence had taken place. A second series of four operations was undertaken with removal of the entire alveolar processes resulting in complete cure. (Models of the original condition were shown by Mr. F. J. M. PHILLIPS, dental surgeon to the Royal Infirmary). 3. A woman, aged 53 years, who had received an Injury to the Fifth and Sixth Cervical Nerves from a fall on the shoulder causing paralysis of the muscles supplied by those nerves.

Dr. RAW read a paper on the Treatment of the Acute Pathogenic Infections with Vaccines and Sera. He particularly mentioned the great value of antidiphtheritic serum if given early in pure cases of diphtheria but said that in mixed infections it did not seem to exert the same beneficial influence. He had treated 212 cases of erysipelas, puerperal fever, and other septic infections with antistreptococcal serum and was convinced that in streptococcal infections the serum if given early had a marked curative effect. The use of a polyvalent serum had immensely improved the results of treatment. In the treatment of a large number of cases of tuberculosis he had come to the conclusion that tuberculin R. had not much curative value in phthisis pulmonalis, even in the early stages of the disease, but in the so-called surgical forms of tuberculosis, such as lupus, tuberculous glands, joints, and peritonitis, tuberculin R. had a most marked curative effect and his results of treatment of numerous such cases were astonishingly good. He was not favourably impressed with the value of antitetanic serum.—Dr. W. B. WARRINGTON considered antistreptococcal serum to be of little utility in medicine and pointed out that it was the recognition of this that led Sir A. E. Wright to introduce the method of vaccines. He alluded to the value of endoneural injection of the antitoxin in tetanus.—Dr. ERNEST E. GLYNN, commenting upon the very favourable results obtained by Dr. Raw with antistreptococcal serum in puerperal septicæmia, asked what evidence there was that the cases were true septicæmia and also due to streptococci, as cultures were not made in the majority of instances. Might not many have been cases of intoxication and recovery been the result of local treatment of the uterus? Dr. Raw's success in treating lupus with tuberculin uncontrolled by the opsonic index and unassisted by light treatment was not in accord with the experience of many, for lupus was very refractory. He was also surprised that Dr. Raw had cured three cases of tuberculous meningitis with tuberculin, especially as the opsonic index had not been taken.—Dr. A. S. PARKINSON said that the earlier tuberculin was given in pulmonary tuberculosis the greater the probability there was of a good result. He thought that the failure in advanced cases was sometimes due to secondary infection of the lungs by pyogenic organisms, and that the immunity of such patients against secondary infections should be raised as well as the treatment by tuberculin injections carried out.—The following gentlemen also took part in the discussion: Dr. TAYLOR, Dr. J. HILL ABRAHAM, Dr. B. SUMNER, Dr. N. E. ROBERTS, Dr. R. J. M. BUCHANAN, and Dr. ORAM.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Exhibition of Specimens.—Pubiotomy (Hebotomy).

A MEETING of this section was held on March 8th, Dr. R. D. PURKFOY, the President, being in the chair. Dr. ALFRED J. SMITH exhibited a Uterus showing a Fibromyoma in the Fundus and Cancer in the Cervix. The patient

was 40 years of age. Dr. Smith had diagnosed and discovered polypus of the uterus and had made up his mind to remove it as the cause of the hæmorrhage from which the patient suffered. During the removal of it he found an ulcerated spot in the cervix which under the microscope proved to be an adeno-carcinoma.—Sir ARTHUR V. MACAN said that the specimen was interesting as showing two things which were extremely rare in combination, though neither was rare by itself.

Sir ARTHUR MACAN exhibited specimens of Carcinoma and of Sarcoma of the Body of the Uterus. One of the patients was 50 and the other was 60 years of age.

Mr. E. HASTINGS TYRREDDY, Master of the Rotunda Hospital, Dublin, described a case in which he had delivered a primiparous woman of a living child at full term through an internal conjugate measuring 6.5 centimetres by the performance of a left-sided hebotomy. Hæmorrhage had been very severe and had resulted in a considerable degree of collapse. Delivery had to be hastened because of prolapse of the cord, which took place before the operation was undertaken. Deep lacerations of the cervix, of the soft parts lying between the severed bone, and of the perineum occurred, requiring catgut sutures. The patient's recovery was uneventful and she left the hospital in perfect health the ninth week with a living child.

Dr. M. J. GIBSON read a paper on Pubiotomy, with Note on Three Cases. He said that the idea of improving the prognosis for the mother and child in cases of contracted pelvis, and of lessening the number of Cæsarean section inductions of premature labour, and perforations of the live child, by an artificial enlargement of the pelvis was a very old one. Symphysiotomy, first demonstrated by COURVILLE in 1655, was first performed on the living subject by Sigault 10 years later. Symphysiotomy was not a very satisfactory operation. To Gigli belongs the honour of being the first to propose as a substitute for it an incision through the pubis. The great danger in Gigli's operation lay in the large easily infected incision which he employed. Döderlein's subcutaneous pubiotomy was really a new operation, at once simple and effective. It was indicated in cases of narrow pelvis when the cervix was fully dilated and when, in spite of good contractions, the head moved freely about the brim. Good uterine contractions might by preparation of the maternal soft parts and by moulding of the fetal head drive the latter through a pelvis so narrow that natural delivery could hardly have been expected. The operation might be performed in cases of flat pelvis with a conjugata vera up to 6.75 centimetres, and in generally contracted pelvis up to seven centimetres, but for these very low conjugates the head must not be larger or harder than normal. He adopted Döderlein's method in his cases. A small incision, sufficient to admit a finger, was made over the bone, usually at the left side between the symphysis and the tubercle. Döderlein's needle was passed down behind the bone and its point brought out in the greater labium. Gigli's saw was attached and the bone divided. The hæmorrhage was as a rule easily stopped by compression. The patient should not be delivered except it was absolutely indicated. After labour was completed a few strips of adhesive plaster were put around the pelvis, a binder was applied, and the patient was kept lying on her back for 12 days. She might get up on the fourteenth or sixteenth day. The advantages over symphysiotomy were that the undivided soft parts prevented the pelvis from springing suddenly apart, while the bladder and urethra were not so liable to injury during the operation. The operation was also more easily and more rapidly performed. He performed his first operation on August 16th, 1906; the patient was 34 years of age and had been pregnant nine times but had no living child. Premature labour had been induced twice. The pelvis was generally contracted with a true conjugate of eight centimetres. A child weighing 12 pounds was delivered without difficulty. The patient was walking about on the twenty-first day, and left the hospital with her child two days afterwards in perfect health. The second patient was 32 years of age and had also been pregnant nine times. Her second child was delivered with forceps and was still alive. She had premature labour induced three times. In her last pregnancy she went into hospital after being in labour for 14 hours. The cervix was fully dilated, the membranes were ruptured, the fetal head was small and was free above the brim. The pelvis was generally contracted and flat with a conjugate of 7.5 centimetres. The fetal pulse-rate reckoned from the heart sounds was about 160, but was very irregular. Meconium came away in large quantities. The mother

in pneumonia and was in a very bad condition. Pubiotomy performed and a child weighing six pounds was extracted by forceps. The mother had her crisis on the ninth day. She left hospital on the twenty-fourth day in good condition. The third patient was a tripara, aged 29 years. Her second child was delivered with forceps, weighed 5½ pounds, and was still alive. The pelvis was rachitic and flat; the jugata vera measured seven centimetres. A child which transversely was easily delivered by podalic version after lotomy was performed. It weighed 7½ pounds. The three infants were breast-fed. None of the women complained of or showed any difference from a normal confinement, except, of course, the second one, who was suffering from pneumonia. The maternal mortality so far was about 3 per cent. thought that there was a great future for this operation that it would never share the fate of symphysiotomy but would remain a means of overcoming the difficulties connected with the lesser degrees of contraction of the pelvis without injury to the mother or child.—Sir ARTHUR MACAN said that he had seen pubiotomy performed with ease by an operator who had never done it before. There was nothing in it which could not be done by a man who had been through the Dublin school. By its use a practitioner in the country might save both mother and child in cases where he had put on the forceps and failed and was face to face with perforation.—THOMAS NEILL said that with this operation the risk of infection would be less than in the induction of premature labour.—Dr. HENRY JELLET said that it seemed to him to be doing Cæsarean section on a perfectly healthy patient, weakened by the long continuance of labour, they were not certain of the after results. On the other hand, he certainly agreed that, in cases where the forceps had been tried and failed, pubiotomy had got its place and would keep it. The ease with which it was performed, the small amount of assistance required, the small extent of the wound, and the short time in performance, were all important factors in producing a small mortality.—PRESIDENT said that he could not see how pubiotomy did take the place of Cæsarean section in certain cases. thought that its danger had perhaps been passed over too lightly. The danger of injury to the bladder had been amply illustrated by recorded cases. The danger of hæmorrhage, he thought, was considerable, since a fatal case had been reported from Vienna. He could not help wondering after the locomotive powers of the patients had been exhausted afterwards in all cases, or whether sufficient rest had elapsed to enable an opinion to be formed on the subject. He agreed, however, as to the value of the procedure.—TWEEDY, in reply, said that while both symphysiotomy and pubiotomy had come to stay he did not think that either of them would prove a panacea. He had performed both operations with equal ease.—Dr. GIBSON, in reply, said that regarding the chance of injuring the bladder it must be remembered that in pubiotomy the pelvis was well protected by the undivided soft parts. The bladder was never so directly connected with the pubic bone that any tearing could result from the small amount of stretching undergone, even when owing to a previous puerperal sepsis there were adhesions between the bladder and the bone. This occurred rarely. A French author had stated that the ends of the bone could separate up to eight centimetres without injury to the bladder or articulations. If bleeding could not be stopped by compression the practitioner could open the wound and find where the bleeding was coming from. Pubiotomy was, he believed, a safer operation than Cæsarean section up to a certain point—i.e., a pelvis with a conjugate diameter measuring above 8.75 centimetres. The latter was never done at the beginning of labour, therefore there was no chance of seeing what the contractions would do, and no way to know well it was done there were cases on record where the cicatrix gave way afterwards. In both operations the perineal aseptically union would be equally good, but danger to the bladder and urethra was much greater in symphysiotomy than in pubiotomy and the former was also a more difficult operation and therefore not so well suited for country practitioners.

Tuberculosis by Marine Climates and began with some general remarks on sea air, sea water, sea bathing, sea voyages, and the pharmacology of the sea, and with a brief reference to Quinton's subcutaneous sea-water infusions. Ocean climate, he said, differed from all others in its exclusively marine character and its equability in contrast with the sea-coast climates, which were the most variable and offered endless combinations between the features of the coast and those of the sea, none of them being necessarily the ideal one for consumption. The effects of the seaside and sea air were mainly dependent on the patient's power of "reaction" on the one hand, and on the other hand upon the all-important effect upon the tendency to catarrh. Touching the forms of tuberculosis Dr. Nathan Raw had recently urged an etiological and clinical distinction between the infection from the "bovine" bacillus and that from the "human" bacillus which agreed well enough with their climatological data and practice, all ascribedly "bovine" infections (surgical, glandular, scrofulous, cutaneous, serous, and visceral, other than pulmonary) being almost unreservedly benefited by the sea. This was not always the case with the pulmonary affection for which alone the "human" bacillus infection would be to blame. The multiple types evolved by individual predispositions (constitutional, organic, and functional) fell into the two groups of uncomplicated tuberculosis and of catarrhal tuberculosis or phthisis pulmonalis. In the first group tuberculosis might be "latent" and healing or "declared" and spreading. In the second (which included the acute caseous form) catarrh was the chief agent of mischief as well as the first object of climatic treatment. To describe as "consumptives" the bearers of latent and spontaneously healing tubercles would be inaccurate; and, on the other hand, "tuberculosis" did not depict the varied miseries of catarrh, of pneumonia, and of caseation in the painful record of advanced consumption. Bacillary infection ("tuberculosis") might mean little or much damage and "consumption" (or in the Greek vernacular "phthisis") was always a big affair and in pathology it spelt "catarrh." They now had to reverse the famous dictum of Niemeyer and to recognise that "the worst fate that can befall the patient infected with tubercle is that he should develop phthisis." The aërotherapeutics of tuberculosis were thus, practically speaking, those of catarrh. But whereas sea air was curative of some forms of simple non-bacillary bronchitis it was not always sufficiently dry for the cure of catarrh based upon tubercle. Whether they considered the meteorological factors or were guided by the results observed clinically it could not be gainsaid that the altitude was likely, and proved itself, to be more effectual in obviating early catarrh and curing it at any of its stages than the climate of the coast. But as they had not any altitudes available in this country they should adopt an opportunist policy and make the most of their unrivalled assortment of "protecting" and "bracing" seaside resorts by careful selection of cases, by progressive elaboration of their clinical treatment, and by measures tending to correct any imperfections of the local climates. The "bracing" resorts possessed the highest restorative efficiency, but their suitability for pulmonary tuberculosis was limited. The present position of the treatment by marine climates rested upon the recognition of the fact that mere "airing" and "salting" were not competent in themselves to cure the pulmonary complications of the disease when it affected the lungs. "Open air" and "sea air" were a basis for treatment, but could not supersede the scientific methods of modern therapeutics. The marine resorts should add to their natural resources increased facilities for a systematic treatment planned upon a combination of the hospital idea and of the sanatorium idea.—Mr. Henry Colborne (St. Leonards-on-Sea) read a statistical paper in which some facts and figures were set forth as to the temperature, rainfall, bright sunshine, and climatic conditions of Hastings, covering a considerable period.—Dr. A. Scarslyn Wilson (St. Leonards-on-Sea) said that examination of the mortality statistics showed that since 1898 there had been a marked decline in the number of deaths from phthisis registered in Hastings. This reduction was so great (nearly 35 per cent. comparing 1898 with 1906) as to make it reasonable to infer that the stream of phthisical patients which formerly flowed in this direction had been partially diverted into other channels, probably towards the inland sanatoriums which had recently sprung up. If other seaside resorts had been similarly affected a great change must have taken place.

the medical profession as to the value of marine stations in the treatment of active phthisis.—Dr. D. Anderson-Berry (St. Leonards-on-Sea) wished to emphasise certain points: (1) that there was no single method whereby phthisis might be successfully treated; drugs had their place as well as open air and other hygienic methods; and (2) that the patients who did well at marine stations were those whose opsonic index showed a considerable power of reaction present, especially when tested by injections of tuberculin. In answer to a question asked he would add that such a climate as that of St. Leonards was especially favourable in his experience to cases of emphysema upon which had been grafted tuberculous processes.—Dr. F. Bagshawe (St. Leonards-on-Sea) pointed out that Dr. Henry Bennet was an early advocate of the treatment of phthisis by the open-air method. All his patients at Mentone were enjoined to have their windows open night and day and to spend much time reclining in the garden. The importance of rest was especially enjoined. Looking back upon an experience of 40 years at Hastings he was able to point to a long list of patients who had lived through the active stages of pulmonary tuberculosis and had settled down to spend long lives, with arrested damage, some partially, some entirely, cured.—Mr. George Pernet (London) desired to call attention to the importance of general treatment in tuberculosis of the skin, especially as regards marine climates.—Dr. F. J. Wethered (London) said that it might be accepted that the treatment of pulmonary tuberculosis in marine climates was practically one form of the "open-air" treatment of the disease, the essentials of which might be obtained *par excellence* at English seaside resorts. He laid stress on the importance of studying "individualism" in the selection of cases to be sent to marine climates.—Dr. P. G. Lewis (Folkestone) said that so long as there were consumption hospitals in congested areas, as the City-road and Brompton road in London, it would be necessary to try to convert the leaders of the profession to the imperative need for treating phthisis out of large cities. He criticised sanatorium treatment and advocated the advantages of marine climates for the treatment of most forms of tuberculosis.—Dr. Leonard L. B. Williams (London) said that sanatoriums were doing a fine work, not so much in curing phthisis as in educating the public in open-air methods. Marine climates could offer no such advantages, because climate without method was useless.—Dr. St. Clair Thomson (London) spoke in emphatic terms of the necessity of instruction concerning the open-air methods carried out in the inland sanatoriums.—Dr. W. J. Tyson (Folkestone) spoke in favour of marine climates in the treatment of tuberculosis.

MEDICO-LEGAL SOCIETY.—A meeting of this society was held on March 12th, Mr. Justice Walton, the President, being in the chair.—A discussion was held on the working of the Midwives Act, 1902.—Mr. J. Theodore Dodd (barrister-at-law) dealt with the two practical points which arose—(1) when the certified midwife was bound by her regulations to send for medical aid; and (2) the payment of certified midwives at such a rate as would attract a competent and better class of women. As to the former, it was not the duty of the medical officer of health to help at birth, and hence the necessary aid must come from the Poor-law. In principle the law provided such assistance but in practice it was difficult to obtain. Medical relief was only given to the destitute, others had to enter into an agreement to repay the cost, and for a matter of emergency the necessary proceedings were too leisurely and led to too great a delay. A letter from a certified midwife to a medical man should be a sufficient claim upon the guardians in cases of poverty. He would have midwives attached to the Poor-law medical staff as was already the case in Ireland; otherwise, to avoid the stigma of pauperism, midwives should be on the staff of the medical officer of health.—Dr. F. S. Toogood (Lewisham Infirmary) said that Poor-law guardians would object to their privileges being handed over to certified midwives; district medical officers relied upon the extra midwifery fees to make their posts worth being held and would resent the introduction of competing midwives.—Sir William Collins, M.P., said that when he was a member of the London County Council he had objected to having to fetch and carry for the Central Midwives Board, as also to allowing the cooption of irresponsible persons to the Local Government Act (Special) Committee; the local supervising myoma in the case of a woman, proper control and not anonymous

charges against midwives. The London County Council was offering annual scholarships to would-be midwives.—Miss Wilson (President of the Midwives' Institute) said that she had been on the Central Midwives Board for four years and was well acquainted with the subject. Midwives were poorly paid, their work was not peculiarly attractive, and of those who were now being examined by the Central Midwives Board at least one-half were not going to attend the poor but were intending to take up monthly nursing or other well-paid work. If only efficient midwives were available the preventive work that they could do in guarding the health of poorer mothers would obviate to a large extent the need of sending them to the local infirmary, which not also often implied robbing the home of its mainstay. It was not the function of the Central Midwives Board to regulate the supply of midwives; 12,000 certified women were in private practice in England and Wales, only one-third of whom had been properly trained. That the Poor-law could help midwives in difficulty was shown by the recent action of the guardians of King's Norton and Birmingham, who for one year had allowed midwives to summon the district medical officer without the usually indispensable order of a relieving officer. Poor-law medical officers were called in now more frequently than formerly; this was an admitted hardship where the salary was an inclusive sum. The Irish system of having dispensary (Poor-law) midwives had many advantages; although its adoption in England as it stood might not be advisable it was practical and full of suggestions.—Dr. A. H. Downes (Local Government Board), premising that his remarks were not to be regarded as in any way an official declaration, said that the first object in the working of the Midwives Act, 1902, should be to facilitate the provision of proper aid to women in labour. He was surprised to hear it stated that it was not the function of the Central Midwives Board to consider the supply of midwives; it was certainly not the province of the Local Government Board, nor was there any basis for the extraordinary misapprehension that the Local Government Board desired to establish a second standard of training for certified midwives. With regard to the provision of medical assistance in cases of difficulty, he thought that more power existed than had been suggested in the discussion. Thus, an Act of 1843 (11 & 12 Vict., c. 110, s. 2) enabled the guardians of any union, if they thought proper, to pay for any medical or other assistance rendered to any poor person on the happening of any accident, bodily casualty, or sudden illness, although no order had been given by any of their officers or by the overseers. This power had been acted upon in some unions long before there was any question under the Midwives Act, and the attention of guardians had been drawn to it by the Local Government Board on various occasions since the Act. The action of the guardians under the 1843 statute, however, was entirely discretionary; there was no guarantee that the medical practitioner would get his fee in all cases, and it was a doubtful point whether compulsory powers should be granted, in which case the State would tend to become a debt-collecting agency. In some cases sanitary authorities had availed themselves of a provision of the Public Health Acts (s. 133 of the Act of 1875; s. 77 London Act, 1891) for the furnishing, with the sanction of the Local Government Board, of temporary medical assistance for the poorer inhabitants of their district, although originally this was probably only intended to apply to epidemic disease.—The President said that he feared any change which would weaken the tie of parental responsibility; he saw also a great difference between a voluntary charity and the legal obligation to support others. It might possibly be enacted that a certified midwife should, on her own responsibility, send for a medical man in cases of difficulty: he should be paid by the guardians in necessary cases, otherwise the husband should be responsible, even although he were not privy to the contract.—Mr. Theodore Dodd, in reply, said that the Local Government Board might settle the whole question by the issue of a circular to boards of guardians and that it was not fair that women and infants should suffer and die because of a quarrel between medical men and midwives.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held on March 13th, Dr. Arthur Foxwell, the President, being in the chair.—Mr. O. A. Leedham-Green showed an example of a rare condition in a female child upon whom he had operated, with success for a Prolapsed and Inverted Bladder. The operation consisted, after the replacement of the prolapse, in

a small quantity of liquefied hard paraffin into the peri-urethral tissue at the neck of the bladder.—Dr. J. Douglas Stanley showed a case of Osteitis Deformans. The patient was a woman, aged 60 years, who had complained of pain in the back and legs for some years. There was also pain in the right knee. She noticed 18 months ago that the right leg and thigh were "getting bent" and that she was going lame. About the same time she began to stoop. On examination well-marked kyphosis was found; the right leg and thigh were bent forwards and outwards; the tibia and femur were massive, presenting the typical appearance of Paget's disease. The left femur and the right humerus were similarly affected to a slight degree. The skull showed no abnormality nor were there any signs of tumour formation.—Dr. Stanley also showed for contrast a woman suffering from Syphilitic Osteitis affecting the Right Tibia.—Dr. O. J. Kauffmann showed a man, aged 28 years, suffering from very pronounced Sclerotic Spasm, coupled latterly with frequent severe hysterio-epileptic attacks. The patient had been epileptic ever since his fifth year and until December, 1906, he had been subject to true epileptic seizures about once in every six weeks, but his mind had remained normal and he had been in regular employment as a clerk. In December he had been attacked with influenza which had kept him in bed for about a week. On the day after rising from bed the jumping spasm had begun and, despite energetic treatment by bromides, had gradually increased in strength. Five days before his exhibition the patient had suddenly commenced with violent hysterio-epileptic convulsions. At the time of his exhibition the sclerotic spasm was so intense that he was unable to stand without support. The spasm was rendered more intense by being observed and when the patient lay in bed it took the form of occasional sharp flexions of the thighs on the trunk.—Dr. J. G. Emanuel showed a girl, aged 15 years, suffering from clonic spasms of the left arm and left leg of six weeks' duration appearing after a fright caused by the barking of a dog. The movements for the most part consisted of alternate supination and pronation of the hand, combined with eversion and inversion of the foot and flexions of the trunk on the thighs. Some three years previously the patient had experienced a similar attack, lasting two or three months, also brought on by fright caused by a dog. At this time she was acquainted with another child suffering from chorea. The case was described as one of complicated habit-spasm or habit-chorea brought on by fright in the production of which mimicry apparently played a part.—Mr. J. Jameson Evans showed a woman, aged 34 years, the subject of Graves's disease, who exhibited new signs. The exophthalmos was confined to the left eye, but the pigmentation of the eyelids (Tells's sign) and marked difficulty in averting the lids (Gifford's sign) were present on both sides.—Dr. James E. H. Sawyer showed a specimen of Malignant Growth of the Heart. The patient's left leg had been amputated for an osteo-sarcoma of the lower end of the femur of four months' duration but she died three months later from secondary growths in the heart. The right auricle contained one small nodule of secondary growth. The outline of the right ventricle was irregular in shape owing to the growths in its walls and it was necessary to use a saw to open the ventricle. Most of the growth projected into the cavity of the ventricle and consisted of round hard nodules of osteo-sarcoma. Many of these growths were freely moveable, being attached to the ventricular wall by narrow pedicles. There were no deposits in the left side of the heart but there were many in the lungs and pleura.—Dr. J. Miller showed specimens from a case of Early Acute Poliomyelitis occurring in a boy, aged nine years, the total duration of whose illness was less than a week. On admission to hospital he complained of pains in the back of his neck; his legs and his abdominal muscles were paralysed and the reflexes, with the exception of the pupillary reflex, were absent. Before death the arms and the chest muscles gradually became paralysed. The necropsy revealed a softening and swelling with congestion and scattered punctate hemorrhages affecting especially the fourth, fifth, sixth, and seventh cervical segments and to a less marked extent the whole of the spinal cord. A pure growth of staphylococcus pyogenes citreus was obtained from the grey matter. Microscopically there were found dilatation of the vessels passing into the grey matter, infiltration of the perivascular lymph spaces with large numbers of cells, hemorrhages into the grey matter of both anterior and posterior horns, and degenerative changes in the cells of the grey

matter. There was no evidence of thrombosis in the vessels.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—A meeting of this society was held on March 15th, Dr. G. A. Sutherland being in the chair.—Mr. Russell J. Howard read a paper on Tuberculosis of the Testis in Infants. The condition, he said, was rarer in infants than in adults owing to the period of active function not having arrived. It was rare in the undescended testis. Tuberculous peritonitis was a frequent complication. If one testis only was affected and general treatment was not successful the testis might be removed without bad effect on the mental and bodily growth, but if both testes were diseased they must only be removed as a last resource owing to the impairment of bodily and mental vigour produced by their ablation.—Mr. Howard also showed a specimen of Teratoma from the back of a child, aged six years. The tumour, five inches long, was situated on the sacrum and coccyx. It consisted of several different parts; a large structure resembling a kidney in a serous sac was below and a mass of cysts above. Bone, lymphoid tissue, and cartilage were also found. The tumour was very vascular. The large kidney-shaped mass consisted of interlacing tubules lined with a columnar-celled epithelium, with lymphoid tissue and large round cells in between the tubules. Some of the cysts were lined with stratified epithelium with sebaceous glands, others with columnar epithelium and villi. Cartilage, striped and unstriped muscular tissue, and lymphoid tissue were also seen in the section. The tumour, therefore, was derived from all three layers of the embryo and was a teratoma.—Dr. E. Cantley showed a large Abdominal Tumour in a boy, aged three years. It was probably a congenital hydronephrosis.—Dr. J. Porter Parkinson showed a case of Cerebral Tumour in a girl, aged seven years. There was a history of occasional convulsions for 18 months. Two months ago weakness of the right side of the face and the right limbs was noticed. Recently there had been headache and vomiting. There was double optic neuritis. In one fit which was observed the movements were chiefly of the right limbs. Dr. Parkinson considered that there was a subcortical tumour in the left hemisphere, probably gliomatous in nature, and proposed to have the child trephined with the object of preserving the sight.—Mr. G. Pernet exhibited a case of Multiple Lupus Vulgaris in a boy, aged ten years. The patches, which were on the chin and right shin, followed an attack of measles. They had much improved during three months' treatment by the x rays preceded by scraping.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

A meeting of this society was held on March 11th, Dr. J. Lindsay Steven, the President, being in the chair.—Professor Ralph Stockman and Professor Robert Muir described a case of Lymphadenoma, with involvement of the liver and spleen, occurring in a boy, aged 14 years, who had suffered from an enlargement of various glands over a period of eight years. Enlarged glands were removed from the left side of his neck in the Glasgow Royal Infirmary seven years ago. Further enlargement took place on the same side two years later but disappeared under treatment in the Edinburgh Royal Infirmary. A year later they again became swollen and were removed at the Sick Children's Hospital, Aberdeen. Since then the remaining cervical glands had become enlarged and these had been followed by enlargement of glands in other parts of the body. At the end of September, 1906, the abdomen became very prominent and a large hard swelling appeared on the left side and cough and night sweats became troublesome. On admission to the Western Infirmary, Glasgow, in December, extreme emaciation, profound anæmia, and a general enlargement of the lymphatic glands were noted. The spleen was greatly enlarged and the liver also showed enlargement. Ascites was well marked and there was oedema of the scrotum and lower limbs. Examination of the blood showed polymorphonuclear leucocytosis and a considerable diminution in the percentage of the hæmoglobin. The patient's temperature was very variable, with evening exacerbations; his weight and strength diminished, pleural effusion and jaundice developed, and death took place on Jan. 22nd, 1907. The necropsy showed general glandular enlargement. The abdominal lymphatic glands formed a large mass and were continuous with those in the groin; enlarged glands were also present in the portal fissure. The spleen weighed nearly two pounds and distributed through it were small pale

nodules. The liver was also much altered in appearance by diffuse infiltration and a similar condition was present in the lungs. The bone marrow showed a slight hyperplasia. The microscopic appearances of the lymphatic glands showed a proliferation of the endothelial cells and of the connective tissue stroma with disappearance of the lymphoid cells from the older foci and subsequent sclerosis.

PATHOLOGICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on March 13th, Dr. A. Hill Griffith being in the chair.—Mr. J. E. Platt and Dr. E. B. Leech showed microscopic slides to illustrate the Difficulty of Diagnosis of Breast Tumours. The left breast and a large axillary gland of a woman, aged 35 years, were removed for supposed carcinoma. Microscopical examination showed that the tumour in the breast was due to chronic mastitis while the axillary tumour was a fibro-adenoma and must have occurred either in an aberrant lobule or as a supernumerary breast.—Dr. J. de Ville Mather read a communication on the Pathology of Carcinoma of the Cervix Uteri. In some 47 cases of malignant disease of the cervix treated by vaginal hysterectomy the microscopical examination showed squamous epitheliomata in 37, glandular cancer in six, and sarcoma in four. Referring to sarcoma of the cervix in more detail Dr. Mather showed one case of angelo-sarcoma and another case where the growth was a mixture of round-celled sarcoma and squamous epithelioma. He did not consider sarcoma of the cervix to be as rare as was generally supposed.—Dr. John Cameron showed an Adult Brain with Complete Absence of the Corpus Callosum.—Dr. C. P. Lapage showed a specimen of Congenital Malformation of the Heart from a child aged two and a half years. The organ was twice the normal weight owing to hypertrophy of the right side. The walls of the right ventricle were thicker than those of the left and both ventricles communicated freely with the aorta owing to a deficiency of the interventricular septum. The aortic valves were normal. The ductus arteriosus supplied the lungs by the right and left pulmonary arteries. The auricles communicated by a small opening.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society was held on March 7th, Dr. Sidney Phillips being in the chair.—A discussion was opened by Mr. W. Watson Cheyne on the Diagnosis and Treatment of Fractures in the Neighbourhood of Joints; he advocated reducing such fractures under an x ray screen. Skiagrams must also be taken so that the position of the bones after reduction could be known. If the bones were not in good position a second attempt must be made to reduce the fracture, and if after this the displacement had not been remedied, unless there was some marked contra-indication, open operation must be resorted to, and he advised the employment of screws or pegs.—Mr. Edmund Owen insisted on the importance of an anæsthetic being given for the purpose of arriving at a diagnosis in cases where there was any doubt or difficulty.—Mr. A. Pearce Gould contended that in the diagnosis of a fracture near a joint the best time for making a correct diagnosis was immediately after the injury.—Mr. W. Arbuthnot Lane described the different operative procedures necessary in fractures near joints and produced numerous skiagrams illustrating many kinds of such fractures showing the position of the bones before and after operation, the bones being kept in place by wires, screws, plates, and staples or combinations of these.—Mr. Robert Jones of Liverpool described his method of treating fractures of the ankle-joint in children.—Mr. Watson Cheyne replied after some remarks from Mr. W. H. Olayton-Greene and Mr. T. Crisp English.

Reviews and Notices of Books.

The Puerperium, or the Management of the Lying-in Woman and New-born Infant. By O. NEPEAN LONGRIDGE, M.D., Ch.B. Vict., F.R.O.S. Eng., M.R.C.P. Lond. London: Adlard and Son. 1906. Pp. 272. Price 5s.

As the author remarks in his preface, the details of the treatment of the puerperal period are often inadequately taught in a general hospital and insufficiently described in the ordinary text-book on midwifery. His little work therefore supplies a want and will, we are sure, be welcomed by those students and midwives for whom it is intended. It

has the further advantage that it embodies the teaching current in these matters at Queen Charlotte's Hospital. In the section on post-partum hæmorrhage the author states that he has determined the coagulation time of the blood in ten women a few hours after they were delivered and found that there was no appreciable shortening of this period. This result is in accordance with the most recent investigations on the changes to be found in the blood during pregnancy. On p. 12 we find the statement that chloroform up to a certain point predisposes to uterine inertia. This is not a very exact statement. Pinard and others have shown that chloroform tends to interfere with the retraction of the uterus rather than with the contractions but it must always be borne in mind that the condition for which the chloroform is given really may be the cause of the inertia. In the description of the third stage of labour Dr. Longridge is in error in saying that the swelling above the pubes is due to the placenta lying in the vagina; it is due to the placenta lying partly in the lower uterine segment and partly in the upper part of the vagina, as can be readily ascertained by making a vaginal examination at this stage of labour.

In discussing the question whether the hand should be introduced into the uterus to extract a piece of membrane attention should have been drawn to the fact that while a piece of chorion readily breaks up and comes away this is not so with pieces of amnion which should always be removed. The statement that lacerations of the perineum occur more frequently in forceps deliveries we are not inclined to agree with: it is not our experience, nor was it that of a predecessor of Dr. Longridge, Dr. George Porter Mathew, who in a pamphlet entitled "Clinical Observations on 2000 Cases of Labour" stated that in his practice at Queen Charlotte's and other hospitals by the use of axis-traction forceps he had delivered 21 primipara without a single tear of the perineum. We agree with him in thinking that the use of axis-traction forceps more often prevents a tear than produces one. In the treatment of complete tears of the perineum no mention is made of the method of postponing the operation if necessary so as to have the advantage of proper assistance and a good light; such postponement can last for 12 hours without any fear of interfering with the primary union of the parts. We much doubt the wisdom of recommending catgut for the rectal stitches, even if introduced in the manner described.

In stating that the blood pressure shows a decided fall after delivery Dr. Longridge should have added that this fall only lasts for the first four or five days of the puerperium. A word of caution is necessary in advising the administration of urotropine in cases of cystitis. A dose as large as ten grains three times a day is often accompanied by the appearance of albumin in the urine; from five to seven grains is quite a large enough dose. We entirely disagree with the advice that a ring pessary should be put in if on the final examination on the patient getting out of bed the uterus is found displaced. The introduction of a ring pessary into the vagina before involution is complete is, in our opinion, very bad practice and almost certainly produces sub-involution of that canal. If a pessary is put in at all it should certainly be a Hodge but even this, we think, is better avoided. We are surprised to find that in the practice of the hospital to which this book mainly refers vaseline is immersed in 1 in 1000 perchloride of mercury is used as a lubricant and it is apparently not the practice to wear gloves when the hand is introduced into the uterus. The book is good so far as details of treatment and the description of the simpler affections of the puerperium are concerned but the account of puerperal parametritis is poor and should either be left out or entirely rewritten in another edition. From the description given it would be impossible for the student to recognise a typical case with a swelling above Poupart's

ligament, and it is certainly not true to say that from the practical clinical aspect pelvic peritonitis and cellulitis should be described together, if the author is really alluding to a typical case of the latter disease.

As a guide to the treatment of the normal puerperium the book is a good one but when the author discusses other matters he is not so trustworthy.

Medical Diagnosis: A Manual of Clinical Methods for Practitioners and Students. By J. J. GRAHAM BROWN, M.D. Edin., F.R.C.P. Edin., F.R.S. Edin., Assistant Physician, Royal Infirmary of Edinburgh; and W. T. RITCHIE, M.D. Edin., F.R.C.P. Edin., F.R.S. Edin., Clinical Assistant Pathologist, Royal Infirmary of Edinburgh. Fifth edition, greatly enlarged and revised to date, with 200 illustrations and eight full-page plates. Edinburgh and London: William Green and Sons. 1906. Pp. xvi-508. Price 8s. net.

THE importance of a knowledge of clinical methods is demonstrated by the increasing attention devoted to them in the medical curriculum, and by the appearance of numerous text-books and manuals dealing with what is frequently denoted as clinical research. The important advances which have within recent years been made in the methods for the microscopical examination of the blood, for the study of the various body fluids and excreta, and for their chemical investigation render it essential that any book on the subject shall be kept approximately up to date. In the book before us, which has now reached its fifth edition, an intelligible and practical account of many of the recent methods of investigation has been included, which justifies the authors' claims to have brought the book in line with present knowledge.

After an introductory chapter on the general aspect, condition, and circumstances of a patient, the various systems of the body are separately considered. In connexion with each the ordinary routine investigation is given, including that of the ordinary symptoms and subjective phenomena. The various physical signs are then described and their demonstration by the methods of inspection, palpation, percussion, auscultation, and mensuration is indicated in so far as they are applicable. As a rule the descriptions of these physical signs are clear and are written in such terms as easily to be understood; in each case the indications are given, their diagnostic value is stated, and their limitations or fallacies are exposed. Further, in each section any special methods employed are described, such as instrumental or graphic records and the chemical and bacteriological investigation of fluids or excreta associated with that system. Among these special chapters we may mention that on the examination of the gastric contents in which the methods employed for the study of test meals are given and the value of the information derived therefrom is discussed, while the means for the investigation of vomit and faeces are added.

The chapter on the investigation of the blood is worthy of special commendation, for within a comparatively short compass a great deal of valuable practical information is compressed; it is, moreover, liberally illustrated both with diagrams and coloured plates. The numerous varieties of normal and abnormal blood corpuscles are very clearly described and portrayed. The descriptions of methods of preparing and staining films for differential blood counts and for demonstrating parasites are succinct and practical. A short illustrated paragraph is added on the cryoscopy of the blood and an account is given of the method of working with Zikel's cryoscope which is sufficient to enable that instrument to be used. The account of the spectroscopic investigation of some of the derivatives of the blood pigment might with advantage have been a little more detailed in view of their importance.

In the section dealing with the circulatory system the description given of graphic clinical methods is good and we are glad to see that the excellent work of Dr. J. Mackenzie

of Burnley is recognised and his apparatus described. The diagrams of pulse tracings and of the various forms of irregularity of the pulse are good and the phenomena of heart block and extra systole are discussed.

In the investigation of the respiratory system an apparatus, the perigraph, devised by one of the authors, appears to give more accurately information usually obtained by the cyrtometer. The routine methods of urinary investigation are described in detail and the various crystals, deposits, and parasites found in the urine are figured.

In connexion with the nervous system, the elucidation of its various functions and their derangement is worked out in detail and much of the newer work on these subjects is incorporated, including Dr. H. Head's views on deep, protopathic, and epicritic sensibility. In the chapter dealing with the visual functions the space devoted to a consideration of colour vision is hardly commensurate with its importance. The last two chapters are devoted to clinical bacteriology and cyto-diagnosis and are among the best in the book. The former includes accounts of the more common pathogenic organisms and their separation from the body and also of the investigation of the agglutinating and opsonic reactions. The chapter on cyto-diagnosis affords a useful summary of the more important facts at present known.

The book as a whole is eminently practical and one which we can cordially recommend to the student in the wards and to the practitioner who wishes to keep abreast of the modern advances in diagnostic methods.

Prevalent Diseases of the Eye: a Reference Handbook, especially adapted to the Needs of the General Practitioner and the Medical Student. By SAMUEL THEOBALD, M.D., Clinical Professor of Ophthalmology and Otolaryngology in the Johns Hopkins University, &c. With 219 illustrations and ten coloured plates. London and Philadelphia: W. B. Saunders Company. 1906. Pp. 551. Price 19s. net.

Professor Theobald does not consider that the ordinary treatises upon diseases of the eye, though ostensibly written for the general practitioner and the medical student, are in reality suited to their needs. He thinks that a treatise designed to meet the requirements of general practitioners must take into account the fact that they are, as a rule, unskilled in the use of the ophthalmoscope and possess neither the experience nor the necessary paraphernalia to make trustworthy tests of refractive errors, of muscular anomalies, or of visual fields. We find ourselves largely in agreement with the remarks contained in the author's preface. We think that the average medical student should confine himself to the study and diagnosis of the commoner ailments affecting the eyes, paying special attention to the grouping of cases into those which he may consider himself justified in treating unaided and those which he should hand over to the ophthalmic surgeon. Amongst the latter we include the correction of errors of refraction and muscular balance which cannot be mastered by the average medical student in the time and with the opportunities at his disposal. We do not think, however, that any one book can be devised which will satisfactorily meet the requirements of the medical student and of the practitioner whose education in ophthalmology has been neglected. Whilst the medical student should not consider himself qualified to correct refractions or to do ophthalmic operations, he ought to possess a sound knowledge of the principles which guide the skilled ophthalmologist and of the technique which he employs. A book written for the general practitioner who is unskilled in the use of the ophthalmoscope must of necessity be an unsatisfactory production both to the author and to the reader.

In so far as Professor Theobald has carried out his scheme he has produced an emasculated text-book but fortunately for the value of his work he has not adhered very strictly to

the principles laid down in his preface. Hence we find that more than a quarter of the text is devoted to diseases of the choroid, retina, and optic nerve, with their ophthalmoscopic features, to anomalies of refraction and accommodation, and to muscular anomalies. The work is, indeed, a fairly satisfactory text-book of diseases of the eye, marred, rather than improved, by the limitations set upon himself by the author. Detailed investigation of the material reveals many statements with which it is impossible to agree but a large proportion of these are the expression of the author's individual opinion. This is notably the case in dealing with lacrymal obstruction, where the use of giant probes is strongly advocated. It is not to be expected that a pioneer in this mode of treatment would forego advocating his method, though to those who are accustomed to other methods he condemns it by stating that "the treatment frequently extends over a period of eight or ten months, but the active treatment, involving the frequent probings, is comprised within as many weeks."

Without desiring to detract from the general utility of the book we may point out a few statements which appear to us to be inaccurate or to require modification. Stress is laid upon the importance of distinguishing phlyctenular from catarrhal conjunctivitis, because the treatment for the latter is deleterious in the former. Considering that the two conditions are combined in the great majority of hospital cases the advice loses its point; moreover, we do not agree that atropine is indicated in phlyctenular conjunctivitis when the cornea is not involved. We do not agree that care should be taken not to perforate the cornea in canterising for conical cornea; in our experience the operation fails unless the cornea is perforated, though, of course, the dangers of the treatment are much increased. "Serous" iritis is said to be rarely a binocular affection, and sympathetic ophthalmia an occasional result of neglected iritis. In discussing the maturity of senile cataract no mention is made of the iris shadow; the advice is given to operate on mature unilateral cataract, and Förster's method of artificial maturation is advocated.

The author's knowledge of the pathology of ocular diseases appears to be faulty. He wisely avoids making more reference to this aspect of the subject than is absolutely necessary. As is often the case in such circumstances, he shows a marked penchant for doubtful theories. Insufficiency of the internal rectus is regarded as an important factor in the causation of pterygium. Iritis, cyclitis, and so on, are attributed to "an influence transmitted through sympathetic or 'trophic' nerves, which is frequently reflex in character and is probably dependent upon structural changes in grey nerve matter, either in the cerebral ganglia themselves or in the ganglia connected with the fifth nerve, or both," undue importance being attached to hypothetical lesions of the ophthalmic ganglion. Detachment of the retina, which is one of the most obscure problems of pathology, is regarded as requiring no "elaborate and far-fetched theories" for its explanation. Errors of refraction and muscular anomalies are looked upon as important factors in the etiology of cataract, glaucoma, choroido-retinitis, and so on.

The book is well printed. The illustrations are numerous; they are mostly borrowed from well-known sources and many lose much by the absence of the colours used in the originals. There is an excellent index.

Sanitary Engineering with Respect to Water-Supply and Sewage Disposal. By LEVESON FRANÇOIS VERNON-HARCOURT, M.A., M.Inst.C.E. Longmans' Civil Engineering Series. 1907. Price 14s. net.

THIS is not only a useful book of reference for students, but it is written in a form suitable for such non-technical readers as are interested in the subjects dealt with. The author gives a rapid though well-digested survey of the

whole question. From the collection of the water at its original source it is followed through the several stages of storage, transit, filtration, and distribution, and afterwards during its removal, subsequent purification, and disposal—in fact, it is only lost sight of during the brief period of its passage through human or other organisms. The value of the book is increased by the full index and abundant illustrations. Certainly a good deal of detail might have been added which would have increased its value as a text-book, at the cost, however, of rendering it less acceptable to many readers.

The first section on water-supply occupies the major part of the volume; the several sources and the methods employed to utilise them are treated of much in the usual order—viz., rainfall, springs, deep and shallow wells, mountain streams, rivers and lakes. There is a chapter on well-boring, illustrating the tools used for the purpose, which is interesting. Detailed descriptions are given of most of the large engineering works for impounding water in various parts of the world and the known defects and advantages of their construction are discussed. The descriptions given of such works existing in our own country, together with the geological sections and maps of rainfall, should prove useful to very many engaged in local sanitary work. One point very often lost sight of by authors of similar works is the possible pollution of long mains by the water passing through them. This is dealt with in the case of the 18½ miles of main from Lake Vyrnwy to Oswestry for the supply of Liverpool.

In reading this book we are struck by the extreme simplicity in conception of many of these stupendous engineering works. Mr. Vernon-Harcourt tells us in the preface that the compilation of the book occupied his attention over a period of five years. This can well be understood; only those who have attempted a similar task, even in a small way, can appreciate the amount of trouble attending the production of such a work and in avoiding innumerable side issues in order to restrain it within moderate dimensions. Space forbids us to follow in detail the description of the various fittings, reservoirs, filter beds, mains, and meters.

In the section devoted to house fittings brevity is the predominant feature but in the short space allotted to them we notice that the following points are not in accordance with the present practice. The ventilating pipe to the trap in illustration of the sink (Fig. 204) should not have been omitted, neither is it desirable to have the gully fixed, as is shown, so close to the wall. The form of the Dip grease trap (Fig. 206) is a revival of one long since discarded owing to the accumulation of grease in the corners which renders it very objectionable. Again, the addition of a syphon trap on the outlet, in the absence of any air inlet between the two traps, would soon lead to trouble. The long neck to the rain-water gully at the upper end of the drain (Fig. 210) is also not a thing to imitate. A quicker fall than is shown at Fig. 212 to the bottom channel of the intercepting chamber greatly helps to clear the syphon trap and to prevent stoppage. The water seal as shown to the syphon is very insufficient. With regard to refuse destructors, though these have proved a boon to our big cities and large towns, it may be open to question whether they are not unnecessary and wasteful in rural districts. In describing certain sewers in Paris, the author says "they are sufficiently commodious to accommodate gas and water pipes suspended on side brackets near the top, or in case of large water conduits on slender columns." This is indeed making extremes meet; a little less of the *entente cordiale* in the matter of sewage and drinking water seems desirable. The frequent repairs and alterations necessary to these pipes cannot be carried out with the minimum risk of contamination possible amidst more favourable surroundings. The

description of the outfall sewers at Barking and Crossness into which the sewage has to be lifted by pumping suggests the awful condition into which London would be thrown in the event of a hostile fleet ever succeeding in entering the Thames and demolishing the pumping stations. The descriptions of the various systems of sewage disposal are on the well-known lines familiar to most of our readers.

The book is, in the main, an excellent one considered as an epitome of some of the best that has been written on a large and difficult subject but the individuality of the author is rather lost in the editor; with a few exceptions we look in vain for new ideas or for practice discussed from a fresh standpoint. We can, however, strongly recommend the book to medical officers of health as placing the whole subject before them in a concise form.

Nasal Sinus Surgery, with Operations on Nose and Throat. By BEAMAN DOUGLASS, M.D., Professor of Diseases of the Nose and Throat in the New York Post-Graduate Medical School and Hospital. Illustrated with 68 full-page half-tone and coloured plates, including nearly 100 figures. Philadelphia: F. A. Davis Company, 1906. Royal octavo, pp. 256. Bound in extra cloth, price \$2.50 net.

THE first chapter of this work is devoted to a general anatomical review of the nose. The second chapter is devoted largely to the surgery of the frontal sinus. The operations on the frontal sinus itself are very briefly described and would be hardly sufficiently explicit for the novice. The third chapter deals with the ethmoidal sinuses. In this chapter the excellent work of Laek obtains no recognition and we may recommend Dr. Douglass to include a description of it in his next edition. Descriptions of the operations on the antrum follow next and here, again, we may remark upon the absence of any description of the more complete operative procedures on its inner wall. A description of the sphenoidal sinus and its surgery completes the work on the sinuses. The sixth chapter deals with deflections of the nasal septum, operations for nasal deformities, and the injection of paraffin. We note that the submucous resection, which is described in what might be termed a casual manner, gives little indication of the difficulties so frequently met with, nor any description of the necessary instruments, particularly Barranger's resection knife. In the description of the operative methods any reference to the more recent methods of cold paraffin injection is omitted. We are informed on page 224 that in England the operation of removal of the posterior ends of the turbinates is performed by means of a spokeshave instrument or a sharp ringed curette and that this method is mentioned only to be condemned. We quite agree with the condemnation but are glad to say that, to the best of our knowledge, such an operation is not performed in England. The final chapter briefly describes laryngeal and tracheal operations.

LIBRARY TABLE.

A Health Reader. By O. E. SHILLY, M.D. Cantab., Consulting Medical Officer, Halleybury College, and E. STENHOUSE, B.Sc., Associate of the Royal College of Science. Book I. London: Macmillan and Co., 1906. Pp. 160. Price 1s.—From this little book young people may learn the chief facts about the human body and the uses of the different parts of it. As the authors write, much of the pain and trouble in the world could be prevented if people would only learn how to treat their bodies properly. The book is divided into 30 lessons; the subject matter of each is well arranged and simply expressed. The final chapter deals with "Good and Bad Habits." It is just as easy to form good habits as it is to form bad ones. The collaborators not only draw attention to bad habits which harm or annoy others

but to the kind of bad habit which does no one else any harm but still prevents a child from becoming strong and healthy. Habits of this kind are, smoking, breathing through the open mouth, stooping over books or work, and slouching when walking or standing. The authors state that "carelessness in talking leads to the shameful habit of telling lies, and it weakens the brain." The little book, which is illustrated, is what it pretends to be and can, only do good to those who read it.

Cancer: Its Treatment by Modern Methods. Being the Bradshaw Lecture for 1906. By EDMUND OWEN, Senior Vice-President of the Royal College of Surgeons of England. London: Baillière, Tindall, and Cox, 1907. Pp. 31. Price 1s.—Mr. Owen has published this lecture because it puts the case in a straightforward way, which is much needed at present. He reminds us that the treatment of cancer "is unfortunately not the same thing as cure, and that the most effectual treatment for cancer, no matter how small it may be, is still removal by the knife." We published the lecture in full so that our readers know Mr. Owen's views, which are practical but not final. One fact of importance obtained in the research laboratories in the course of inoculation experiments upon mice is that, every now and then, a mouse which has been infected with cancer triumphs over the disease and at last gets entirely free from it. The same thing sometimes occurs in the human subject but too rarely to form a ground for expecting such a result in any case or group of cases. Mr. Owen feels sure that the ultimate victory over cancer will not be solely by the knife. But whatever the great curative method may eventually prove to be the knife will, in all probability, still be needed for the removal of the primary lesion. The lecture is most interesting and will, no doubt, be widely read.

Die Topographie des Lymphgefässapparates des Kopfes und des Halses in ihrer Bedeutung für die Chirurgie. (The Topography of the Lymphatic Apparatus of the Head and Neck in its Relation to Surgery.) By Dr. AUGUST MOST, Breslau. With 11 plates. Berlin: August Hirschwald, 1906. Pp. 133. Price 9 marks.—Dr. Most's book forms a useful addition to the literature of the lymphatic system in man. The recent publication of several works on this subject affords some indication of the increasing attention which is being paid to this department of human anatomy, chiefly owing to the demands of surgery. Of the more recent works, Mr. Cecil H. Leaf's translation of Professor Poirier's masterly treatise is perhaps the best known to English readers. So far as pure anatomy is concerned, Dr. Most follows the usual lines, describing first the general arrangement of the lymph glands of the head and neck, and in succeeding chapters considering the lymphatics of the integuments and superficial structures, of the salivary glands, and of the various mucous surfaces. The clinical and operative bearings of the subject receive a due share of the author's attention and in this respect the book ranks rather with applied than with purely descriptive anatomy. There are 11 plates as well as two figures in the text. The lymphatic vessels are depicted as they appear in young subjects and the illustrations convey a clear idea of the course of the lymphatics from the eyelids, lips, nasal fossae, auricles, and other parts.

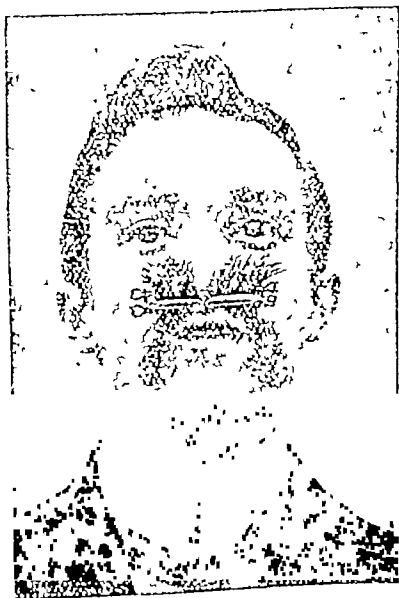
The Proceedings of the Anatomical and Anthropological Society of the University of Aberdeen for 1904-05. Aberdeen University Press, Limited.—These Proceedings are full of interest. From a purely anatomical point of view a record of an investigation of the Mode of Development of the Lower Jaw in Man will well repay perusal. Dr. Alexander Low, who carried out the research, concludes that each half of the mandible is developed in membrane as a single skeletal element—the dentary and

that the so-called splenial element is simply an extension of this. He also states that Meckel's cartilage becomes ossified and incorporated only with that part of the lower jaw which is below and inside the mesial and lateral incisor teeth. Accessory cartilaginous nuclei appear for the condylar and coronoid processes, but not, in man, for the angle. Professor R. W. Reid, the President of the society, contributes some Notes on a Mesial Sagittal Section of a Female Subject. In the section the spinal cord is compressed antero-posteriorly and laterally by a mass of gliomatous tissue which extends throughout the whole length of the spinal canal, is attached to the pia mater, and is invested by the dura mater. Professor Reid suggests that this may be an attempt at duplication of the cord but remarks that it also resembles certain cases which are described as diffuse sarcoma of the pia mater. The Proceedings contain a large amount of anthropological material. Papers are contributed by Mr. D. Horn, B.A., of Queensland on the People of the New Hebrides; by Mr. F. S. Maxwell of Sierra Leone on Hausaland and its Inhabitants; by Mr. George Moir, M.R.C.V.S., on the Natives of the Malay Peninsula; and by Captain A. W. Cook Young, I.M.S., on Tibet. In an interesting description of Four Short Clists from Aberdeenshire Dr. Low remarks that they furnish evidence of burial by inhumation as well as by incineration, the former being the earlier practice. He also corroborates Dr. T. H. Bryce's view that the beaker class of sepulchral urn, which is the oldest Bronze Age ceramic, is associated with a specific cranial type. We commend a paper by Mr. F. G. Parsons on the Anatomical Education of the Medical Student to the attention of all teachers of anatomy.

New Inventions.

MOUSTACHE CLIPS FOR LARYNGOSCOPY.

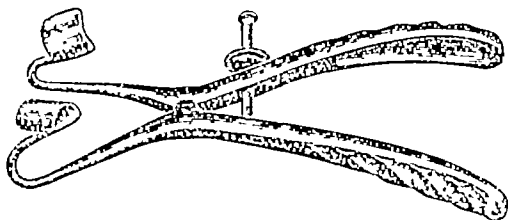
A PAIR of small spring forceps, such as are sold for the purpose of raising the ends of the moustache, are very useful for temporarily keeping up an overhanging moustache during an examination of the pharynx, larynx, or naso-pharynx. They must be applied horizontally, just on either side of the median line, with the fluted blade below and the handles



directed outwards as shown in the accompanying figure. They may be obtained of Messrs. Mayer and Metzger, 71, Great Portland-street, London, W. E. CRESSWELL BABER.

IMPROVED MOUTH GAG.

WHILE doing operations on the mouth I have been struck by the inadequacy of the gags in use. All that I have seen are liable to slip into the mouth, particularly if there are teeth in the upper jaw and corresponding vacancies in the lower and *vice versa*. To obviate this I have had a gag made which, as shown in the illustration, has two wide tooth-plates which fit firmly over either teeth or gum, as the case



may be, and when fixed in position by the screw it is, as far as my experience goes, impossible for it to slip into the mouth or even to move. The gag, which I have been using for nearly 18 months, was made for me by Messrs. White and Wright, 93, Renshaw-street, Liverpool. The plates measure $1\frac{1}{4}$ inches by $\frac{3}{4}$ inch and are covered with rubber.

H. LYLE, M.R.C.S. Eng.,

Senior Surgeon to the Cancer and Skin Hospital,
Liverpool.

THE USE OF ALCOHOLIC BEVERAGES.

WE have received the following document for publication in THE LANCET. As an expression of scientific opinion it deserves to be considered carefully by medical practitioners. The signatories are well-known members of the profession, and the importance of the questions involved, alike from the medical and the social point of view, can hardly be over-estimated.

"In view of the statements frequently made as to present medical opinion regarding alcohol and alcoholic beverages, we, the undersigned, think it desirable to issue the following short statement on the subject—a statement which we believe represents the opinions of the leading clinical teachers as well as of the great majority of medical practitioners.

"Recognising that, in prescribing alcohol, the requirements of the individual must be the governing rule, we are convinced of the correctness of the opinion so long and generally held, that in disease alcohol is a rapid and trustworthy restorative. In many cases it may be truly described as life-preserving, owing to its power to sustain cardiac and nervous energy, while protecting the wasting nitrogenous tissues.

"As an article of diet we hold that the universal belief of civilised mankind that the moderate use of alcoholic beverages is, for adults, usually beneficial, is amply justified.

"We deplore the evils arising from the abuse of alcoholic beverages. But it is obvious that there is nothing, however beneficial, which does not by excess become injurious."

T. MCCALL ANDERSON, M.D.,
Regius Professor of Medicine, University of Glasgow.

ALFRED G. BARRS.

WILLIAM H. BENNETT, K.C.V.O., F.R.C.S.

JAMES ORCHTON-BROWNE.

W. E. DIXON.

DYCE DUCKWORTH, M.D., LL.D.

THOMAS R. FRASER, M.D., F.R.S.

T. R. GLYNN.

W. R. GOWERS, M.D., F.R.S.

W. D. HALLIBURTON, M.D., LL.D., F.R.C.P.,
F.R.S.,
Professor of Physiology, King's College, London.

JONATHAN HUTCHINSON.

ROBERT HUTCHISON.

EDMUND OWEN, LL.D., F.R.C.S.

P. H. PYE-SMITH.

FRED. T. ROBERTS, M.D., B.Sc., F.R.C.P.

EDGCOMBE VENNING, F.R.C.S.

we have no data for comparison, no means of correctly estimating either the strength or the weakness of former generations. The evidence, in so far as it exists, is not wholly unfavourable, for the operation of the laws collectively known as the Factory Acts has tended greatly to improve the conditions of work and of life among large classes of operatives, more especially with regard to children. An important factor in the agitation by which the Factory Acts were produced was the publication, in 1840, of Mrs. TROLLOPE's novel, "Michael Armstrong, or the Factory Boy," which was abundantly illustrated by pictures showing the condition of factory "apprentices" at the time, pictures for which it would be difficult or impossible to find any living parallels in our own day, but which, when they appeared, were not accused of inaccuracy or exaggeration. It must be remembered, on the other hand, that the manufacturing population of that time bore a much smaller proportion to the total population than at present and that comparatively few of the "apprentices" would be likely to survive to maturity. Their condition, moreover, was flagrant and unmistakeable, whereas what we have now to dread is an insidious and general decline of strength and activity, rather than the crushing out of a small section of workers by evils of an overwhelming character. In order duly to protect ourselves and our descendants against possible and by no means problematical evils, we want to know what is the average physical standard of the country at successive years of life, and how far this standard is departed from in different localities, among different classes, and by the children of persons engaged in different occupations. We want to know how far it is departed from in the numerous rural districts intended by nature to be healthy but in which local "authorities" ordain that the causes of disease shall prevail unchecked. We want to compare the children of ten years old, in places of excessive infantile mortality, with those of the same age in places where the infantile mortality is kept within due bounds, in order that we may know to what extent the conditions which destroy infant life serve also to impair the health of the survivors. These questions are not only important, as admitted by the Prime Minister, but they are vital. Upon the accuracy of the replies given to them may depend the future of the Empire and, when compared to them, politicians and party leaders are of no more account than the dry leaves of autumn. When the strong man armed keepeth his house his goods are at peace; and strength is the only secure foundation of dominion.

The Clinical Significance of Iodophilia.

A PATHOLOGICAL and clinical study of the iodine reaction of the leucocytes affords the basis of an interesting and important paper by Dr. JOHN O. DA COSTA, jun., published in the *Proceedings of the Pathological Society of Philadelphia*, N.S., Vol. IX., p. 113, 1906. Since EHRLICH described the reaction in 1883 numerous observations have been made, yielding results which in many of the details are so conflicting as to render the test one rather of interest to the

scientific hematologist than of value to the clinician. Dr. DA COSTA's paper is especially noteworthy and important, not only from the fact that he has examined and correlated the work of previous investigators, but also from the careful critical study which he has made of his own results in the light of their observations. His summary of the general results of previous workers is "that the iodine reaction occurs with great constancy in conditions of toxæmia both bacterial and non-bacterial; that it signifies a lowered vitality of the iodophilous cells, and that its exact nature is not definitely understood. Of bacterial toxæmias productive of iodophilia, such conditions as pyogenic abscess, general sepsis, and many of the specific febrile infections are the underlying factors; while iodophilia, excited by non-bacterial or chemical toxæmia, may develop, for example, in diabetes mellitus, in leukaemia, in dyspnoea, in acetanilid poisoning, after ether narcosis, and perhaps in high-grade anæmias."

The nature of the iodophilous reaction may be briefly stated to be a peculiar susceptibility of the protoplasm of the leucocytes, notably the polymorphonuclear variety in certain abnormal conditions, to the action of iodine applied to the dried film which stains it a variable shade of brown, whereas the protoplasm of normal leucocytes in dried films assumes a pale lemon-yellow tint only. It is important, however, to note that a fresh moist film of normal blood exposed to iodine vapour before drying occurs shows the brown staining in a manner precisely similar to that in dried films of abnormal blood, which as suggested by WOLFF indicates that the iodophilous substance, presumably glycogen, is normally present in the circulating leucocytes of healthy blood, but in the drying of the film it is altered so as to be no longer demonstrable by iodine. Two theories have been propounded to explain these facts, the first that of WOLFF, which supposes that in the iodophilous leucocytes of disease the glycogen, normally so soluble that it is unaffected by iodine, has become abnormally insoluble by the action of some toxic influence and hence retains the power of staining with iodine in the dried film. The second theory, brought forward by SOROCHOWITZ, explains the reaction by supposing that normally the glycogen is rapidly converted into glucose by a ferment the action of which is hindered in toxic conditions, so that an accumulation of glycogen occurs in the protoplasm.

Dr. DA COSTA's observations were made upon 100 patients suffering from various acute infections and chronic disorders by examining films for the iodine reaction, while in 50 of the cases hæmoglobin estimations, and blood counts, both absolute and differential, were also made. In 50 of the cases giving positive reactions the percentage of iodophiles and of the different cells showing the reaction were calculated. Similar observations on 20 healthy subjects for purposes of control gave uniformly negative results. In the 100 cases of disease a positive reaction was obtained in 54, in all of which it was possible to refer the cause to pyogenic sepsis or chemical toxæmia. 26 of the patients examined were suffering from enteric fever—of these nine showed iodophilia; most of these were cases of severe infection, complicated in two instances by pneumonia and in others by local peritonitis, by free intestinal hæmorrhage, and by general septicæmia. The reaction cannot be said to have

any specific diagnostic value in this disease, since it may obviously occur under many diverse conditions. In 80 cases of purulent and septic conditions, such as appendicular abscess and gangrene, pelvic abscess, empyema of the gall-bladder, hepatic abscess, purulent peritonitis, and general septicæmia, the reaction was positive in all, its intensity apparently depending rather upon the virulence of the pathogenic organism than upon its identity or upon the extent of the associated suppuration. Iodophilia was found in two cases of catarrhal inflammation of the appendix, as well as in all the cases of purulent and gangrenous appendicitis, so that it does not serve to distinguish between the catarrhal and suppurative forms of the disease. In croupous pneumonia the seven cases tested all gave positive results during the height of the febrile period of the disease, and in no other disease, not even in grave streptococcus septicæmia, was so marked a reaction observed. After the crisis the iodophilia rapidly begins to disappear and does so completely within 48 hours in uncomplicated cases but persists when delayed resolution, pulmonary abscess, or empyema follows the pneumonia. Four cases of gonorrhœal arthritis gave a positive reaction to the iodine test and the reaction was observed in cases of acute pneumonic phthisis, carcinoma, pernicious anæmia, myelogenous leucæmia, diabetes mellitus, and amyloid liver, while negative results were obtained in rheumatic fever, endometritis, cholelithiasis, biliary cirrhosis, malarial splenomegaly, ovarian cyst, rickets, and acetanilid poisoning. From a careful critical and statistical analysis of his results Dr. DA COSTA derives the following general conclusions. In the dry blood film intracellular iodophilia indicates a form of leucocyte degeneration of toxic origin, due presumably to an abnormal affinity of the cell glycogen for iodine, the same reaction in the wet fresh blood being physiological. Extracellular masses in the plasma staining with iodine have apparently no pathological significance. The toxic factor in the production of the reaction may be readily demonstrable, as in pyogenic septicæmia and pneumonia, or it may be indefinite, as in pernicious anæmia and in cachectic states. The reaction is found to be restricted to the cytoplasm of the leucocytes, never affecting the nuclei. In 93 per cent. of all reactions the polymorphonuclear neutrophil leucocytes are implicated; in about 20 per cent. other cells, notably the lymphocytes and less commonly the myelocytes, while it is only in exceptional instances that iodophilous eosinophiles are noted. The number of cells staining with iodine is found to correspond roughly with the colour intensity of the reaction, 50 per cent. or more of iodophiles being found in a decided, and about 25 per cent. in a feeble, reaction. Iodophilia apparently shows no definite relation to leucocytosis, to anæmia, or to pyrexia. Dr. DA COSTA concludes that from a clinical standpoint iodophilia is often a helpful, though in no circumstances a diagnostic, sign, and specifically states that in differentiating various clinical entities extreme caution must be exercised in accepting it as a criterion, although he has found it of value as corroborative evidence in distinguishing both gonorrhœal arthritis and osteomyelitis from rheumatic fever, pure tuberculosis from tuberculosis with secondary pyogenic invasion, and amyloid liver from fatty cirrhotic liver.

The Workmen's Compensation Act, 1906.¹

IN THE LANCET of Jan. 28th we suggested that as the cost of a copy of the new Workmen's Compensation Act is but 4d. many of those most concerned would before long purchase and make themselves acquainted with its provisions. They may consider it with or without the assistance of a legal text-book and they will find their attention directed to the points of interest to medical men in the articles and letters which we have published. The questions which are likely to arise, but which are not provided for conclusively under the Act, can to some extent be predicted; but special prescience is hardly required in order to foretell that others will present themselves from time to time which have not been anticipated and with regard to which the interpretation of the law will be found to be doubtful. We note that the insurance companies are making full provision against this contingency for such as like to avail themselves of policies framed against all risks, and that those willing to incur the necessary cost can without any very large outlay protect themselves against the new liabilities now imposed upon them, as well as against those which existed before but which so seldom made themselves felt that insurance was not usually deemed necessary. Those possible instances also are not forgotten where the servant may become affected by a disablement not due to a cause for which his master or anyone else is liable, but for which a prudent and kind-hearted employer will often wish to provide if it is made easy for him to do so. The question of insurance is one for the serious consideration of all, but for medical men it is especially so because they are employers of persons whose risks are to some extent peculiar owing to the circumstances of the medical profession, and because also they are employers of persons whose work, dangerous or otherwise, like that of their masters, is carried on constantly without the limitation of regular hours of labour or of any fixed place of employment. The servant of the medical man, for instance, employed in keeping clean his surgery or his dispensary, is liable to accidents which may be rare but which differ from those occurring in other domestic service. The coachman of the lay employer has his hours of work which in some families imply night work, but which, as a rule, are of more or less fixed duration. The coachman of the medical man, particularly when his practice lies in a country district, never knows when his day's work will begin or end, and it takes him along rougher roads than that of the man who drives his master or his mistress merely for their pleasure.

We have before us a cheap but serviceable explanatory guide to the new Act, published by the *Daily Chronicle* at 1d., and we note some practical advice given on its last page in relation to insurance, where it recommends that care should be taken to see that the policy provides against every contingency possible in the master's service. It calls particular attention to extra servants casually employed and to the possible requirement in a policy of notice to the office of such

¹ See also THE LANCET, Oct. 15th, 1906, p. 1012; Nov. 10th, 1906, p. 1336; Dec. 8th, 1906, p. 1612; Jan. 12th, 1907, p. 112; Jan. 25th, 1907, p. 246.

employment before the insurance company will hold itself responsible. It also points out that the provisions of the policy as to change of servants are to be considered with care. We need only mention the locum-tenent, the assistant, and the nurse in order to show that the medical man is peculiarly liable to have in his employment persons with regard to whom a liability may possibly arise and may be disputed, whose employment may be temporary only, and whose salaries forming the basis upon which the employer's liability is calculated, are above the usual emoluments of the ordinary workman or domestic servant. It is with regard to the nurse again that questions may arise as to whether her employment is "casual," and also as to who may be her employer, and the same point will be mooted as to humbler workers whom the medical man, according to the exigencies of his profession and apart from his position as an ordinary citizen, may call in to perform various services. The accidents against which provision is to be made by insurance have hitherto not attracted much attention and are regarded as of infrequent occurrence, but we must wait until the privileges of the Act have been enjoyed for a few years before we are able to appreciate the effect of the compensation provided in increasing the occasions for seeking it. The schedule of the Act which lays down the scale and conditions of compensation contains more that is of special interest to the medical man in the exercise of his profession than does the body of the statute. We are already familiar with the claims of the workman against his master, all medical men having been brought into contact with such cases, but under the new Act every general practitioner will find himself now and again summoned either by the employer or the employed in the large class of domestic servants. Here accidents as a rule will not be serious and the medical man may frequently be reminded that "if the incapacity lasts less than two weeks no compensation shall be payable in respect of the first week," and we can foresee that where the period of incapacity has to be fixed according to the medical man's judgment he will often have a difficult task.

In various ways the medical profession finds itself expected to perform semi-judicial rather than healing functions under the new law, and we are confident that it will not fail to do so with honourable impartiality. The occasions may increase on which the medical man will be tempted "to take a side" involuntarily when forming and declaring his opinion, but the augmented powers of medical referees will bring disputed medical questions under the consideration of those qualified by their training to decide them. An instance of the medical referee's powers is contained in the fifteenth paragraph of the schedule referred to, which provides that "where no agreement can be come to between the employer and the workman as to whether or to what extent the incapacity of the workman is due to the accident, the provisions of this paragraph shall, subject to any regulations made by the Secretary of State, apply as if the question were a question as to the condition of the workman;" that is to say, this point, which in ordinary actions is regarded as one well within the competence of a judge or of a jury of laymen, is to be submitted to a medical referee whose certificate shall be conclusive upon the matter.

It is to be hoped that before July 1st, when the Act will come into force, and when, so far as medical referees are concerned, it will apply to accidents occurring before that date, the rules of the Home Office for regulating the proceedings of medical referees will have been long enough before the medical profession to be studied carefully and for attention to be called to any points in which, as may easily occur upon such occasions, they may be defective and may require amendment.

Annotations.

"Ne quid nimis."

THE HOT CROSS BUN.

DIETETICALLY considered the hot cross bun differs in only one regard, but perhaps an important one, from bread, inasmuch as the Good Friday bun contains a fair sprinkling of spice, generally in the shape of allspice or pimento. Otherwise the ingredients are the same and the mode of preparation is the same—that is to say, a dough is prepared, yeast is added, and the "sponge" is then cut up into buns and baked. The hot cross bun, in a word, is practically bread plus a condiment. The rôle of spices and condiments in food is important. They improve appetite and increase the digestive power by inducing a flow of digestive juice. They are, as a rule, therefore, of service to those who, from illness or other cause, have a dull appetite. The use of a condiment may almost be regarded as superfluous in the case of persons with vigorous appetite and sound digestion, while spices and sauces must be studiously excluded from the diet of any who are suffering from catarrh of the stomach or intestine, since, after all, condiments are in reality irritants. The custom of eating hot cross buns on Good Friday, which is, of course, a day nearing the end of a fasting season, may be regarded as having for its object, perhaps, the preparation for the feast day, or else the intensification of the discipline which the partial abstinence from food entails. To sharpen the appetite during a period of fasting is clearly calculated to make the ordeal of self-denial more severe. The spices would aggravate the craving for more food. Whether this was the original idea of the spiced bun for eating on Good Friday may be open to question, but such a view at all events suggests itself when we come to consider the part played by spices in dietetics, and it is a significant fact that spices, as a rule, are rare constituents of buns.

RECORDS OF SMOKE.

THE deleterious effects of coal smoke escaping into the atmosphere have often been referred to in our columns and the discharge of black smoke from a chimney has been made a statutory offence. The prosecution of offenders is, however, not infrequently difficult on account of conflicts in the evidence as to the density of the smoke emitted. Writing on this subject in the *Engineering Supplement* of the *Times* of March 20th, Mr. James Swinburne points out that the excellent smoke chart of the Institution of Civil Engineers is imperfect, because it is almost impossible to compare smoke seen against the sky with a shade on paper which is not only in close proximity to other darker and lighter shades but is not really comparable at all. He says that this difficulty may be overcome by having the smoke scale made on glass or transparent celluloid which can be held up in such a way that the smoke can be compared with the progressive series of tints forming the scale. These scales might be standardised so that different observers might have exactly similar tints before them, and a further

improvement would be to photograph the smoke scale together with the smoke which is to be tested. They then both receive the same treatment and the smoke on one print is compared not with the smoke on another print but with its own smoke scale. Thus, smoke on one print may be very light, the scale being very light too, so that the smoke corresponds with the scale at, say, 0.4, which means that the smoke stops four-tenths, or 40 per cent., of the light. On another print, taken by someone else at the same time, the smoke may look very dark, but the scale will look very dark too, so that the smoke will still correspond with the part of the scale marked 0.4. Mr. Swinburne further describes how a smoke scale, with its varying tints, is prepared on a photographic plate and how different smoke scales can, for purposes of comparison, be calibrated in terms of their light-stopping power. He says that for photographing a column of smoke which is to be tested a pocket quarter-plate camera does quite well, its only drawback being that the shutter has only one speed, which will probably be too fast for smoke photography.

INFANTILE MORTALITY IN SCARBOROUGH.

It is much to the credit of the town council of Scarborough that it has preserved careful records of the mortality occurring in that beautiful and fashionable seaside resort for each week of the last 30 years. The result is that the present medical officer of health, Dr. John Knight, has recently been able to present to the council an analysis of the infantile mortality there prevailing in each year from 1876 to 1905. Dr. Knight has brought to his task a marked degree of administrative knowledge. We have nothing but commendation for the telling way in which he has marshalled his data or for the straightforward manner in which he has ventured to point out to his authority the serious fact, for which it is alone responsible, that in spite of the great natural advantage of its seaside position Scarborough still suffers its infant population to die almost as rapidly as does the infant population of England and Wales generally, including, of course, the vast aggregate of industrial communities which possess none of the advantages conferred by proximity to the sea. The report is replete with tables and with well-constructed diagrams, and the accompanying letterpress furnishes an instructive commentary on the facts thus graphically represented. We note that the tables of infantile mortality are drawn up according to the new forms recently issued by the Local Government Board and are identical with the useful series of tables on infantile mortality contained in the last annual report of the Registrar-General. Dr. Knight directs attention to the fact that although in the last 30 years there has been a steady fall in the mortality of other sections of the community, the infantile death-rate has, nevertheless, remained almost stationary. The various causes for this up-keep of infantile mortality in Scarborough are ably discussed and its incidence is shown on the successive weeks and months of the first year of infant life. It is, however, to the "recommendations" made by Dr. Knight for the reduction of the present excessive mortality that we desire particularly to direct attention. After stating his conviction that the complex problem of infantile mortality admits of solution only by attacking it from all sides—every agency for the prevention of disease, the protection of feebleness, and the promotion of health being called into play—he shows that the waste of infant life stands in close relation to the social condition of the parents, being greatest here, as elsewhere, among the poorest classes of the community. Two obvious improvements are indicated in the report as specially necessary in Scarborough at the present time: (1) the systematic reduction in number

and the ultimate abolition of the privy system; and (2) the more frequent removal and the more efficient disposal of house and street refuse. The pollution of the soil which is known to play an important part in the causation of infantile diarrhoea may be lessened by the prompt removal of excretal and other domestic refuse from amidst the homes of the people. Dr. Knight does not shrink from telling his authority plainly that both these measures are well within the competence of the corporation without seeking further powers from Parliament for that purpose. General measures, however, must be supplemented by action regarding the particular infant. And here it is obvious that before any procedure of this kind can be instituted the sanitary authority must become aware of the existence of the individual infant but in this respect the present law is defective. Not until the lapse of six weeks after the event need the birth of a child be registered, although one-third of the infantile deaths occur under the age of one month. As in these cases the birth and the death are registered at the same time, it follows that no control can at present be exercised over the lives of one-third of the infants dying within their first year. This defect in the law has been remedied in Huddersfield, and, we believe, in a few other towns, by a system of voluntary notification whereby intimation to the authorities of the occurrence of a birth is encouraged by the offer of a small fee for each notification within 48 hours of the event. This duplication, however, of methods for securing necessary information seems to us clumsy and unnecessary and we are glad to find, from the recent reports of the Registrar-General, that an amendment of the present arrangements for birth registration is now under his consideration. But the uselessness of even a prompt notification of births is clearly recognised by the Scarborough medical officer of health unless definite administrative action follows immediately on its receipt. Thus the minimum of such action would, in Dr. Knight's judgment, consist in the distribution to each person concerned of a card or leaflet containing hints on the feeding and rearing of infants. But as most of the waste of infant life depends on ignorance of parents the better plan would be the appointment of a lady health visitor, as in Manchester and some other towns, who would visit the mother and give directions for the welfare of her offspring and herself.

A NEW AIR PURIFIER.

We have received particulars of a new air purifier which has been applied with conspicuous success to the refrigerating room of a large brewery at Newark-on-Trent. It is suggested to us by Mr. Ernest Ringrose, L.R.C.P. Lond., M.R.C.S. Eng., that this method is eminently fitted for use if not in the wards of hospitals at least in the operating theatres. The Warwick air purifier (as the apparatus is called) consists of a large box containing metal trays which are as wide as the box but not so deep, so that one tray can be pushed to the back, leaving a small space in front leading to the tray below. The next tray is placed forward, leaving the vacant space at the back, and so on through a series of trays which, acting as baffles, compel the air to flow over a relatively large surface. At the inlet there is a small skeleton drawer fitted with a sheet of muslin which screens coarse particles out of the air. The metal trays contain a layer of glycerine sprinkled with a little powdered sulphite (presumably) of sodium. The glycerine arrests the organisms and the sulphite prevents their development. Actual experiments showed that the purifier removed on an average 99.5 per cent. of the organisms present in the air admitted from the outside, the only organisms which eventually got through being moulds. Neither yeasts nor bacteria appeared even on prolonged exposure in the refrigerating room.

A photograph showing three bottles containing wort gelatin has been submitted to us. No. 1 was exposed to the outside air on the east side of the premises and No. 2 to the outside air on the west side of the premises. No. 3 was exposed in the refrigerator room. Growth took place freely in No. 1 and No. 2, but No. 3 is practically free from any development. This is very clearly seen in the photograph. The apparatus stands about four feet high and is about three feet square and in section and contains 11 trays. In the experiment just cited 20,000 cubic feet of air were passed through this apparatus per hour and apparently only one organism per 500 cubic feet of air escaped the joint action of the glycerine and sulphite in the tray. Mr. Ringrose suggests that this air purifier would prove a valuable accessory to every hospital, so that the benefits to mankind which have been brought about by the labours of Lord Lister may in this way be enhanced.

DEATH CERTIFICATION.

THE Lord Chancellor on Friday last received a joint deputation from the London County Council and the Medical Legal Society which was introduced by Sir William J. Collins, M.P. Mr. H. T. Anstruther handed to the Lord Chancellor a report dealing with the necessity for obtaining the appointment of medical investigators who might make preliminary inquiries in cases where an inquest appeared desirable. Sir William Collins spoke upon the imperfections and the dangers of our present lax system of death certification and pointed out in how many cases the drawing up of a preliminary report in cases of suspected unnatural deaths was left to the unskilled coroners' officers. Mr. John Troutbeck, coroner for the South-Western District of London, supported these views. The Lord Chancellor, in reply, promised to give his most serious consideration to the matter, which he considered to be of real and great importance, and added that without loss of time he would investigate the facts personally. We can add our wishes to those of the members of the deputation that our present very haphazard and even dangerous system of death certification may soon be superseded by some better method.

INDUCTION OF LOCAL ANÆSTHESIA BY COCAINE CATAPHORESIS.

CATAPHORESIS, or the introduction of drugs into the system by electricity, is a method which promises much and is still in its infancy. In the *Journal of the American Medical Association* of Feb. 23rd Dr. D. T. Quigley has reported very satisfactory results from the induction of local anaesthesia by cocaine cataphoresis. He claims that under it half the operations of surgery could be performed with greater safety and less worry to both the surgeon and the patient. He has used the method for removal of tumours of the breast and epithelioma of the lip, herniotomy, removal of hæmorrhoids, and destruction of moles. It may be employed for any operation which does not involve the great cavities of the body or in which the field does not extend too far from the surface to be reached by cocaine. The technique is as follows. A piece of aseptic gauze is folded four times and cut of the size of the part to be operated on. The gauze is saturated with a solution composed of cocaine hydrochlorate, one and a half drachms, solution of adrenalin (1 in 1000), two drachms, in sterile water to 2 ounces. The adrenalin constricts the vessels and renders the operation almost bloodless, but secondary hæmorrhage occurs in about 1 case in 4. The gauze is covered with metal foil and connected with the positive pole of the battery. The circuit may be completed by the patient holding in his hand a wet sponge electrode connected with the negative pole, or better, a large pad

electrode may be attached to the skin by a bandage near the seat of operation. If the operation is on a limb the negative electrode may be attached on the opposite side to the positive one, and both may be held in position with the same bandage. But care must be taken that the skin between the poles is perfectly dry; otherwise the current will follow the wet surface and not pass through the skin. The time required is from 15 to 30 minutes and may be longer if a deep effect is necessary. Dr. Quigley has never observed any toxic effects from absorption of cocaine. A battery of 20 or 30 wet or dry cells should be used. A rheostat to control the current is useful but not necessary, as this may be accomplished by diminishing or increasing the number of cells. The current should be as strong as the patient can bear without discomfort; a milliamperemeter is unnecessary. After the current is turned on the edge of the foil-covered gauze should be turned every five minutes and fresh solution applied, as the gauze should be well saturated to get the best effect. In operating on hæmorrhoids the gauze should be applied to a cone-shaped metal electrode large enough to have a dilating effect on the sphincter when applied to the anus. This electrode should have a wooden or hard rubber handle and be pressed firmly into the anus by an assistant. In from 20 to 30 minutes the sphincter will be considerably relaxed and the hæmorrhoidal area anæmic and numb. If the hæmorrhoids are large and pendulous the base may be grasped gently between the blades of a forceps, each blade being wrapped with gauze saturated with the solution. The handle of the forceps is then attached to the positive pole and the circuit is completed. In a few minutes the tumour can be cut off without pain. In operating on navi the area should be anaesthetised as described. Then the navi is transfixed just below the surface with straight needles about one thirty-second of an inch apart. A fine wire is threaded through the eyes of the needles and attached to the negative pole. The current is passed until the spaces between the needles look seared and pale. This destroys the navus and does not leave a scar. The same method may be used for moles but any large hairs in them must be first destroyed by the electric needle attached to the negative pole. This method of inducing local anaesthesia is preferable, Dr. Quigley considers, to Schleich's infiltration method because it is entirely painless, does not involve distension of the tissues, covers a wide area if necessary, and so far has not produced toxic effects. Dr. Quigley does not state, however, the number of cases in which the method has been employed. The anaesthesia lasts over an hour, so that ample time for the operation is afforded.

THE PHARMACOLOGY OF AN ALKALOID FOUND IN FRESH VALERIAN JUICE.

IN THE LANCET of May 20th, 1905, p. 1367, reference was made to the greater activity of fresh valerian juice as compared with the ordinary galenical preparations obtained from dried valerian root. We learn from the *Comptes Rendus* of Jan. 21st that the fresh juice has been examined by M. J. Obevalier with the result that it has been proved to contain an alkaloid and a glucoside, together with some resinous matter. A pharmacological investigation has shown that the special action of the fresh juice is due to the presence of the alkaloid and the glucoside, which are unstable bodies and undergo decomposition during the drying of the roots and the manufacture of the galenical preparations of valerian. As the alkaloid is present in the plant to the extent of only 0.015 per cent. its chemical identification will have to be delayed until sufficient is obtained for a complete examination. The pharmacological investigation of the alkaloid was conducted on dogs. It was found to exert an energetic action upon the bulb and the

medulla oblongata. The predominating action of the alkaloid is depressing and paralysing and is purely central. The depressing action is not confined to the bulb but extends along the whole of the cerebro-spinal axis. The diminution of the excitability of the cerebral centres, following the administration of the alkaloid, points to the value of preparations of fresh valerian root in the treatment of hysteria and especially of epilepsy.

CELEBRATION OF LORD LISTER'S EIGHTIETH BIRTHDAY.

A MEETING of the committee appointed to make a fitting recognition of this anniversary will be held at the Royal College of Surgeons of England, Lincoln's Inn Fields, on April 4th, at 5 o'clock in the afternoon. The business will be: 1. To consider the form and method of republication of Lord Lister's scientific papers. 2. To appoint an editorial committee to undertake the same. 3. To send greetings to Lord Lister on his birthday, April 5th, and to acquaint him with the proposals of the committee. Any communications on the subject should be addressed to Dr. Charles J. Martin, F.R.S., secretary (*pro tem.*) of the committee, at the Lister Institute, Chelsea Gardens, London, S.W.

THE "WHITE LINE" AS A SYMPTOM OF DISEASE OF THE SUPRARENAL CAPSULES.

At a meeting of the Société Médicale des Hôpitaux of Paris on Feb. 8th M. Siredey and M. O. Tinel called attention to the phenomenon known to French clinicians as the "white line" in the diagnosis of disease of the suprarenal capsules. This phenomenon was first described by M. Sergent in 1903.¹ It is the converse of the meningeal streak. Like the latter, it is produced by drawing the finger-nail across the skin of the patient's abdomen. After a period, of from 30 to 60 seconds a white line appears which lasts from two to five minutes. M. Sergent has found it in Addison's disease and in a variety of conditions—the specific fevers, septicæmia, influenza, poisoning by corrosive sublimate, exhaustion from over-exertion—which were all marked by low arterial tension. He thinks that the low tension is due to some alteration in the cells of the suprarenal capsules, a conclusion which was confirmed by the fact that the administration of suprarenal extract was followed by the disappearance of both the "white line" and the low tension. He therefore regarded the "white line" as a symptom of suprarenal insufficiency and insisted upon its importance in the diagnosis of all affections of the suprarenal capsules. His observations have been confirmed by other French writers. At the meeting mentioned above M. Siredey and M. Tinel reported an interesting case of tuberculous meningitis in which the meningeal streak was replaced by the "white line" in consequence of involvement in the disease of the suprarenal capsules. A man, aged 47 years, was taken to hospital comatose. The history, given by his son, was vague. It appeared that the patient had suffered from pleurisy 10 months ago, from which he rapidly recovered. For some weeks he had shown signs of weakness, and three days before admission he was found unconscious. On admission he was in a state of profound coma, with carphology and subultus tendinum. Trismus, rigidity of the neck, and Kernig's sign were found. The pulse was small and the respiration was irregular. Examination of the chest showed generalised bronchitic râles and consolidation at the apices. On attempting to obtain the meningeal streak a thin rose line was produced, which rapidly became white and then slowly broadened, so that after half a minute it was from one to two

centimetres in breadth; it disappeared after two or three minutes. This phenomenon caused suprarenal disease to be suspected. With Potain's sphygmomanometer the vascular tension was found to be only 12. There was no pigmentation of the skin nor were spots present on the mucous membranes. Death occurred on the following day. The necropsy showed meningeal, pulmonary, and peritoneal miliary tuberculosis. Neither the kidneys nor the liver showed any tubercles. But the suprarenal capsules contained large tubercles. The left capsule contained three tubercles of the size of a pea and several smaller ones; the right capsule was less involved. Thus M. Sergent's conclusion as to the value of the "white line" as a symptom of suprarenal disease was confirmed.¹ In the discussion which followed M. Sergent referred to the case of a girl who presented symptoms of meningitis. He could not obtain the meningeal streak but after some seconds a white line appeared which lasted two or three minutes. The patient died and the necropsy showed absence of disease of the meninges but complete caseation of the suprarenal capsules. In connexion with this case M. Sergent has described a pseudo-meningeal syndrome due to suprarenal insufficiency in which the "white line" is present. As to the mechanism of the production of the "white line" it appears to be a reflex spasm of the capillaries provoked in conditions of low vascular tension and vaso-dilatation.

WHOLE MEAL v. WHITE BREAD.

The suggestion of the Bread and Food Reform League that "most people can digest the whole of the wheat grain; if it be ground of a uniform very fine quality of properly selected wheat," would appear to receive endorsement, in some experimental work on the digestibility of foods which has been undertaken by Professor Snyder on behalf of the United States Department of Agriculture. In a pamphlet written by Miss May Yates, the honorary secretary of the league, the chief points of this inquiry are brought out but the general result appears to be that it is essential that the whole meal should be ground and re-ground until it will all pass through a fine sieve and thus that a mechanical condition should be obtained which will enable the gastric juice to act on all the nutrients. According to Professor Snyder, there is more protein, pound for pound, in entire wheat than in patent flour, and therefore if in these experiments the body secured less protein and energy from the coarse flour than from the fine flour it was simply because the meal was not ground fine enough. An experiment showed that whereas from 2463 grammes of patent white bread (containing 133.2 grammes of protein with a loss of 26.9 grammes of protein) only 106.3 grammes of protein were utilised, while with a consumption of 1558 grammes of bread made from flour with the addition of 14 per cent. of bran (containing 148 grammes of protein, with a loss of 14.9 grammes) there were assimilated 133.1 grammes of protein. In other words, a consumption of more white bread amounted to an appropriation of 26.8 grammes less of protein than from a smaller quantity of bread with 14 per cent. of finely ground bran. In addition to this, it is well to bear in mind the fact that with the rejection of the bran an enormous loss of valuable mineral material is entailed. Thus there is nearly double the amount of lime salts in whole wheat meal than there is in fine white flour, and one pound of whole wheat meal has 119 grains of mineral matter and 59.1 grains of phosphoric acid, whilst one pound of white flour has only 49 grains of mineral matter and 21.3 grains of phosphoric acid. This subject has, of course, been very widely debated and it seems to us that there is something to be said on both sides. There can be little doubt that the conclusion hitherto reached that the defective absorption of

¹ Presse Médicale, Nov. 25th.

wholemeal bread is due to the large amount of cellulose or branny particles which it contains is correct. The contention is probably also correct that this defective absorption is to be attributed largely to incomplete grinding and that the absorption would be greater if the flour was reduced to a very finely divided powder. Even, however, when the branny particles are reduced to a fine powder careful experiments have shown that bran is never so easily absorbed as flour.

THE MANUFACTURE OF ELECTROLYTIC DISINFECTING FLUID AT POPLAR.

THE electrolytic apparatus which was installed at Poplar in February, 1906, under the direction of Mr. F. W. Alexander, the medical officer of health of that borough, for the production of disinfecting fluid has now been in going order for over a year and a copy of the balance sheet, representing the cost of the manufacture, has reached us. Mr. Alexander states that in comparing the expenditure of the year 1906 with that of 1905 it will be seen that there has been a saving of £265, and if the sum of £30 paid to the electricity department as rent and supervision be omitted from the account there has been brought about a saving of nearly £300 compared with the cost of carbolic disinfectants, and this amount does not include any charge for the quantity furnished to the guardians, as the fluid was supplied to them gratis. The initial outlay amounted to about £583. Mr. Alexander considers that "the step initiated has proved itself overwhelmingly satisfactory from every point of view, particularly that of the public health of the district during the period for which the plant has been at work." The annual notification rate per 1000 living in the borough was 6.2 against that of 7.5 for London for the year 1906, the death-rate of the borough being 17.5 per 1000 living. It may be added that the fluid prepared in October, 1906, by the improved method has remained constant in strength as regards available chlorine up to March, 1907.

GROCCO'S SIGN IN THE DIAGNOSIS OF PLEURAL EFFUSION.

IN 1902 Grocco of Florence described a new sign of pleural effusion—a paravertebral triangle of dulness on the opposite side. He found that when percussion is performed from above downwards along the vertebral spines while the patient is in the sitting position dulness, at first relative and then absolute, is obtained. Similarly, on percussing downwards on the healthy side in lines parallel to the spine a paravertebral triangle of dulness may be defined. One side of the triangle is represented by the spines of the vertebrae, the base by the line of the lower border of thoracic resonance for a distance of two, three, or more centimetres from the spine, and the outer side by a line rising from the outer extremity of the base obliquely to unite at an acute angle with the median line at the upper limit of dulness. By radiographing a cadaver in which the chest on one side had been filled with a solution of acetate of lead Grocco showed that the shadow of the solution extended sufficiently past the middle line to account for the triangle of dulness. He claimed that this sign was of value in distinguishing pleural effusion from pulmonary consolidation. This has been confirmed by many observers. An important article on the subject, by Dr. W. S. Thayer and Dr. M. Fabian, has been contributed to the *American Journal of the Medical Sciences* for January. In 30 out of 32 cases of pleural effusion they clearly demonstrated a paravertebral triangle of dulness. In one of the remaining cases the effusion was small and the examination was rather hastily and imperfectly performed but a small indefinite area of dulness was found. In the other case the absence

of the paravertebral triangle was explained by the position of the exudation, which was an interlobar empyema. The sign may therefore be regarded as constant in cases in which there is free fluid in the pleural cavity. Dr. Thayer and Dr. Fabian also found that over the paravertebral triangle the respiratory murmur is often suppressed and similar to that heard over the effusion. Egophony or a nasal quality of the vocal resonance may also be heard. The sound produced by striking a coin on the front of the chest below the level of the effusion shows the same metallic ring over the triangle as over the effusion on the affected side. These signs may be so marked as to make possible the definition of the triangle by auscultation. When the patient lies on the affected side the triangle diminishes or disappears and when he assumes the erect posture or lies on the other side it returns. In three cases of encapsulated effusion the paravertebral triangle proved of diagnostic value. Thus, a man, aged 23 years, had a severe attack of typhoid fever. An area of absolute dulness was found below the angle of the right scapula with the patient lying on his left side. The dulness ended sharply at the posterior axillary line. Over the dull area vocal fremitus was diminished, respiration was distant and tubular, the respiratory murmur had a somewhat metallic quality, and the voice sounds were nasal. On the left side was a paravertebral triangle of dulness measuring eight by five and a half centimetres. Puncture of the dull area yielded purulent fluid. Operation showed an encapsulated empyema. In cases of pneumonia a small strip of dulness may be found along the spine on the opposite side but Dr. Thayer and Dr. Fabian were able to detect only once anything approaching a paravertebral triangle, and in this the dulness was not very definite and showed little or no alteration on change of posture.

THE INSANITARY CONDITION OF LONGTON.

A Local Government Board inquiry has been held recently at Stoke-upon-Trent to consider the question of the federation of the municipal boroughs of Stoke-upon-Trent and Longton and the urban district of Fenton into one county borough, when some remarkable evidence was given as to the insanitary condition of Longton. Dr. J. W. Dawes, the medical officer of health of this borough, said that the population was estimated at 36,797 and the number of houses at 7826. The birth-rate was 36.4 and the average death-rate for ten years was 22.4. The infant mortality in ten years gave a return of 228.7 per 1000 births. He considered that there had been great improvement in the sanitary condition of the town, but admitted that the death-rate and infantile mortality were both very high. From his evidence it appeared that property owners on the corporation had prevented the conversion of privies into water-closets. In 1903 he had to report on a well on the corporation sewage farm which was used in connexion with the dairy on the farm, from which milk was supplied to the inhabitants of the town. Nothing was done to remedy this state of things till 1906 when the waterworks supply was put in and he did not know whether or not the well was still in use. When questioned as to cowsheds within the borough he admitted that there was one registered for 19 cows where 38 were kept. In this case the air space was 420 cubic feet per cow and the sheds were dirty, dark, and badly ventilated, whilst the drainage was imperfect. He knew another cowshed registered for 22 cows where 42 were kept and where the air space was 300 cubic feet per cow. As to common lodging-houses there were two or three places used as common lodging-houses which were not registered, and he knew a lodging-house registered for 25 lodgers where three of the sleeping-rooms had no fireplace or substitute for

ventilation. Dr. George Reid, medical officer of health of the county of Stafford, said he could hardly find words to describe the condition of Longton from a sanitary point of view. He had inspected the common lodging-houses, slaughter-houses, and dairies and cowsheds and speaking generally he did not know any other town in Staffordshire even approaching Longton. He spoke of overflowing ashpits, badly paved yards, and defective and dirty cesspools and closets, and described one court containing 14 houses which were dilapidated, filthy, and badly drained, with foul privies six feet from the back doors of the houses. Longton had a refuse destructor but it was either not made use of or it was not capable of doing the work because of the overflowing condition of the ashpits and—where there were ashbins—the ashbins. He confirmed Dr. Dawes's statements as to the condition of cowsheds and lodging-houses. With regard to infantile mortality, for Stoke it was 170 per 1000 births, for Fenton 194, and for Longton 229, that being the average for the ten years 1896-1905. Some little time ago Longton appeared to have the largest infantile mortality in England and both this and the high death-rate must be due to a large extent to the insanitary condition of the town.

EPIDEMIC CEREBRO-SPINAL FEVER.

THE notifications of cerebro-spinal fever indicate a progressive extension of the disease throughout the country without exceptional prevalence in any fresh locality. A large number of sanitary authorities have now made the disease compulsorily notifiable. The public health committee of the London County Council announces that nine cases have been notified in London since March 12th, but one of them was eventually found to be a different disease. Cases have occurred at Horton, near Leek in Staffordshire, and at Bebside, near Blyth in Northumberland. In Glasgow the only information obtainable at present is that there were 102 cases under treatment on March 22nd. Cases have also occurred at Falkirk, at Leith, at Govan, and at Denbeath in Fifeshire. In Belfast there were 39 patients under treatment on March 22nd; 8 new cases were reported on March 25th, making since the commencement of the epidemic a total of 215 cases, among which there have been 115 deaths. On March 20th a case was discovered in the workhouse at Cork.

THE death is announced, in his seventy-first year, at Wiesbaden, of Professor Ernst von Bergmann, the eminent German surgeon. We hope to give an extended account of his career in a future issue.

THE Department of Public Health of Queensland, in a bulletin dated Feb. 9th, states that no further cases of plague have occurred in the New Farm area. 3 other cases, however, have been notified—viz., Case 20, a male, aged 20 years, who was attacked on Jan. 31st; Case 21, a female, aged 58 years, who was attacked on Jan. 30th and died on Feb. 4th; and Case 22, a male, aged 50 years, and attacked on Feb. 4th. A bulletin, dated Feb. 16th, reports 1 further case, No. 23, a male, aged 19 years, who was attacked on Feb. 7th. A case of plague is also reported from Ipswich—viz., a male, aged 35 years. The case was not reported till after the patient's death. As regards Port Douglas 6 fresh cases occurred during the week ending Feb. 9th but no further cases for the week ending Feb. 16th. As regards the Mauritius a telegram from the Governor received at the Colonial Office on March 22nd states that no cases of plague were reported during the week ended March 21st.

THE Thirty-sixth Congress of the German Surgical Society, the Sixth Congress of the German Society for Orthopaedic

Surgery, and the Third Congress of the German Roentgen Society will all meet in Langenbeck House, Berlin, in the beginning of next week.

AT an extraordinary Comitia of the Royal College of Physicians of London held on Monday last, March 25th, Sir Richard Douglas Powell was re-elected President.

THE SECOND INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.

UNDER the Presidency of the Lord Mayor a meeting was held at the Mansion House on March 20th to promote the interests of the forthcoming Congress on School Hygiene which is to be held in London in August of this year. Among those present on the dais were Sir Lauder Brunton, President of the Congress, Lord Ramsay, Sir John Cockburn, Dr. T. J. Macnamara, M.P., Sir Richard Martin, Sir Edwin Brabrook, the Greek, Chinese, Uruguayan, and Serbian Ministers, the Agent-General for Natal (Sir Thomas E. Fuller), the Agent-General for South Australia (Mr. J. Jenkins), Sir Cuthbert Quilter, Dr. J. Kerr, and Mr. Alfred Mosely.

THE LORD MAYOR, in opening the proceedings, said that the meeting was one of the utmost importance to the health of infants and school children.

SIR LAUDER BRUNTON remarked that the congress was an assemblage from every civilised country in the world of people who were interested in the health of school children. Of the subjects to be dealt with by the congress, the first group was concerned with the best methods of training for the minds and bodies of healthy scholars in and out of school, the second group with children who were defective in body or mind, the third group with the important subjects of medical inspection, the instruction both of teachers and of children in the laws of health, and the health of the teaching profession, and the fourth with residential schools, school buildings, and equipment. With regard to medical inspection he observed that it was fervently hoped that the Bill for the compulsory medical inspection of children which was before Parliament would soon become law, for medical inspection was the groundwork upon which the superstructure of school hygiene must be built. Without medical inspection no proper system of physical education was possible. Defective sight alone was the cause of much misery to children at school, for it not only hindered their learning but caused them sometimes to be punished for stupidity and led to most distressing headaches which were a torture to the child. Schools, too, might become a hot-bed of infection for a whole district. As a result of the conference they would probably obtain a scheme of physical training superior to any in existence. The mental and bodily advantages to be derived by the children in this country from information afforded by the congress might not only prevent them from falling into the ranks of the unemployed, but might, in many cases, prevent them from becoming criminals.

Dr. MACNAMARA said that much had been done in the interests of the child during the past 30 or 40 years, but the time had arrived when it was necessary, in the interests of the nation as well as of the children, that the care of the child must be placed on an accurate and scientific basis. The teacher was placed at a great disadvantage by reason of the lack of scientific data upon which to base his methods of dealing with children who showed physical defects, and there was also need for practical examples being set before the child at school in the way of perfectly constructed buildings from a sanitary point of view.

SIR JOHN COCKBURN said that the care of the children was one of the most important problems that could confront any people. Nations depended for their existence on the way in which they dealt with the children who would be the adults of the next generation.

SIR RICHARD MARTIN, in appealing for subscriptions, pointed out that the money spent on the object which the meeting had met to promote was a sound investment and not a charity, for the result of the congress would be that the educational authorities would learn how best to spend the ratepayers' money economically.

Mr. ALFRED MOSELY, in moving a vote of thanks to the

Lord Mayor, referred to his investigation in America where he found educational methods much in advance of English methods and said that it was a very false kind of economy to neglect the health of the future generations.

Mr. SYKES, President of the National Union of Teachers, seconded the proposition, and a unanimous vote of thanks was accorded to the chairman with acclamation.

The LORD MAYOR briefly replied and the proceedings terminated.

Looking Back.

FROM

THE LANCET, SATURDAY, March 23th, 1829.

FOREIGN DEPARTMENT.

CASE OF POISONING BY CHEESE.

DR. WESTRUMB of Eimbeck, in the kingdom of Hanover, was, on the 10th of November, 1826, called to a family, consisting of a middle-aged man, his daughter, a girl of ten years, and a female relation, about sixty years of age, who, an hour after having eaten of a cheese lately bought, had been suddenly seized with symptoms of poisoning, as violent colic pain, vomiting, diarrhoea, tenesmus, &c. On his arrival, he found them with the abdomen swelled, very painful on pressure, especially in the hypochondria, the pulse very small and frequent, the pupils dilated, and complaining of violent headache, vertigo, great debility, and sickness; the rejected matter had the smell of cheese, and was apparently of an alkaline nature. An emetic, and aperient injections, were immediately ordered, when Dr. Westrumb was sent for to another family, consisting of four persons, who, a short time after, having eaten some cheese bought at the same place, had been simultaneously affected with similar symptoms, but in greater intensity. Besides the remedies used in the first cases, very strong coffee, and a solution of boracic acid were ordered. After this treatment had been continued for two days, five of the patients perfectly recovered; in the other two, in whom the symptoms had been most violent, the affection of the head attained to such a degree as to require the application of leeches, and cold affusion; after about a week, they were also convalescent. M. Sertuerner having been requested to examine the substance which had been the probable cause of the symptoms of poisoning, came to the following results: under the continued action of alcohol, two different substances were obtained, the one of a black colour was precipitated, the other of an oily consistence, brown colour, astringent, nauseous taste, and a very penetrating, rancid smell, collected on the surface of the liquid; it was found soluble in hot water and alcohol, changed the colour of litmus to red, and, when mixed with alkalis, formed a soapy mass. The black substance was liquid, insoluble in hot water and alcohol, and being submitted to heat, gave an extract of an acid nature, caseous smell, and containing an ammoniacal salt, the acid of which could not be ascertained. The maceration of the residuum in hot alcohol produced, at first, no change; but after some time a greyish white substance spontaneously precipitated from the alcohol, which melted at a slight degree of heat, and was also apparently of an acid nature. The three substances, thus prepared, but especially the two former, were found to be very powerful poisons; fifteen grains of them injected into the stomach of a large dog, caused a violent inflammation of the intestinal canal, and the subsequent death of the animal.

Dr. Westrumb regards the deleterious principle in the cheese as belonging to the class of narcotico-acid poisons, and attributes its production to the following causes:

1. The milk being furnished by cows, which have eaten of poisonous vegetables; this will, however, be but very seldom the cause, as, under these circumstances, the secretion of milk is greatly diminished, or even entirely suspended.

2. The preparation or conservation of the cheese in metallic vessels. In some cases of poisoning by cheese, traces of copper and tin were actually discovered in it, although but in very small quantities. The Gazette de Santé, of 1766, No. 22, contains a case of this kind.

3. Adulteration of the cheese, especially with the seeds of

hyosciamus, which had inadvertently been mixed with it, instead of cumin seeds.

4. The formation of a poisonous substance by the chemical decomposition of the cheese. This seems to have taken place in most instances, and, as is shown by M. Sertuerner's analysis, did so in those just described.—*Horn's Archiv.*

"SANATORIA FOR CONSUMPTIVES."

UNDER this title Mr. EDWIN T. HALL, Vice-President of the Royal Institute of British Architects, on March 22nd, before the Architectural Association, Westminster, read a paper which had many points of medical interest and led up to an interesting discussion.

Mr. Hall's paper was mainly devoted to a description of various existing sanatoria in this country and abroad and a number of interesting photographs and plans were exhibited on the walls of the room and also by means of the lantern. After discussing the various points brought out by the illustrations in an instructive manner, Mr. Hall, whose claim to having given a great deal of thought to the question is evidently justified, came to some important conclusions on the problem of how to supply cheap sanatoria. Huts, he said, were cheap but very temporary, and cost a great deal to maintain, while they also might offer special risks. He then showed on the screen illustrations of the kind of sanatorium which he considered would be the cheapest permanent form for cases of pulmonary tuberculosis. He described the buildings as made of an inclosing material, including that for floors, which is non-combustible and impervious to rain and vermin. It is made in dry slabs of standard size, which are practically universal in application for the unit. "A sanatorium on these lines," he said, "complete with all essential administrative buildings to suit any required number of beds, with drains, fittings to kitchen and laundry, and water storage, can be erected on a suitable and reasonably accessible site at a cost of about £85 to £105 per bed, depending on its size. I call the design the standardised expanding sanatorium because if a small institution erected on these lines requires to be extended to meet growing wants, this can be readily accomplished by adding units to the wards and administration." As examples of what could be done, Mr. Hall quoted one sanatorium of 16 beds with its appropriate administration to cost about £1680, one of 32 beds to cost about £3170, and one of 48 beds to cost about £4080. None of these buildings compete with the large permanent sanatoria which will remain. Mr. Hall's aim has been different. "In June, 1905," he said, "a profitable discussion of the whole subject took place in London, and Dr. Heron remarked that poor consumptives should be sent into sanatoria for their own sakes and for the sake of the healthy community, which could not be done if sanatoria were built costing £200 to £300 per bed. A sanatorium well equipped for the service of the poor should not cost more than £80 per bed."

Mr. Hall thought that his standardised sanatoria would meet the views of Dr. Heron. The buildings had in them nothing in common with the temporary wood hut or galvanised iron buildings with timber construction and cavity walls and roofs. They had solid thin walls, roofs, and floors, with no cavities. They have smooth internal surfaces, avoiding the expense of plaster or wood covering. These surfaces might be left bare or might be distempered only, painted. The drainage was designed for soiled water only, which if no sewers were available would be taken into cesspools and emptied by closed suction carts. A water-supply was assumed to be available, either from public mains or a local pure stream or other source. Fireplaces in all rooms were provided to avoid the great expense of an engineering plant. A gas-supply was required for heating bath water by geysers, and gas or oil might be used for lighting. All the joinery required could be prepared in labour centres and carted on to the site ready for immediate erection. In all cases the sanatorium was divided into units of eight beds, each unit containing six wards with single beds and one with two beds. With a total of only 16 beds it was assumed that the medical work would be done by a non-resident physician, the patients being in charge of a qualified matron with nurses. With 32 patients, a resident medical man was provided for in addition to the matron and the nurses and servants were increased. With 48 patients quarters were provided for two medical

men, a matron, and an assistant matron or housekeeper, with a larger staff of nurses and servants. A small consulting-room and a waiting-room were also provided. All the buildings were one-storied. All patients' rooms faced south-south-east or south-south-west; all staff rooms faced either south or east and west so that all got ample sunlight. All rooms were approached by corridors or covered ways, protected from rain. All patients' rooms had glass-verandah shelters on the southern side. The open-air treatment was fully adopted.

Colonel GERRARD OLARK, in proposing a vote of thanks to Mr. Hall, asked whether the estimates given for cheap sanatoriums included furniture.

Mr. HALL replied that the estimates were for buildings alone.

Dr. H. T. BULSTRODE said that in commenting upon the lecturer's paper he was somewhat handicapped by reason of his official position. He had visited almost every one of the sanatoriums, both in this country and abroad, mentioned by Mr. Hall and he was at the present moment preparing a report to the Local Government Board on the question of sanatoriums. Therefore he could not express his personal views. At the same time, he had every sympathy with Mr. Hall's attempt to provide cheap sanatoriums. He mentioned that a sanatorium was now being erected in Kent by certain friendly societies much on the same lines as the German institutions, at a cost of about £100 per bed. The reason that Germany was provided with so many sanatoriums was on account of the system of compulsory insurance which prevailed there. The building of such institutions was directly encouraged by the insurance societies which found it in their interests to do so. It was not true, though it was generally believed, that consumption was on the increase in this country; as a matter of fact, it had been dying out for the past 50 years. If it decreased at the same rate as it had been doing for the last half century in the course of the next 30 years it would be as rare as leprosy. It was really a question of increasing the rate of decrease. Consumption was largely a social manifestation and as the social condition of the people improved so would tuberculosis fade away.

Dr. T. GLOVER LYON said that too much was made of the questions of sites and accommodation. Provision should be made for more men than women as the number of male patients was double the number of female patients, probably because the woman could not afford to stay away from her home so long as the man. From his experience at the City of London Hospital for Diseases of the Chest patients did better on the balcony system than in the wards of hospitals and in a sense walls were in the way. What was required was a room to sleep in with three sides arranged so that the amount of air flowing through the room could be regulated. If provision was made to shelter the patients from keen east and north-east winds all that was required were four posts and a roof. In these circumstances it seemed remarkable that efforts should be made to build palaces. The size of the room was absolutely a matter of aesthetics and it had nothing whatever to do with treatment. It had a lot to do, however, with the cost. Mr. Hall's plan for building sanatoriums for £85 per bed should be made as widely known as possible.

Mr. FORSYTH said that they were suffering from too much architecture. He referred to an experience at Mount Vernon Hospital, where it was found that patients removed to tents while the extension of the buildings was being proceeded with improved, while those in the hospital lagged behind.

The CHAIRMAN (Mr. NEEDHAM WILSON) said that some provision ought to be made for patients continuing attached to the sanatorium instead of being somewhat prematurely discharged in the interests of more pressing cases. Some sort of a farm colony might be provided.

A vote of thanks to Mr. Hall was then carried with acclamation, to which that gentleman made a brief reply.

MEDICINE AND THE LAW.

The Case of Caleb Charles Whitefoord.

ON March 19th Caleb Charles Whitefoord, formerly a medical man, was convicted at the Central Criminal Court, before the Lord Chief Justice, for using an instrument upon a young woman with intent to procure miscarriage and was sentenced to ten years' penal servitude. He had been sentenced to five years' penal servitude for a similar offence in

1896, and from the information before the court, Lord Alverstone expressed himself as having no doubt that the prisoner, since his release, had carried on his illicit practices among young women for five or six years. His lordship inquired from the detective in charge of the case what the profits of such acts might be and was informed that the price paid to Whitefoord varied from £1 to £10. No doubt to those who have once fallen into the temptation to make money by this particular crime it presents considerable attractions, for although it is carried out with accomplices who are strangers to the principal criminal it is entirely to their interest, as it is to his, to maintain secrecy, and it is to be noticed how often one conviction follows another with criminals of this class. The crime, moreover, is one which lends itself readily to the extortion of blackmail. In the case in question the prisoner put forward his age and bodily infirmities in asking for a lenient sentence but his lordship considered that these were outweighed by the danger of his acts and the misery caused and encouraged by the continuance of such malpractices unchecked.

"At Present in Good Health."

Lawyers have from time to time discussed what is a healthy person, notably in the case of the pregnant and the insane. A recent insurance case, which is reported from the Australian courts, contains a full discussion of this question from the standpoint of the law. On Sept. 14th, 1902, Mrs. Kidman took out a policy of life insurance from the National Mutual Life Association of Australians; one of the conditions was that the would-be holder "is at present in good health." The day after she had been accepted by the office she sent for her medical adviser, with the result that she was examined under an anæsthetic on the 16th and an ovarian tumour was diagnosed. She went at once into a hospital and in the course of a few days the tumour was removed; she died, however, from the effects of the operation on the 28th of the same month. It further appeared that a year previously she had consulted a medical man and had been advised as to the need of a surgical operation before her disorder could be cured. Upon the widower claiming the insurance money the association repudiated the policy as having been obtained owing to false statements. In the first instance the jury decided in favour of Mr. Kidman on the facts of the case as adduced in court. A new trial was moved for and granted and the court again upheld the policy, for it was ruled that the disorder from which the deceased suffered was not one which, except for the unsuccessful operation, was likely to shorten life. Upon appeal to the High Court a broader view was enunciated and judgment was given for the defendants on the ground that the phrase "at present in good health" must be taken to mean that "the person insured was free from any apparent sensible disease or symptom of disease and was unconscious of any derangement of the bodily functions by which health can be tested."

VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING FEBRUARY, 1907.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6.8 per 1000 of the population, estimated at 4,758,218 persons in the middle of the year. In the three preceding months the rates had been 11.1, 9.5, and 6.8 per 1000 respectively. The lowest rates last month were recorded in Kensington, Chelsea, the City of Westminster, Stoke Newington, Holborn, and the City of London; and the highest rates in Paddington, Bethnal Green, Deptford, and Woolwich. The prevalence of scarlet fever showed a slight increase over that recorded in the preceding month; among the various metropolitan boroughs this disease was proportionally most prevalent in Paddington, Hampstead, Shoreditch, Bethnal Green, Greenwich, and Woolwich. The Metropolitan Asylums hospitals contained 2829 scarlet fever patients at the end of last month, against 4003, 3787, and 3116 at the end of the three preceding months; the weekly admissions averaged 323, against 430, 323, and 299 in the three preceding months. Diphtheria showed no appreciable variation in

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING FEBRUARY, 1907.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGH.	Estimated population in the middle of 1907.	NOTIFIED CASES OF INFECTIOUS DISEASE.										LATENT FROM PRINCIPAL INFECTIOUS DISEASE.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.			
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Fuerepneal fever.	Rhympelias.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Mexales.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhea.				Total.	Annual rate per 1000 persons living.	
LONDON...	4,758,218	1	1417	625	1	96	1	28	339	—	2498	6.8	—	130	23	72	164	—	10	—	—	62	465	1.3	6701	19.4	137
West District.																											
Paddington ...	149,979	—	89	17	—	3	—	2	6	—	117	10.2	—	—	—	—	9	—	—	—	1	12	1.0	203	17.7	134	
Kensington ...	181,842	—	37	10	—	1	—	—	4	—	62	3.7	—	—	—	—	—	—	—	—	—	—	10	0.7	283	20.3	186
Hammermith ...	122,337	—	31	20	—	2	—	1	6	—	60	6.4	—	4	2	3	4	—	—	—	—	13	1.4	165	17.6	154	
Fulham ...	168,749	—	39	28	—	5	—	1	6	—	79	6.2	—	3	—	2	8	—	—	—	5	19	1.5	200	15.6	141	
Chelsea ...	74,857	—	18	6	—	—	—	—	2	—	26	4.6	—	—	—	1	—	—	—	—	—	2	0.3	81	14.1	85	
City of Westminster ...	172,219	—	26	21	—	1	—	—	12	—	60	4.6	—	—	1	4	1	—	—	—	5	11	0.8	236	17.9	142	
North District.																											
St. Marylebone ...	127,718	—	17	18	—	3	—	—	14	—	62	5.3	—	—	—	1	2	—	—	—	1	5	0.5	189	19.3	116	
Hampstead ...	81,137	—	37	12	—	3	—	1	3	—	56	8.0	—	—	—	—	1	—	—	—	—	3	0.4	82	11.7	125	
St. Pancras ...	238,753	—	48	23	—	7	—	—	17	—	87	4.8	—	—	1	2	7	—	1	—	1	10	0.6	352	19.4	122	
Islington ...	347,017	—	77	19	—	1	—	2	17	—	122	4.6	—	—	2	2	18	—	1	—	5	28	1.1	514	19.3	125	
Stoke Newington ...	53,613	—	—	9	—	1	—	—	1	—	16	3.9	—	—	—	—	2	—	—	—	—	2	0.5	50	12.2	77	
Hackney ...	232,693	—	71	47	—	8	—	2	23	—	151	8.4	—	6	1	7	12	—	2	—	5	32	1.8	327	18.3	113	
Central District.																											
Isleborn ...	55,134	—	1	5	—	1	—	—	4	—	12	2.8	—	—	—	2	2	—	—	—	3	7	1.7	103	24.4	77	
Finsbury ...	56,732	—	34	4	—	3	—	—	7	—	48	6.5	—	—	—	3	4	—	—	—	1	8	1.1	177	23.9	121	
City of London ...	20,310	—	2	—	—	—	—	—	—	—	2	1.3	—	—	—	—	—	—	—	—	—	—	—	36	23.1	250	
East District.																											
Shoreditch ...	115,682	—	49	16	—	2	—	—	6	—	73	8.2	—	15	2	2	4	—	—	—	2	25	2.8	224	25.2	201	
Bethnal Green ...	130,531	—	56	26	—	1	—	—	11	—	94	9.4	—	11	1	2	8	—	—	—	3	25	2.5	230	22.9	145	
Stepney ...	308,923	—	97	44	—	6	—	1	19	—	167	7.0	—	21	—	10	1	—	2	—	4	38	1.6	396	16.7	100	
Poplar ...	171,086	—	53	9	—	5	—	1	15	—	83	6.3	—	2	1	3	2	—	—	—	1	9	0.7	247	18.8	112	
South District.																											
Southwark ...	239,781	—	75	21	—	7	—	2	30	—	135	8.4	—	2	—	2	15	—	—	—	3	22	1.4	333	20.7	142	
Bromondsey ...	128,283	—	44	20	—	7	—	—	6	—	77	7.8	—	9	5	3	9	—	—	—	—	26	2.6	229	23.3	164	
Lambeth ...	318,538	—	74	26	—	10	—	6	15	—	131	6.4	—	1	3	3	10	—	2	—	5	24	1.0	483	19.8	120	
Battersea ...	191,736	—	61	42	—	6	—	2	10	—	121	8.7	—	1	—	4	2	—	1	—	2	20	0.7	245	17.6	119	
Wandsworth ...	231,419	—	66	54	—	3	—	3	16	—	142	6.6	—	6	—	1	7	—	—	—	8	21	1.0	322	14.9	118	
Camberwell ...	277,059	—	95	50	—	1	—	2	25	—	144	6.8	—	12	3	2	15	—	—	—	4	36	1.7	363	17.1	130	
Deptford ...	116,510	—	45	38	—	4	—	1	18	—	106	11.9	—	11	1	6	2	—	—	—	2	20	2.2	168	17.7	104	
Greenwich ...	107,222	—	48	19	—	—	—	—	17	—	85	10.3	—	9	—	3	2	—	—	—	1	15	1.8	132	16.0	70	
Lewisham ...	162,532	—	36	24	—	—	—	1	6	—	67	6.7	—	1	—	3	7	—	—	—	—	11	0.9	165	14.1	116	
Woolwich ...	128,336	—	88	27	—	5	—	—	12	—	132	13.3	—	16	2	3	—	—	—	—	2	22	2.2	176	17.7	178	
Port of London ...	—	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

* Including membranous group.

* Including membranous group.

prevalence from that recorded in January; the notifications of this disease last month were proportionally most numerous in Hackney, Bethnal Green, Battersea, Wandsworth, Deptford, and Woolwich. The number of diphtheria patients under treatment in the Metropolitan Asylums hospitals, which had been 1075, 995, and 921 at the end of the three preceding months, had further declined to 916 at the end of last month; the weekly admissions averaged 126, against 153, 123, and 124 in the three preceding months. The prevalence of enteric fever, which had shown a continued decline during the three preceding months, decreased still further in February; among the various metropolitan boroughs this disease was proportionally most prevalent in Hampstead, Hackney, Southwark, Bermondsey, Battersea, and Woolwich. There were 103 enteric fever patients under treatment in the Metropolitan Asylums hospitals at the end of last month, against 161, 134, and 100 at the end of the three preceding months; the weekly admissions averaged 16, against 24, 18, and 14 in the three preceding months. The greatest proportional prevalence of erysipelas was recorded last month in St. Marylebone, Hackney, Southwark, Camberwell, Deptford, and Greenwich. The 28 cases of puerperal fever notified during the month included six in Lambeth, three in Wandsworth, and two each in Paddington, Islington, Hackney, Southwark, Battersea, and Camberwell.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ending March 2nd the deaths of 6701 persons belonging to London were registered, equal to an annual rate of 18.4 per 1000; in the three preceding months the rates had been 14.7, 18.3, and 19.9 per 1000 respectively. The death-rates last month ranged from 11.7 in Hampstead, 12.2 in Stoke Newington, 14.1 in Chelsea and in Lewisham, 14.9 in Wandsworth, and 15.6 in Fulham, to 22.9 in Bethnal Green, 23.1 in the City of London, 23.3 in Bermondsey, 23.9 in Finsbury, 24.4 in Holborn, and 25.2 in Shoreditch. The 6701 deaths from all causes in London last month included 466 which were referred to the principal infectious diseases; of these, 130 resulted from measles, 28 from scarlet fever, 72 from diphtheria, 164 from whooping-cough, 10 from enteric fever, and 62 from diarrhoea, but not any from small-pox, from typhus, or from ill-defined pyrexia. No death from any of these diseases was recorded last month in the City of London; among the metropolitan boroughs they caused the lowest death-rates in Chelsea, St. Marylebone, Hampstead, St. Pancras, and Stoke Newington; and the highest rates in Shoreditch, Bethnal Green, Bermondsey, Deptford, and Woolwich. The 120 deaths from measles were 50 below the average number in the corresponding periods of the five preceding years; among the various metropolitan boroughs this disease was proportionally most fatal in Shoreditch, Bethnal Green, Stepney, Bermondsey, Deptford, Greenwich, and Woolwich. The 28 fatal cases of scarlet fever showed a decline of ten from the corrected average number; the greatest proportional mortality from this disease occurred in Paddington, Hammersmith, Shoreditch, Bermondsey, and Woolwich. The 72 deaths from diphtheria were 11 fewer than the average; the highest death-rates from this disease last month were recorded in Hackney, Holborn, Finsbury, Stepney, Deptford, and Greenwich. The 164 fatal cases of whooping-cough were slightly below the average number in the corresponding periods of the five preceding years; among the various metropolitan boroughs this disease was proportionally most fatal in Paddington, Bethnal Green, Southwark, Bermondsey, and Camberwell. The ten deaths from "fever" were less than half the corrected average number; of these ten deaths two belonged to Hackney, two to Stepney, two to Lambeth, and one each to Fulham, Hampstead, Islington, and Battersea. The 62 fatal cases of diarrhoea were equal to the average number in the corresponding periods of the five preceding years; this disease showed the greatest proportional mortality in Fulham, the City of Westminster, Hackney, Holborn, Bethnal Green, and Wandsworth. In conclusion, it may be stated that the aggregate mortality from the principal infectious diseases in London last month was nearly 24 per cent. below the average.

Infant mortality, measured by the proportion of deaths under one year of age to registered births, was equal to 127 per 1000. The lowest rates of infant mortality were

recorded in Chelsea, Stoke Newington, Holborn, Stepney, and Greenwich; and the highest rates in Kensington, the City of London, Shoreditch, Bermondsey, and Woolwich.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: A. L. Christie to the *Hawke*, E. O. Ward to the *Barfleur*, J. Jenkins to the *Hood*, J. O. Ferguson to the *Ariadne*, and J. O. Wood to the *Andromeda*. Staff Surgeons: W. L. Martin to the *Ganges*, for Shotley Barracks; A. W. B. Livesay to the *Bonaventure* on commissioning; J. W. Craig to the *Hawke*, R. S. Burniston to the *Cumberland*, A. H. Jeremy to the *Carnarvon*, and J. Martin to the Royal Marine Depot, Deal. Surgeons: L. Lindop to the *President*, for three months' study at West London Hospital; F. M. V. Smith to the *Cumberland*; H. A. Browning to the *Pembroke*, additional, lent to *Triton* for surveying season; A. F. Fraser to the *Donegal*, F. E. Bolton to the *Barfleur*, H. G. T. Major to the *Hood*, E. S. Wilkinson to the *Achilles* on commissioning, and R. W. G. Stewart on commissioning.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Lieutenants to be captains (dated Feb. 28th, 1907):—Arthur C. H. Gray, Douglas P. Watson, Thomas S. Dudding, John E. Powell, Francis M. M. Ommanney, Osburne Ievers, Robert H. MacNicol, Hugh H. J. Fawcett, Santiago L. Pallant, Charles R. Sylvester-Bradley, Stanley E. Lewis, Gerard A. Kempthorne, James T. McEntire, Norman E. Dunkerton, Patrick J. Hanafin, John D. Richmond, Ernest M. Glanville, Marmaduke O. Wetherell, Harold C. Hildreth, William MacD. MacDowall, Reginald T. Collins, Thomas J. Wright, and Arthur C. Osburn.

ROYAL ARMY MEDICAL CORPS IN INDIA.

Lieutenant-Colonel L. T. M. Nash is appointed to command Station Hospital, Barrackpore, vice Lieutenant-Colonel J. B. Buchanan; Major F. Smith, D.S.O., to command Station Hospital, Benares, vice Major H. P. Johnson; Lieutenant-Colonel M. W. O'Keefe is appointed officer commanding Station Hospital, Karachi; Lieutenant-Colonel S. Westcott is appointed officer commanding Station Hospital, Mhow; Lieutenant-Colonel J. R. Stuart is appointed officer commanding Station Hospital, Neemuch; Lieutenant-Colonel G. E. Hale is appointed officer commanding Station Hospital, Hyderabad; Lieutenant-Colonel C. T. Blackwell is appointed officer commanding Station Hospital, Belgium; and Lieutenant-Colonel A. Kennedy is appointed officer commanding Station Hospital, Pachmarhi. Captain H. A. Davidson has arrived at Bombay. Lieutenant-Colonel J. Battersby, Major T. H. J. C. Goodwin, D.S.O., and Captain D. Curme have embarked for England. Captain R. H. Bridges has been granted leave out of India for six months on medical certificate. The following officers have been granted extension of sick leave: Lieutenant-Colonel H. Cocks to May 11th and Captain T. Biggam to May 17th, 1907. Lieutenant-Colonel M. W. O'Keefe has been posted to the 4th (Quetta) Division; Lieutenant-Colonel S. Westcott to the 5th (Mhow) Division; Captain J. S. Galle to the 6th (Poona) Division; Captain E. W. Powell to the 6th (Poona) Division; and Lieutenant M. J. Cromie to the 5th (Mhow) Division. Lieutenant-Colonel C. T. Blackwell has been transferred from the 4th (Quetta) Division to the 6th (Poona) Division; Lieutenant-Colonel A. Kennedy from the 6th (Poona) Division to the 5th (Mhow) Division; Lieutenant-Colonel J. J. O'Donnell from the 5th (Mhow) Division to the 6th (Poona) Division; Lieutenant-Colonel F. R. Newland from the 6th (Poona) Division to the 5th (Mhow) Division; Major R. C. Thacker from the Aden Brigade to the 4th (Quetta) Division; Major F. G. Faichnie from the 5th (Mhow) Division to the Aden Brigade; Captain T. Biggam from the Aden Brigade to the 6th (Poona) Division; Captain M. F. Foulds from the 6th (Poona) Division to the Aden Brigade; and Lieutenant F. J. Turner from the Aden Brigade to the 4th (Quetta) Division.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Cinque Ports: Surgeon-Lieutenant J. W. Harrison resigns his commission (dated Jan. 1st, 1907).

Rifle: 1st Volunteer Battalion the East Lancashire Regiment: Howard Henry to be Surgeon-Lieutenant (dated

Jan. 21st, 1907). 4th Volunteer Battalion the Durham Light Infantry: The undermentioned to be Second Lieutenant: Ernest George Dryden Benson (late Surgeon-Lieutenant) (dated Jan. 15th, 1907).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

London District: London Companies: Harold Arthur Thomas Fairbank to be Lieutenant (dated March 1st, 1907).

INDIAN MEDICAL ARRANGEMENTS.

The *Standard* of March 25th states that "Lord Kitchener has decided to reorganise the paid appointments to staff surgeons and hospitals among officers of the Royal Army Medical Corps and those of the Indian Medical Service. The establishments will be altered to secure better coördination and working, especially in the north, and the new allotment comes into force on Monday next."

THE NEW ARMY SCHEME.

Mr. Haldane is indefatigable in his endeavours to render his new schemes for the creation of a really national army a success. For this purpose he knows a territorial army to be absolutely essential and that everything turns upon the willingness of the nation to provide it. The question yet to be answered experimentally is whether the number of men required will be forthcoming. The subject has a hygienic and physical health side to it of a very important kind upon which we have previously commented. Mr. Haldane concluded his recent speech at the Guildhall, when he distributed the prizes to a cadet battalion of the King's Royal Rifle Corps, by taking up a position for which we have always contended. "Could anyone look upon a first-rate cadet corps without feeling that every young man in it was better and stronger morally and mentally for the discipline to which he had voluntarily subjected himself? It helped him in life, it helped him in his employment; it helped him to be a better citizen, and fitted him not only for military but civilian duties. From every point of view the cadet corps was a thing to be encouraged in the interests of the nation."

Correspondence.

"Audi alteram partem."

SLEEPING SICKNESS ON THE LUALABA RIVER, CENTRAL AFRICA.

To the Editors of THE LANCET.

SIRS,—Early in the year 1905 Dr. Dutton and Dr. Todd visited the Upper Congo as far as 6° S. Lat. In their valuable report¹ they give Bull as the most southern point of infection on the Upper Congo. Bull is on the Lualaba river, 60 miles south of Kasongo and about 5° 30' S. Lat. Some native porters from Lake Kasali, 200 miles farther south, were examined but no indications of sleeping sickness were evinced. It was supposed, therefore, that the disease at that time had not extended farther south on the Lualaba than Bull.

In August of last year I received a communication from Mr. J. H. Hayes, who was travelling from Lake Kasali southward for 100 miles, stating that the Baluba people in the villages along the Lualaba appeared to be dying in increased numbers and from a disease quite unknown to the people themselves. He believed that it might be sleeping sickness as some of them evinced those symptoms. In October I proceeded to this district on a tour of investigation. At Wundwi, which is a short distance below the Kalenge Rapids on the Lualaba River, and about 100 miles south of Lake Kasali, I found by microscopic examination of cervical gland fluid that 70 per cent. of those examined were infected with trypanosomes. Adults and children alike were infected. The women and children were probably more commonly infected than the men. The old people seemed to be more or less free. These proportions as to age applied to all the villages visited.

At the Congo Post of Bukama, of 45 soldiers from all parts of the Congo State, ten were shown to harbour the organisms in their cervical glands. Of 20 workers from the surrounding district five were infected. At Tengalonzi, opposite the

Post, of 50 examined 40 showed unmistakable glands by palpation and eight had enlarged glands but not so characteristic. At Pengi 30 out of 50 were found with enlarged glands. At Lambula 25 out of 35 were with enlarged cervical glands. At Karu on Lake Kavele, 15 miles west of the Lualaba, I found 20 per cent. of the people with typical glands. The examination of 129 carriers from Lake Kasali showed 11 per cent. to be infected.

The conclusion to be drawn from these observations is that the district is heavily infected. After removing all apparent sources of error it appears on a conservative estimate that at least between 40 and 50 per cent. of the inhabitants have trypanosomiasis. This represents a slightly heavier infection than Dr. Dutton and Dr. Todd found in the districts 200 miles north of this. As before mentioned, the natives themselves recognise sleeping sickness as a new disease. It was also noted above that Dr. Todd had examined at Cabinda two years ago a number of porters from Lake Kasali, but he failed to find in them any indication of trypanosomiasis. It seems, therefore, probable that the disease was not introduced earlier than three years ago at the longest. Dr. Todd mentions that the disease was first noticed at Cabinda in 1900. The mode of introduction seems evident. The Lake Kasali people have for some years carried on an extensive trade in dried fish with Cabinda, 200 miles north. They catch the fish, dry it, and carry it to Cabinda, where they find a ready sale. These carriers have contracted the disease at Cabinda and have been the means of infection on Lake Kasali and the River Lualaba to the south. That it has been introduced in any other way seems improbable, as the Kasali people do not visit any other possible source of infection.

This is the first year that the natives have noticed an increased mortality in their villages. Moreover, they have observed that this increase is only in the villages along the river. Hence, quite on their own initiative they are beginning to move their villages to locations inland. The southern limit of the disease at present seems to be the Kalenge Rapids, about 9° 15' S. Lat. That the disease has not already spread farther south is no doubt due to the fact that the people below the Rapids have practically no intercourse with those above.

The glossina palpalis.—The fly was noticed all along the river where the disease was prevalent. It has also been found at the following places which are as yet free from infection. At the junction of Lufupa and Lualaba rivers; on the Mukulezhi river at about 10° 40' S. Lat.; on the west side of Lake Mweru; at the junction of the Dikulwe with the Lufira river; on the South Kaluli river; on the Luapula river, 10° 29' S. Lat. (Mr. Arthur Pearson); and on the Fwalendes river. Active measures are being taken to prevent the spread of the disease southward. Posts of inspection are established on the main trade routes and it is believed that much can be done to stay its progress. At least its advance can be much delayed, possibly until such time as a cure may be discovered.

I am, Sirs, yours faithfully,
A. YALE MASSEY, B.A., M.D. Tor.,
Medical Officer, Tanganyika Concessions, Limited,
Central Africa.

Ruwe, Congo Free State, Jan. 22nd, 1907.

ALBINISM IN MAN.

To the Editors of THE LANCET.

SIRS,—On looking into the various hereditary conditions which affect man for one which would lend itself to the application of Mendelian methods of investigation that of albinism appealed to me as the most suitable for my purposes. The condition is a striking one, such as may reasonably be expected to impress even the most casual observer, and its occurrence at any time in a family would be a circumstance not likely to be soon forgotten. No estimate that I know of has yet been made as to the frequency with which it occurs in the general population, but it is at least sufficiently common to provide satisfactory data for work such as this.

The condition in itself does not call for description for purposes of identification, but when dealing with a subject about which so little is known it may be as well to venture on a description of what I take to be the type. In the first place, then, in the typical human albino the skin is of a uniform milky colour, except in those parts where the epidermis is thin, allowing the vessels underneath to show through in a highly characteristic manner. The hair system

¹ *Memor. xviii.*, the Liverpool School of Tropical Medicine, March, 1906.

vehicles, such as furniture vans, very often carry a small light in front placed in such a position that vehicles overtaking them have no warning until they are close on them. The country doctor using his motor in answer to an urgent summons in the night or early hours of the morning runs in constant danger from this cause, and every one of us must at some time or other have had narrow escapes owing to the absence of a light showing to the rear giving warning of a cart in front. Even before it was necessary that the motor-cars should carry a light at the back for the purpose of illuminating the number plate it was compulsory that they should show a red light at the back, and how it could be possible for legislators to pass a Bill compelling the fastest vehicles on the road to show a light at the back to prevent them being run into and yet allow farm carts and furniture vans and the like to use the same road and yet carry no light at the back at all has always been a puzzle to me. It would be a great help in securing such an amendment as I have referred to if all medical motorists in the country would write to the Member of Parliament for their district pointing out the danger run by the doctor who has to be out at all hours of the night. I hope medical men will not treat this matter as though it were one of little concern to themselves. The passing of such an amendment would amply repay every medical man in the country for the small amount of time it would take to pen such a letter.

I am, Sirs, yours faithfully,

H. E. B. BRUCE-PORTER,

Honorary Secretary, Committee of Medical Men using Motors.

Grosvenor-street, W., March 22nd, 1907.

"A DESCENDANT OF HUGH OLDHAM."

To the Editors of THE LANCET.

SIRS,—In referring in your issue of March 16th, p. 765, to the late Mr. O. J. Oldham, F.R.C.S., as a "descendant" of Hugh Oldham, Bishop of Exeter, you are exposing that prelate's memory to a good deal of obloquy. The vow of celibacy was enjoined on the clergy by Pope Hildebrand in or about A.D. 1000, whereas Hugh was not born before 1450 and died in 1520. That he died excommunicate is true, but this was not for a breach of the Papal decree but for a dispute on a building question with the powerful Abbot of Tavistock.

The late Mr. Oldham did not claim to be a descendant, but a "kinsman," of Bishop Hugh; beyond that, if we are to judge by his bequests, he seems to have known little about him. For, though Hugh founded Manchester Grammar School, he was also founder of Netley Abbey, which the will ignores. Again, he founded Corpus Christi College, Oxford, in conjunction with Stephen Fox, Bishop of Winchester; but he was also, with the Bishop of Lincoln, joint founder of Brazenose College, Oxford, which is also ignored. As a matter of fact, no Oldham within the last 200 years ever has been able to prove direct connexion either with Bishop Hugh or with Bishop Richard Oldham, who in the thirteenth century was Abbot of Chester and Bishop of Sodor and Man.

I am, Sirs, yours faithfully,

RALPH S. OLDHAM.

March 17th, 1907.

* * Our Manchester Correspondent was in error in using the word "descendant."—ED. L.

TERTIARY SYPHILITIC FEVER.

To the Editors of THE LANCET.

SIRS,—Dr. F. Parkes Weber has done well to draw attention to the occurrence of fever with syphilitic lesions, but I venture to suggest that he has not paid sufficient attention to the main points at issue. It may be true that many syphilitic lesions are accompanied by a varying degree of pyrexia—probably more often than is suspected—owing to the fact that the temperature is rarely taken for any considerable time in cases of syphilis. But this is a point of comparatively slight importance from the clinical point of view.

The importance of *syphilitic fever* (I omit the word "tertiary" because there is no real pathological distinction either in time or nature between the so-called secondary and tertiary lesions) consists mainly in the diagnosis. Fever due to syphilis has been mistaken for typhoid fever, pneumonia, and tuberculous meningitis. Dr. J. D. Rolleston has recently

drawn attention to this question with regard to typhoid fever. He has also reported a case in which early syphilitic brain symptoms were mistaken for enteric fever.

Fournier divides syphilitic fever into symptomatic and essential, the former accompanying the outbreak of cutaneous eruptions, &c., the latter independently of them. It is to the latter class that Dr. Parkes Weber refers. Fournier describes a continuous type and an intermittent type, the former of which he designates syphilitic typhosis (typhosis). He also points out that such cases of "syphilitic typhosis" may be mistaken for enteric fever, and says that the chief points in which syphilitic typhosis differs from enteric fever are the absence of the characteristic temperature chart of enteric fever, the enlarged spleen, iliac pain, dry, glazed tongue, and delirium. The blood is also negative to Widal's agglutination reaction. It would therefore appear that, however interesting "syphilitic fever" may be from a pathological point of view, its main importance lies in its diagnosis from enteric fever, meningitis, and pneumonia.

I am, Sirs, yours faithfully,

C. F. MARSHALL.

New Cavendish-street, W., March 18th, 1907.

To the Editors of THE LANCET.

SIRS,—It does not appear to be generally known that the occurrence of fever in syphilis was mentioned by some of the earliest writers on the disease. Having recently had occasion to peruse the early literature of syphilis I have thought that the following notes might be of interest to some of your readers. Long before John Hunter,¹ to whom Dr. Parkes Weber alludes in his interesting paper,² the syphilographers of the sixteenth century, whose works are contained in the collection of Lullinus, had spoken of the existence of fever in the *Morbus Gallicus*. According to Fracastor,³ to whom syphilis owes its name, a slight degree of fever was an occasional though rare event: "*Quandoque et febricula quedam concomitabatur, sed raro.*"⁴ Fallopius's words are similar:⁵ "*Solet aliquando febricula adungi ob fervorem circa viscera ferventia. Sed hoc raro fit.*" Petronius wrote to the same effect:⁶ "*His nunc aberat, nunc adjuncta febris erat.*" Haschard⁷ also speaks of a "*lenis febricula*" as one of the early symptoms of the disease. Rondelet,⁸ the original of Rabelais's *Rondibilis*, stated that "some after receiving the infection are seized with fevers and falling into profuse sweats part of the venom is discharged thereby."⁹

According to Vigo,⁹ fever was a late symptom. "*Ultimo loco vidimus febriculam oriri quæ tot prænominatis malis hominem ad ultimum ejus diem conducebat.*" Ulrich von Hutten,¹⁰ one of the most interesting figures in the history of the Reformation, and himself a sufferer from the new disease, also stated that "phthisis" was a sequel. Ambroise Paré¹¹ also reckoned fever among the late phenomena: "*Autres demeurent asthmatiques et hectiques avec une fièvre lente, et meurent tabides et desseichez.*" Brassavolus¹² took a less serious view of protracted fever: "*Lente febris, ac longæ cum morbo Gallico futuram heclicam minime significant. Infinitos enim vidi, qui in tales incidere febres ... tamen heclicæ non evasere, imo Gallico affectu curato, et etiam per existentia, febris ipsa una curata est, ac abiit.*" Of subsequent writers prior to John Hunter, Daniel Turner deserves special mention. In his work on syphilis which seems to have fallen into ill-merited oblivion numerous references are made to the existence of fever in syphilis.¹³ Then, as now, patients supposed to be suffering with phthisis were really the subjects of venereal infection, and when almost reduced to the last extremity owed their salvation to a correct diagnosis and the exhibition of mercury.

How hopeful a view Turner took of syphilitic fever is well shown by the following quotation: "*Of all the several sorts of consumptions I should more willingly encounter the*

¹ Medical Press and Circular, March 20th, 1907, in which I have recorded two cases of syphilis simulating typhoid fever.

² A Treatise on the Venereal Disease, first edition, 1788, p. 300.

³ THE LANCET, March 16th, 1907, p. 723.

⁴ Lullinus: Aphrodisiacus sive de Lue Venerea continens omnia quæcunque de hac re sunt ab omnibus medicis conscripta, Lug. Bat. 1723, p. 169.

⁵ Ibid., p. 780.

⁶ Ibid., p. 325.

⁷ Ibid., p. 332.

⁸ Daniel Turner: Aphrodisiacus, 1736 (abridged English version of Lullinus).

⁹ Ibid., p. 450.

¹⁰ Ibid., p. 279.

¹¹ Œuvres, Lyon, 1641, p. 434.

¹² Lullinus, loc. cit., p. 678.

¹³ A Practical Dissertation on the Venereal Disease, 1724, pp. 251, 257, 273, 304.

several than any of the rest, where the Blatterpox especially had been overlooked and the Body before unacquainted with the antidote, I mean any mercurial preparation . . . Where one Pox is carried off by a pocky Heetick . . . we have twenty, I might say forty, melted down or dry'd away by that of another nature." "The celebrated Astruc," Turner's contemporary, noted "intermitting and slow fevers among the Disorders of the general Functions in Pocky Persons. . . . slow fevers most commonly arise from violent Pains, from Ulcers of various Parts, from Gummata, from the Putrefaction of Nodes or Exostoses, from Internal Abscesses, &c.; all of which constantly happen in an Intermitting Pox." Of writers later than John Hunter but prior to Wunderlich, Swediaur¹⁴ and Bazzerac¹⁵ in France and Erasmus Wilson¹⁶ in this country should be mentioned. Swediaur states that a kind of slow fever with a weak and accelerated pulse often precedes the appearance of ulcers in the throat and the cutaneous eruption. He also deals with syphilitic phthisis, in which he says the maculation is generally unaccompanied by fever, but hectic fever is sometimes present. Bazzerac had frequently seen febrile attacks in the syphilitic closely resembling a double tertian.

Whether the early writers were correct in attributing fever in each case to syphilis is a matter now impossible to decide. Forster¹⁷, though justly appreciative of their work, admits that they were often unduly credulous and attributed certain morbid states to venereal infection on most inadequate and perilous grounds. Enough, however, has been said to show that the occurrence of fever in syphilis, both at an early and late stage of the disease, and the resemblance of the fever to that of tuberculosis or malaria were recognised long before the introduction of the clinical thermometer.

I am, Sirs, yours faithfully,
J. D. HOLLISTON.

Grove Fever Hospital, B.W., March 15th, 1897.

THE DETECTION OF ACETONE IN THE URINE.

To the Editors of THE LANCET.

SIRs,—A ring test, essentially the same as that described in THE LANCET of March 23rd, 1907, p. 206, and on which you comment with approval in an annotation on p. 324 of the same issue, was published by Von F. Lange in the *Münchener Medizinische Wochenschrift*, No. 28, 1906. In Lange's method 15 cubic centimetres of the urine to be tested are mixed with 0.5 to 1.0 cubic centimetre of glacial acetic acid and a drop of freshly prepared sodium-chlorophyll solution. A cubic centimetre of strong ammonia is then run on to the surface and in the presence of acetone a more or less intense violet ring appears at the line of contact, the depth of the colour and the width of the ring varying with the quantity of acetone present in the urine. By this method it is said that 100 per cent. of acetone can be detected, and it has certainly proved in my hands a most delicate and reliable test.

I am, Sirs, yours faithfully,

BAUNSLAND, W., March 22nd, 1907. P. J. CAMMERMEYER.

CENTRES OF MORAL INFECTION.

To the Editors of THE LANCET.

SIRs,—From time to time I, and I have no doubt you, Sirs, and other readers are called at the filthyness of writings and writings in the old-fashioned public consciousness form. I write with, fresh in my mind, a horrible—shall I term it "Grimace"—which I have just seen, and which everybody seeing the place had to see, in a convenience near the corner of the Kensington Gardens. This is a place which must be constantly visited by boys and girls playing in the park. It is impossible to overstate the harm which may be done to them by such places. Now, the London County Council has proposed that at centres of traffic are gradually reducing them. I have seen a place in London place a number, and it is really to be hoped, for the moral state of the people, that they may be removed. At this

but they are abominations. At the present time a new convenience is, I believe, being provided in the Bayswater-road a couple of hundred yards to the east of the filthy place which I have more specially indicated, and it is greatly to be hoped that if M. Park Commissioners will at the earliest moment abolish the old iron filth discriminator and plant decent grass on its site.

I am, Sirs, yours faithfully,

A MEMBER OF TWO HOSPITAL COMMITTEES.

London, March 21st, 1907.

THE ORGANISATION OF THE MEDICAL PROFESSION IN FRANCE.

(FROM OUR SPECIAL CORRESPONDENT.)

The Twenty-fifth Anniversary of the First French Medical Union.—8000 out of 20,000 Medical Men in Salon.—The Parliamentary Medical Group.—220,000 lived in Paris Alone.

Paris, March 15th.

THE medical unions of France have now been in existence over a quarter of a century. Last year a festival was held to celebrate what was called the "silver wedding" of the union of medical men. Strange to say, this movement did not originate in Paris or one of the great provincial centres, but on the contrary in one of the most reactionary and least enlightened parts of France—namely, La Vendée. It is true that so far back as the year 1879 a medical practitioner of Marre, Dr. Marguerite, wrote to the late Dr. Auguste Gailly, who had just founded the *Concours Médical*, protesting that barristers, solicitors, and others were forming unions to defend their professional interests, but that medical men remained listless and disorganised. This letter was the beginning of a prolonged discussion. Many different opinions were expressed and several medical men wrote in opposition, saying that a medical union, if formed, would soon become the instrument of some outside or party and would promote the interests of a selected group to the disadvantage of all the other practitioners. At last the *Concours Médical* appointed a special committee to investigate the whole question. While these debates and discussions were proceeding, in the far-off country district of the Vendée a few practical men actually did what others were merely talking about. It was on March 6th, 1881, that the rules of the Medical Syndicate of Montaigu were definitely adopted and thus the first union of French medical men came into existence. On May 16th following this syndicate held its first official meeting.

Montaigu is a little town of only about 1200 inhabitants and is situated on the banks of the Maine, which is an affluent of the *Loire-Inférieure* in the *Bocage Vendéen*. This town, though small, has a history. It was strongly fortified by Louis XI. It has often been besieged and sacked in turn by the Protestant and by the Roman Catholic armies during the wars of religion. Then more recently it was again taken and retaken by the Republicans and the Royalists during the insurrection of the Vendée. Now there remain but a portion of the dungeon and deep trenches where the walls overlooked the moat. Yet the fighting instinct of the place is not extinct. There is no longer war between rival creeds or rival political systems, but here medical men were first impelled to undertake an economic war in defence of the professional dignity and their material well-being. Dr. Gustave Migon was their leader and he continued to gather together in this small place no less than 40 practitioners, some of them coming from the neighbouring department of the *Loire-Inférieure*. Dr. Migon was born in this little place on Dec. 25th, 1842, and belongs to a well-known family of La Vendée. He received his medical education at Nantes and at Paris, terminating his studies in 1873. He at once went to practice in his native town. Before the great Revolution the Faculty of Medicine was a very close corporation, of very jealous disposition, and not well disposed towards innovations; but all forms of monopoly were swept away by the Revolution. The Empire reorganised the schools of medicine, though it was as opposed to the formation of unions among medical men as it was to all forms of independence or individuality. Therefore, when Dr. Migon began to practice he found the medical profession in a very unattractive condition. There was no rule of conduct, no uniform within the ranks of the profession, everyone was for himself "and the devil

¹⁴ Traité de Médecine, 1806, p. 100.
¹⁵ Traité de Médecine, 1806, p. 100.
¹⁶ Traité de Médecine, 1806, p. 100.
¹⁷ Traité de Médecine, 1806, p. 100.

vehicles, such as furniture vans, very often carry a small light in front placed in such a position that vehicles overtaking them have no warning until they are close on them. The country doctor using his motor in answer to an urgent summons in the night or early hours of the morning runs in constant danger from this cause, and every one of us must at some time or other have had narrow escapes owing to the absence of a light showing to the rear giving warning of a cart in front. Even before it was necessary that the motor-cars should carry a light at the back for the purpose of illuminating the number plate it was compulsory that they should show a red light at the back, and how it could be possible for legislators to pass a Bill compelling the fastest vehicles on the road to show a light at the back to prevent them being run into and yet allow farm carts and furniture vans and the like to use the same road and yet carry no light at the back at all has always been a puzzle to me. It would be a great help in securing such an amendment as I have referred to if all medical motorists in the country would write to the Member of Parliament for their district pointing out the danger run by the doctor who has to be out at all hours of the night. I hope medical men will not treat this matter as though it were one of little concern to themselves. The passing of such an amendment would amply repay every medical man in the country for the small amount of time it would take to pen such a letter.

I am, Sirs, yours faithfully,

H. E. B. BRUCE-PORTER,
Honorary Secretary, Committee of Medical Men
using Motors.

Grosvenor-street, W., March 22nd, 1907.

"A DESCENDANT OF HUGH OLDHAM."

To the Editors of THE LANCET.

SIRS,—In referring in your issue of March 16th, p. 765, to the late Mr. O. J. Oldham, F.R.C.S., as a "descendant" of Hugh Oldham, Bishop of Exeter, you are exposing that prelate's memory to a good deal of obloquy. The vow of celibacy was enjoined on the clergy by Pope Hildebrand in or about A.D. 1000, whereas Hugh was not born before 1450 and died in 1520. That he died excommunicate is true, but this was not for a breach of the Papal decree but for a dispute on a building question with the powerful Abbot of Tavistock.

The late Mr. Oldham did not claim to be a descendant, but a "kinsman," of Bishop Hugh; beyond that, if we are to judge by his bequests, he seems to have known little about him. For, though Hugh founded Manchester Grammar School, he was also founder of Netley Abbey, which the will ignores. Again, he founded Corpus Christi College, Oxford, in conjunction with Stephen Fox, Bishop of Winchester; but he was also, with the Bishop of Lincoln, joint founder of Brazenose College, Oxford, which is also ignored. As a matter of fact, no Oldham within the last 200 years ever has been able to prove direct connexion either with Bishop Hugh or with Bishop Richard Oldham, who in the thirteenth century was Abbot of Ochester and Bishop of Sodor and Man.

I am, Sirs, yours faithfully,

RALPH S. OLDHAM.

March 17th, 1907.

* * Our Manchester Correspondent was in error in using the word "descendant."—ED. L.

TERTIARY SYPHILITIC FEVER.

To the Editors of THE LANCET.

SIRS,—Dr. F. Parkes Weber has done well to draw attention to the occurrence of fever with syphilitic lesions, but I venture to suggest that he has not paid sufficient attention to the main points at issue. It may be true that many syphilitic lesions are accompanied by a varying degree of pyrexia—probably more often than is suspected—owing to the fact that the temperature is rarely taken for any considerable time in cases of syphilis. But this is a point of comparatively slight importance from the clinical point of view.

The importance of syphilitic fever (I omit the word "tertiary" because there is no real pathological distinction either in time or nature between the so-called secondary and tertiary lesions) consists mainly in the diagnosis. Fever due to syphilis has been mistaken for typhoid fever, pneumonia, and tuberculous meningitis. Dr. J. D. Rolleston has recently

drawn attention to this question with regard to typhoid fever. He has also reported a case in which early syphilitic brain symptoms were mistaken for enteric fever.

Fournier divides syphilitic fever into symptomatic and essential, the former accompanying the outbreak of cutaneous eruptions, &c., the latter independently of them. It is to the latter class that Dr. Parkes Weber refers. Fournier describes a continuous type and an intermittent type, the former of which he designates syphilitic typhosis (typhosis). He also points out that such cases of "syphilitic typhosis" may be mistaken for enteric fever, and says that the chief points in which syphilitic typhosis differs from enteric fever are the absence of the characteristic temperature chart of enteric fever, the enlarged spleen, iliac pain, dry, glazed tongue, and delirium. The blood is also negative to Widal's agglutination reaction. It would therefore appear that, however interesting "syphilitic fever" may be from a pathological point of view, its main importance lies in its diagnosis from enteric fever, meningitis, and pneumonia.

I am, Sirs, yours faithfully,

O. F. MARSHALL.

New Cavendish-street, W., March 18th, 1907.

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SIRS,—It does not appear to be generally known that the occurrence of fever in syphilis was mentioned by some of the earliest writers on the disease. Having recently¹ had occasion to peruse the early literature of syphilis I have thought that the following notes might be of interest to some of your readers. Long before John Hunter,² to whom Dr. Parkes Weber alludes in his interesting paper,³ the syphilographers of the sixteenth century, whose works are contained in the collection of Luisinus, had spoken of the existence of fever in the Morbus Gallions. According to Fracastor,⁴ to whom syphilis owes its name, a slight degree of fever was an occasional though rare event: "Quandoque et febricula quedam concomitabatur, sed raro." Fallopius's words are similar:⁵ "Solet aliquando febricula adungi ob fervorem circa viscera fermentia. Sed hoc raro fit." Petronius wrote to the same effect:⁶ "His nunc aberat, nunc adjuncta febris erat." Haschard⁷ also speaks of a "lenis febricula" as one of the early symptoms of the disease. Rondelet,⁸ the original of Rabelais's Rondibilis, stated that "some after receiving the infection are seized with fevers and falling into profuse sweats part of the venom is discharged thereby."⁹

According to Vigo,¹⁰ fever was a late symptom. "Ultimo loco vidimus febriculam oriri que tot pronomatis malis hominem ad ultimum ejus diem conducebat." Ulrich von Hutten,¹¹ one of the most interesting figures in the history of the Reformation, and himself a sufferer from the new disease, also stated that "phthisis" was a sequel. Ambroise Paré¹² also reckoned fever among the late phenomena: "Autres demeurent asthmatiques et hecticques avec une fièvre lente, et meurent tabides et desséchés." Brassavolus¹³ took a less serious view of protracted fever: "Lentæ febres, ac longæ cum morbo Gallico futuram hecticam minime significant. Infinitos enim vidi, qui in tales incidere febres etiam tamen hectici non evasere, imo Gallico affectu curato, et etiam per existentia, febris ipsa una curata est, ac abivit." Of subsequent writers prior to John Hunter, Daniel Turner deserves special mention. In his work on syphilis which seems to have fallen into ill-merited oblivion numerous references are made to the existence of fever in syphilis.¹⁴ Then, as now, patients supposed to be suffering with phthisis were really the subjects of venereal infection, and when almost reduced to the last extremity owed their salvation to a correct diagnosis and the exhibition of mercury.

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² A Treatise on the Venereal Disease, first edition, 1786, p. 300.

³ THE LANCET, March 16th, 1907, p. 728.

⁴ Luisinus: Aphrodisiacus sive de Lue Venerea continens omnia quæcunque de hac re sunt ab omnibus medicis conscripta, Lug. Bat., 1723, p. 189.

⁵ Ibid., p. 780.

⁶ Ibid., p. 325.

⁷ Ibid., p. 930.

⁸ Daniel Turner: Aphrodisiacus, 1736 (abridged English version of Luisinus).

⁹ Ibid., p. 450.

¹⁰ Ibid., p. 279.

¹¹ Œuvres, Lyon, 1641, p. 444.

¹² Luisinus, loc. cit., p. 678.

¹³ A Practical Dissertation on the Venereal Disease, 1724, pp. 261, 257, 278, 304.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Cost of Pauper Lunatics.

WHETHER the apparent increase of insanity be real or the result of increased publicity and greater care for the safety and comfort of the insane there is no doubt as to the serious increase of cost under which the ratepayers are beginning to groan. The deputation on March 10th to the Home Secretary from the Lancashire asylums boards and boards of guardians in the county of Lancaster on the subject of the provision for pauper lunatics was perfectly justified, though no immediate results seem likely to appear. All are agreed that during the last 20 years the expenditure has largely increased, while there seems to be no proportionate increase of cures. And it will be agreed by those who consider the real requirements of the majority of the cases of chronic insanity, that although their surroundings should be airy, bright, and cheerful, several members of the deputation were right in urging that they thought that less costly buildings and less costly maintenance might suffice for chronic cases. No doubt several influences have been at work in causing what may be called extravagance in the building and arrangements of some of our pauper asylums. One of these is the very common one that those who are responsible consider that they should have a structure worthy of the conspicuous position usually occupied by asylums. This has often been illustrated in Manchester in the public buildings erected by the corporation, very notably in some of the palatial baths that were to be "worthy of the city." But why the evidence of so much insanity in our midst should be blazoned forth in this way is not very clear to the sane mind. Then, too, as is quite natural, architects, ambitious, of course, of erecting something that will strike the public eye, may often unconsciously, and sometimes perhaps even consciously, lead authorities into expenditure not really required. The chief necessities are air, light, and good ventilation, which can be provided without elaborate decoration, and good design as to form need not be specially expensive. The Home Secretary evidently sympathised with the deputation in the desire for economy and it is to be hoped that efforts in that direction will be more successful in the future than they have been in the past.

Dangers of Drinking in the Dark.

A pitiful case of accidental poisoning took place at Blackburn on March 20th. A wholesale druggist was cleaning some silver ware in a small conservatory connected with the scullery with cyanide of potassium, which he had in a teacup. He went out to find a silver matchbox to clean, leaving the cup containing the poison on the table, and turning down the light in the scullery, which was the only one that gave light in the conservatory. During his absence his wife went into the scullery to take some pills. She picked up the cup and did not notice anything in it as the place was dark. She drew water from the tap, took a drink from the cup, and then ran into the sitting room calling to her husband, "There is something in that cup," and died almost immediately, before a medical man who was next door could get to her. It is not of much use, perhaps, to moralise on the dangers surrounding those of us who deal in this careless, irresponsible fashion with deadly weapons of any kind, and yet it does not seem right to pass such cases by in silence. The whole history of the case shows a want of appreciation of the danger of leaving a deadly poison in a dark or very dimly lighted room that is almost incredible, and the drinking of this poor woman's fatal draught from a cup which she could only see imperfectly is almost equally incomprehensible. The story points its own moral and, as the coroner said, shows "how very careful people should be when using any sort of deadly poison."

Death from Potomane Poisoning.

One of those unfortunate cases of ptomaine poisoning was inquired into by the Manchester city coroner about a fortnight since. In this case the fatal result was due to eating tinned salmon. Five members of the family and a friend had some of the salmon, which had been bought on the same day. Four of them were taken ill and one little girl died after a week's illness. The shopkeeper said that the salmon had been in stock for three months, which was not considered a long time. They might be kept for years and still be all

right. So many of these cases occur, and the difficulty of discovering whether the contents of the tin that is opened will serve as wholesome food or be the messenger of death should surely be reason enough to incite the men of science to further and closer investigation, so that if possible the unscientific person may be able to detect the dangers of tinned meat before it is too late.

Death from Anthrax.

An inquest was concluded in Salford on March 19th as to the death of a seaman at the Salford Royal Hospital. Mr. W. F. Dearden of the port sanitary authority and Professor S. Delépine found anthrax bacilli in the body. The man was employed on a vessel which carried cattle and during the voyage one of the beasts died and he helped to throw the carcass overboard. The supposition is that he went immediately and shaved himself (it was on a Sunday morning) without washing his hands. In that way, if the animal suffered from anthrax, the germs might easily be conveyed to his own body.

Accrington Hospital Extension.

Accrington has decided to add a new block to the Accrington and District Victoria Hospital. It is to cost £10,000, towards which sum £3000 or more have already been promised. The need for extension is said to be pressing, for the hospital is increasingly useful and the demands on its services continue to grow.

Waste of Infant Life.

At an inquest held about a fortnight since at Blackburn on a baby six months old the mother said she had three children living and had lost seven by death. Only one had lived to be six years old, the others ranged from six months old to a year and three months. The verdict was "death from natural causes, accelerated by neglect in not calling in a medical attendant." The foreman of the jury thought that parents in such cases ought to be seriously dealt with. "It was ridiculous that a child of that age should weigh only five pounds five ounces." It is not wonderful that so many children die, the marvel is that so many live.

Meat Inspection.

Even if the very active trade carried on by the "slink butchers" is put aside there is good reason for a careful inspection of meat. The Manchester corporation, therefore, must be commended for appointing two young veterinary surgeons as meat inspectors. The salary in each case is £150 a year.

March 28th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

The General Infirmary at Leeds.

UNDER the chairmanship of the treasurer, Mr. Charles Lupton, the 139th annual meeting of the supporters of the largest of the Leeds charities was held on March 21st. In this column on Jan. 26th an abstract was given of the statistics for the year 1906, the period covered by the annual report, which was taken as read at the meeting. Commenting on the increase of work in all departments of the infirmary, the treasurer directed particular attention to the increase in the amount of abdominal surgery done during the last 20 years. In 1852 there were only 25 abdominal sections performed, and of these ten resulted in the death of the patient. In 1905 there were 504 operations of the class performed; of these, 398 were successful, in 17 cases the patients were unrelieved, and death occurred in 89 instances. The mortality had thus decreased from 40 to less than 18 per cent. The statistics of abdominal cases for 1906 had not been worked out, but the number of abdominal sections had increased by 60. Mr. Lupton in the course of his remarks made an interesting reference to the development of open-air treatment, the utility of which had been emphasised in the management of cases of tuberculosis, pointing out that it was now largely employed in the treatment of many more cases of a non-tuberculous character than formerly. This was especially carried out at the semi-convalescent hospitals at Cookridge and during last summer there were seldom fewer than 20 men, women, and children living day and night entirely out of doors, while even in winter there had been 10 or 12 living with great benefit under the same conditions. Even at the infirmary the outdoor treatment was

take the hindmost." Under the Empire the State always feared the coming into existence of any organisation that might dispute its absolute authority. The most that could be attempted was the formation of a few benefit or mutual insurance societies. However, the Empire fell in 1870, and as the French nation began to recover from the disasters of the war a new and more independent spirit developed under the Third Republic. No sooner had Dr. Mignen formed this union between his neighbouring 40 rural practitioners than the spirit of rivalry between them died away. Instead of competing they helped each other. They agreed on a uniform tariff in regard to their fees and determined not to allow themselves to be exploited by benefit societies or by insurance companies. Soon the example spread. A medical union was formed at Pouzanges, then at Challanges and other places, and after a while all these local unions united and constituted the formidable Syndicate of the Medical Practitioners of the Department of the Vendée.

From the very beginning, however, Dr. Mignen understood that in a country like France, where everything is centralised, mere local effort would not suffice. Therefore he communicated with the *Concours Médical* and was appointed on a committee, with Dr. Barat-Dulaurier of the Dordogne, Dr. Margueritte of Havre and Dr. E. Noir of Brioude, who were now all striving to form medical unions in their respective localities. This was the nucleus which, after the enactment of the law of 1884 authorising the creation of professional and trade unions, advocated, and finally brought into existence the Union of the Medical Syndicates of France. To-day this federation of local unions consists of 80 different syndicates, having about 5500 members. But there are, all included, 157 medical unions with about 8000 members, only many of them are not affiliated to the central union or federation. According to the last published estimate there are 3815 medical men in Paris and 15,189 in the departments. Then there are 470 practitioners in Algeria and 105 in the other colonies, in all 19 579 medical men, and there are also 985 *officiers de santé*, a lower form of qualification which is no longer accorded. Thus, in round numbers, it may be said that there are 20,000 medical practitioners and that 8000 of them are in union. This is a very high proportion and speaks well for the spirit of organisation of the French members of the profession. The income of the national federation is more than sufficient, amounting to nearly £1000 per annum and last year it was able to invest £152. Such is the present position of affairs as shown by figures, and to celebrate this success a gathering and a banquet took place at Montaigu on May 16th, the twenty-fifth anniversary of the commencement of the movement. From all parts of France medical men came, as it were, on a pilgrimage, to visit the cradle of their medical unions and to render personal homage to Dr. Gustave Mignen and the premier medical syndicate of France. Then, later, during the month of November last, when the general assembly of the Union of the Medical Syndicates of France met in Paris, Dr. Mignen was invited to preside. He had then the pleasure of hearing reports relating the practical results attained; among these was the establishment of an official tariff of fees to be paid under what in England would be called the Employers' Liability Act.

At first the law for compensating workmen in cases of accidents worked badly so far as the interests of the medical profession were concerned. The employers resorted to insurance companies which engaged the service of medical men at fixed salaries. The medical attendant was often accused of acting in the interest of his employers. He could do this by allowing the injured workman to return too soon to his work or by drawing up such medical certificates as tended to make the injury appear less grave. This would reduce the amount of compensation to be given by the insurance company that employed the medical man. But if injured workmen complained of the medical practitioner the latter had good cause to complain of the working men, of their employers, and of the State and its laws. A number of laws had been enacted which are described as laws "of social solidarity"—namely, laws increasing the responsibility of society as a whole towards such members of the society as suffer special disadvantages or misfortunes. The compensation for labour accidents was a notable example of such legislation. But in all this the position of the medical practitioners had been entirely overlooked and while the law was endeavouring to give special assistance to large sections

of the community, the members of the medical profession were threatened with a considerable reduction in their incomes. Fortunately, the parliamentary medical group remains intact. Not even the fierce quarrels engendered by the Dreyfus affair were able to break up this admirable organisation. All medical men, whether they be senators or deputies, and whatever the political party to which they belong, form part of the parliamentary group. When a Bill is introduced affecting the medical profession these political adversaries meet on the friendliest terms and discuss the proposed measure from the point of view of their profession. They at once saw that the law on accidents might be used by various organisations such as insurance companies to compel the victims of accidents to place themselves under the care of medical men specially engaged and probably badly paid for that purpose. Already in 1898 the parliamentary medical group succeeded in getting a clause added to the Bill which stipulated that any injured workman was free to select whatever medical attendant he might prefer.

The adoption of a clause reserving for the patient the right to choose his medical adviser established an important principle, but it did not suffice to secure its practical application. The insurance companies set up dispensaries near important works and in centres where accidents often happen. The employers on their side exercised pressure on their workmen. The workmen were free to do as they pleased but the employers were also free to discharge them. Thus it simply amounted to this, that the workmen were made to understand that if they did not employ their master's medical man then their master would not employ them. The purport of the law was therefore easily defeated. Moreover, the object of the medical unions was likewise set aside. The unions strive to maintain the dignity, independence, and impartiality of the medical profession. But here were medical men induced to sacrifice their independence and impartiality for the sake of the regular salaries offered them by the insurance companies. Fortunately, in 1904 the law was to be revised and the parliamentary medical group set to work again. This time they won over the Senate and the revised law of 1904 contains an additional clause imposing fines and punishments on employers and others who in any way, by threats or otherwise, interfere with the workman's free choice of the medical practitioner. The freedom of the worker is thus at last insured and since then he has been practically as well as theoretically able to choose his own medical attendant. The result is that the members of the medical unions have much more work while the medical men in the service of the insurance companies find their employment well-nigh gone.

Nor is this all. Not only have the independent members of the profession won back their patients, but they have advantageously settled the vexed question of fees. Thanks again to the activity of the parliamentary group an official commission was appointed to study the matter and to draw up a tariff of charges. This commission consisted of three delegates of the medical unions, and of delegates of the unions of dispensing chemists, of the employers' unions, of the workmen's unions, and of the insurance companies. In a word, the commission comprised representatives of all the interested parties. Three different tariffs were drawn up. One applies to rural districts, another to small towns, and the third to the large towns. The smallest sum to be paid for a visit is 1 franc 50 centimes; the highest, that is in Paris, 2 francs 50 centimes, or 2s. Of course, this does not include medicine, for French medical practitioners do not dispense. Then there is a very long and complicated tariff for all minor and major surgical operations.

What this means is best set forth by the estimate made by the union of the Paris medical practitioners. After patient and long inquiry they are now convinced that this alteration in the law has increased the income of the Parisian medical practitioners who attend injured workmen to the extent of £20,000 per annum. This is certainly a very substantial result and amply demonstrates the utility of forming medical unions.

(To be continued.)

CLERICAL AND MEDICAL GOLF MATCH.—A golf match took place at Burnham on March 19th between teams representing the clerical and medical professions of Bristol and Olifton. A high wind rendered play difficult, but the clergy eventually won easily.

quislite extension at Drumchapel will cost about £100,000. It is gratifying to note that at the meeting the Lord Provost was able to intimate a list of subscriptions already received amounting to £29,500.

March 25th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

University Education in Ireland.

It might have been thought that the announcement in Parliament that this question would not be dealt with for some time would have lessened the interest in it in Ireland; but it has not had that effect, for the most influential of the morning papers here contain daily columns of letters in reference to what is called "Mr. Bryce's scheme," although nobody knows what it may precisely prove to be. Many meetings have been held here, in England, and even in America, but the question remains unaltered because of the absence of definite knowledge. On March 22nd two demonstrations were held in Trinity College to protest against Mr. Bryce's scheme, as it is generally interpreted to be. The most prominent speaker at the principal meeting, which was held in the examination hall, and the resolutions were spoken to by Lord Ashbourne, Lord Iveagh, Sir Edward Carson, M.P., and many others. The *noli me tangere* policy has been fully adopted by the University of Dublin. It may succeed, or it may not, but the existing conditions have certainly worked well here for 300 years.

Motor-car Accident in Dublin.

Lady Thomson, wife of Sir William Thomson, was knocked down by a motor-car on March 23rd, just in front of their residence in Stephen's Green. The staff of St. Vincent's Hospital, situated a few doors off, were quickly at attendance. Sir William Thomson and her brother, Sir Hornley Stoker, arrived soon and it was ascertained that the patient, although badly bruised, was happily not seriously injured. The owner of the motor-car, who was also a driver, was brought before the chief magistrate on March 25th and remanded on bail pending the convalescence of Lady Thomson and her ability to appear in court.

The Belfast Health Commission.

During the past week the members of the Health Commission have spent their time in visiting mills, slums, and other places referred to in evidence. They also held one night sitting on March 20th, when some of the labour party tendered evidence as to work in the mills and as to filled up round. The Commission, owing to the Easter holidays, will sit again until April 8th, when it meets in the City Hall, Belfast. The Ulster Medical Society has nominated a number of members, Dr. A. Dempsey, Sir John Byers, Professor J. A. Lindsay, Dr. W. Calwell, and Dr. J. McCaw, to give evidence; and Dr. H. Stevenson, the honorary secretary, is to present a series of resolutions passed at various times by the Ulster Medical Society in regard to questions of public health.

Ulster Eye, Ear, and Throat Hospital.

At the annual meeting of the friends of this charity held on March 21st it was reported that there had been 2170 extern and 340 intern patients during the past year. The debt has been reduced from £324 10s. 6d. to £230 9s. 7d. 112 operations were performed.

The Public Health of Belfast.

At a meeting of the public health committee of Belfast held on March 21st the superintendent medical officer of health presented a dismal report. The death-rate for the week ended March 16th from all causes was 22.3 and from the principal zymotics 1.4. There were 18 cases of typhoid fever, ten of scarlet fever, 11 of diphtheria, and 24 of epidemic cerebro-spinal meningitis, as compared with 11, 13, three, and 31 for the previous week. The total number of cases of "spotted fever" since the outbreak of the disease was now 201, and there had been 107 deaths. The medical officer of health reported that there was great difficulty in persuading parents of children suffering from cerebro-spinal meningitis to have the patients removed to Purdysburn fever hospital for treatment, and he asked for instructions on the point, but after discussion

it was decided to leave the matter in his hands. It would have been better had he explained the objections that the parents of the patients have in regard to the hospital, but this will doubtless come out at the inquiry before the Health Commission. At Purdysburn fever hospital, which accommodates 168 patients, there are now 122 cases; of these 25 are suffering from typhoid fever, 39 from scarlet fever, 15 from diphtheria, and 39 from cerebro-spinal fever.

Cerebro spinal Fever.

Despite the fact that the disease is notifiable, that isolation is being promptly used, that it has been advised to boil the water and the milk; and that disinfectants are being given away profusely—so profusely that a deputation of chemists has complained to the public health committee of the unfairness of such lavishness—and, finally, that the weather has become much milder, cerebro-spinal meningitis continues its course apparently unchecked. Five deaths were reported on March 25th and six fresh cases were notified, and up to the present (March 26th) the total number of cases reported is 218, with 118 deaths. Both the medical profession and the public fear that the measures employed are not resulting in the stamping out of the epidemic.

March 26th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Aneurysm of the Ophthalmic Artery cured by Gelatin.

M. Lancereaux and M. Paulesco communicated a paper upon the above subject at the Academy of Sciences on March 4th. They gave the patient injections of gelatinised serum of a strength of 2 per cent. and after 41 injections arrived at a complete cure. Two hours after the first injection the blood in the aneurysmal sac coagulated, with the result that the aneurysmal bruit and the beating sensation disappeared, but as the conglum contracted after seven or eight hours the sac filled again with blood. Repeated injections gradually caused the sac to become quite full of clot, with the result that the bruit gradually got weaker, changing in quality, and finally the sac became completely and definitely obstructed.

A Possible Antidote for Strychnine.

On March 12th M. Pouchet communicated to the Academy of Medicine a letter addressed by the French consul at Batavia to the Minister for Foreign Affairs. Certain planters whose cocoa plantations had suffered much from the attacks of monkeys laid strychnine for them. It was then noticed that after the monkeys had eaten the strychnine they made for certain trees which they climbed and of which they proceeded to eat the leaves. Such monkeys never showed any symptoms of poisoning and continued their games as before. M. Pouchet thought that it would be interesting to get specimens of the leaves of these trees so as to see whether they really had any antidotal properties for strychnine.

Small-pox and Vaccination at Laos.

M. Kermorgant read a communication sent in by M. Roufflandi, a *médecin-major* of colonial troops, before the Academy of Medicine on March 12th on the subject of small-pox and vaccination at Laos from 1889 to 1906. The country in question, the area of which is 267,000 square kilometres, has only 500,000 inhabitants. The villages are, therefore, very distant the one from the other. There are only five medical men throughout the whole territory and they have to go their rounds either by horse or by elephant, or occasionally by steamer. In 11 years these medical men have performed 196,830 vaccinations with 49 per cent. of success, but it must be remembered that the vaccine which comes from Saigon is often from 55 to 60 days old. These medical men have also to resist strenuously the practice of small-pox inoculation which is still widespread in the country, but they have made one great step in advance, for at Hieng-Khouang on the plateau of Tranninh, which is 1200 metres above the sea, they have started a vaccine station which since the year 1905 has been able to furnish the whole of Haut-Laos with vaccine lymph.

March 25th.

being developed and there were now two roof shelters in constant use for the children. One of these was in full use last summer and many of the patients spent the whole of their time in this way in the open air. Turning to the question of finance the chairman, who, as all who are connected with the infirmary are aware, has brought to bear on this question keen business faculties coupled with an amount of large-mindedness not always associated therewith, said the weekly board had reason for congratulation that some success had attended its efforts towards economy. In 1905 there was a reduction in ordinary working expenditure of £400 and in 1906, notwithstanding an increase of four in the number of occupied beds, there was again a decrease of £410. He considered that this was due in part to a diminution in the cost of some of the articles consumed, but he credited the staff of the infirmary with some share in bringing the result about. The total expenditure for the year 1906 at the infirmary and at the two semi-convalescent hospitals had amounted to £35,044. It was true that this included a sum of £1717, which might be regarded as extraordinary expenditure, but he did not consider "extraordinary" expenditure should be regarded as a source of expenditure unlikely to recur. Of this sum £472 had been devoted to the addition to the clinical laboratory. The receipts for the year amounted to £30,814, or £4200 below the expenditure, but he was not discouraged by an examination of the details of the income. There had been, indeed, a slight decrease in the amount of the annual subscriptions and legacies amounted to only £1129, but the subscription from the Leeds Workpeople's Hospital Fund was £5250, which was the largest sum ever received from that source. The subscriptions from workpeople outside the city had also increased and amounted to £1439, while the infirmary received about £1000 more from this class through demonstrations and galas which they promoted in the towns and villages round about. Two beds and one cot had been endowed during the year by donations amounting to £2500. Among the factors which have contributed to the more economical working of the charity during the last few years must be included the systematising of the accounts which has been carried out by Mr. Blair, the general manager, and his staff, under the direction and at the instigation of Mr. Lupton. As a result of this there is circulated every month a large sheet showing not only the daily average number of beds occupied and the average cost per bed occupied but the amount actually expended in connexion with every ward in the infirmary, in the theatres, and in the various out-patient departments. Such sources of expenditure as provisions, dressings, drugs, massage, nurses' salaries, including that of extra nurses engaged, thermometers, glass urinals, &c., are all separately dealt with and the sheet enables one at a glance to see where undue expenditure appears to be going on and cannot fail to lead to a wise economy. In Leeds it is happily the rule that every member of the honorary staff of the infirmary is a member of the board of management and in consequence of this it has been possible to institute a rule, excellent in its intention and fruitful in its results, which it might have been otherwise difficult to introduce without misunderstanding. This rule involves the sending to every member of the staff a monthly, or in some cases a weekly, statement of the number of patients under his care who have been in the infirmary more than eight weeks, of those who are having massage or any specially expensive form of treatment, whether medicinal or surgical, and of those who are having stimulants. The members of the honorary staff would be the first to admit that extras ordered in suitable cases are occasionally through inadvertence continued when the necessity for them has ceased to exist. As showing the importance of apparently small economies Mr. Lupton in his address mentioned that the expenditure of 1d. more per head on one of the meals which was daily supplied to their patients, nurses, and staff servants, involved an increase of £1000 per annum.

Institution of Separate Professorships of Zoology and Botany at the University.

Consequent on the resignation of Professor Miall, who has occupied the chair of biology since the inception of the Yorkshire College in the early "seventies," the conditions of the teaching in the two subjects of zoology and botany have been fully discussed and at the last meeting of the council of the University it was decided to create separate chairs in the two subjects.

March 25th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Royal Infirmary: New Lady Superintendent of Nurses.

THE managers of the Edinburgh Royal Infirmary have appointed Miss Annie Warren Gill, R.R.O., to be lady superintendent of nurses in succession to Miss Spencer. Miss Gill is at present matron of the Royal Berkshire Hospital, Reading. She was trained in Edinburgh and was for some time night superintendent and for three years assistant superintendent of the Nurses' Home. She was in Africa during the war as matron of the Edinburgh and East of Scotland Hospital; she then returned to Edinburgh but was again sent out to Africa, having been selected by the Government for service in the concentration camps in the Orange River Colony. For her services in South Africa she received the decoration of the Royal Red Cross.

An Important Medico-legal Case.

An important trial has been concluded in Edinburgh which from its medico-legal aspect is worthy of note. The case was known as "The Camnock Shortbread Poisoning Case." When the man, who was charged with having sent the shortbread, was brought into court for trial it was submitted by the Crown that he was insane and this was supported by two medical certificates. Counsel for the prisoner opposed this view and insisted that the prisoner had consistently maintained his innocence and had instructed his agents and counsel to maintain his innocence. The court decided against the Crown and allowed the trial to proceed. The evidence against the accused was generally regarded as very weak, but the judge in instructing the jury pointed out to them that they had to consider whether the prisoner was insane or not. The jury, instead of returning one of the three ordinary verdicts, decided that the prisoner was insane, with the result that he is detained as a criminal lunatic during the King's pleasure, with the double stigma of insanity and criminality.

Demonstrations on Diseases of the Lower Animals.

At the request of the Faculty of Physicians and Surgeons, Glasgow, it has been arranged that the corporation veterinary surgeon should give a series of demonstrations to medical men on diseases of the lower animals, more especially with reference to those which are transferable to man. In connexion with this subject it is interesting to note that the Incorporated Sanitary Association has also approached the town council of Glasgow. The association is at present considering the question of instituting an examination for a certificate of competency in inspecting meat and other foods. For such an examination it is necessary that candidates should undergo a course of practical tuition in the various subjects of examination, such as the signs of health and disease in animals, dead or alive, intended for food, the names and situations of the organs in the bodies of animals, the duties of meat inspectors, &c. The association thinks that in the interests of public health the time has arrived when such a course of teaching should be established by the corporation and believes that it would be well supported.

The Royal Hospital for Sick Children, Glasgow.

At the invitation of the Lord Provost a conference of representative citizens was held in the municipal buildings last week to discuss the scheme for the foundation of a new and larger hospital for sick children in Glasgow. The present hospital, situated in Garnethill, contains 74 cots, while at the hospital at Drumchapel there are 24 additional cots, making 98 in all. At the present moment there are 140 cases awaiting admission to the hospital, and some idea of the immensity of the work carried on by the institution can be gathered from the fact that during last year alone 11,600 patients were treated at the outdoor department. The present hospital, which was erected in 1882, is unfortunately situated in the centre of a densely populated district and is overshadowed by tall tenements on either hand. The directors have therefore determined, if possible, to erect a larger hospital on a new site in Glasgow and also to extend the branch in the country at Drumchapel. To be at all adequate the new hospital will require to contain from 200 to 250 cots and to erect such a building on a suitable site and make the

urgeo Flood was buried in the barracks at Fort Churchill in Hudson Bay, his being the first death and the first grave in the history of the Royal North-West Mounted Police in the Hudson Bay district.

The Academy of Medicine, Toronto.

The Ontario Medical Library Association, with a fine library and building fully paid for, has amalgamated with the Toronto Clinical Society, the Toronto Medical Society, and the Toronto Pathological Society into the Academy of Medicine, Toronto. The Academy will be managed during the first year by a council of 12, which will be composed of the officials of the Library Association and the president and secretary of the other three societies. Succeeding councils will be composed of 19 members. Besides the ordinary members there will be resident and non-resident fellows. An addition will be built to the present building at a cost of \$50,000 to provide for a fireproof library and auditorium. Dr. J. F. W. Ross is the president of the Library Association, Dr. H. B. Anderson of the Toronto Clinical Society, Dr. R. D. Rudolf of the Toronto Medical Society, and Dr. J. A. Amyot of the Toronto Pathological Society. The Academy will be composed at first of four sections—namely, the library section, the medical, the surgical, and the obstetrical sections.

Patent and Proprietary Medicines.

The Hon. Mr. Templeman, from British Columbia, has introduced into the Dominion House of Commons a Bill the chief provisions of which are as follows. Every manufacturer or importer of medicines, or agent of such manufacturer or importer, before offering such medicines for sale shall submit to the Department of Inland Revenue two samples of such medicine so manufactured, together with the name of the medicine and a statement declaring whether the medicine does or does not contain alcohol or any of the poisons set forth in the schedule attached. With such samples a fee is also to be transmitted when, if found satisfactory, a licence will be issued. The Bill will also provide for fines and penalties for non-compliance with the provisions of the law.

Royal Victoria Hospital, Montreal.

The number of patients admitted into the wards of the Royal Victoria Hospital, Montreal, during the last hospital year was 3444, an increase of 351 over the previous year. Of this number 1989 were free patients, 1021 public ward patients, and 434 private ward patients. The total days' hospital treatment was 73,993. In the outdoor departments the total number of patients treated was 4229. The income for the year was \$160,436, while the ordinary expenditure amounted to \$130,353, the balance of \$30,082 being applied in the reduction of the indebtedness incurred by new buildings. Dr. W. F. Hamilton and Dr. C. F. Martin were appointed physicians to the hospital. Dr. Francis J. Shepherd was appointed consulting surgeon, retaining his position as surgeon at the General Hospital.

Toronto General Hospital.

For the year ending Sept. 30th, 1906, there were in residence in the Toronto General Hospital each month the following patients: October, 1905, 313; November, 319; and December, 311; January, 1906, 325; February, 356; March, 341; April, 299; May, 293; June, 292; July, 278; August, 261; and September, 267. The average length of stay per patient was 27.19 days. The cost per head per day was \$1.337. There were performed in the main theatre 905 operations; in the pavilion theatre, 239; and in the eye and ear department, 162. On Sept. 30th, 1906, there were 175 males, 122 females, and eight children in the hospital. During the year there were admitted 2121 males and 1462 females and there were born in the hospital 197 children. The patients remaining in the institution on Sept. 30th, 1906, were 264 adults and 15 children.

Toronto, March 14th.

PRESENTATION TO A MEDICAL PRACTITIONER.—On March 4th Dr. H. P. Taylor of Mid Yell, Shetland, was presented by his friends and patients in the islands of Yell and Fetlar with a Blotkenderfer typewriter and case and a cheque as a mark of their esteem. Mrs. Taylor was presented with a case of fish knives and forks.

Obituary.

SURGEON-GENERAL SIR JOHN HARRIE KER INNES,
A.M.D. (RKT.), K.O.B., K.H.S., F.R.C.S. ENG.

FULL of years and honours this distinguished surgeon died on Tuesday, March 12th, in Florence, at his residence in the Piazza dell' Indipendenza, and on the Friday following at the Protestant Cemetery of the Allori, in the presence of many mourners, British, Colonial, and American, the urn containing his ashes was placed beside the grave of his wife who predeceased him in 1901. Though for some time back in failing health, Sir John Innes seemed to possess a wonderful rallying power, and less than three weeks ago he surprised his friends at the Florence Club by dropping in, just as he used to do in the old days, and joining in conversation with his wonted vivacity. But that was his last appearance in public. The influenza, which has numbered many victims during all the winter along the French and Italian Riviera and in the landward winter cities, claimed him also, double pneumonia supervened, and after a brief struggle he passed peacefully away.

Born in 1820 of Scottish parentage—his father was the Rev. J. B. Innes—he showed an early predilection for medical study and was educated at University College, London. In 1841 he obtained the diploma of the Royal College of Surgeons of England. Entering the Army Medical Department in 1842 he was destined to see a good deal of war service in the course of his army career. To begin with, he gained much valuable experience in the Crimean campaign of 1854 where he served as a volunteer and took part in the attack on the Redan on June 18th. He then proceeded to India and served with great distinction throughout the Indian Mutiny with the 1st Battalion of the 60th Rifles, and more especially in connexion with the action on the Hindun, the battle of Budlee-ke-Seral, and the storming of the heights before Delhi, and the siege, assault, and capture of that city. He bore an honourable part during the eventful days of Delhi and Rohilkund. Acting as principal medical officer of Sir John Jones's force, he went through the Rohilkund campaign and subsequently held a like appointment in Oude with Brigadier Troup's column. In recognition of his services during the Mutiny he received the O.B. and was promoted a deputy-surgeon-general in 1858; surgeon-general in 1872. In 1871 he was selected to act as British medical commissioner on the staff of the Crown Prince of Prussia during the Franco-German war and at the close of this campaign he received the war medal and the Iron Cross. From 1876 to 1880 he held the appointment of principal medical officer in India and in 1878 he was appointed an honorary surgeon to Queen Victoria. In 1878-79 Surgeon-General Innes's duties as principal medical officer took him to Afghanistan and he was present at the assault and capture of Ali Musjid and the subsequent advance up the Khaiber Pass. Retiring in 1880, he was promoted to be a Knight Commander of the Bath in 1887 and on the death of the Queen he was gazetted to the K.H.S. which he held at his death.

Elected Fellow of the Royal College of Surgeons in 1860, in 1863 he married Miss Victoria Baker, daughter of Mr. N. Baker, who, all through his subsequent professional career and in his retirement in Florence, contributed much to make his house the resort of lovers of fine art—of music especially.

When Sir John Innes's active life, professionally speaking, came to a close he took up his residence in Florence, but he continued to intervene in beneficent work of all kinds, chief of which was the part that he bore in administering the British Relief Fund in aid of those who have been overtaken by ill-health and the indigence which it often brings with it in the Tuscan capital. He was a zealous promoter of other local charities, while his work on the reconstruction committee of the Church of the Holy Trinity contributed much to make that edifice what it is universally admitted to be—one of the most beautiful, as it is one of the most frequented, of the Anglican churches on the continent. Other interests also found in him an active and genial votary, the Florence golfing club being only less indebted to his support than the private theatricals and the musical recitals which (with the personal intervention of Lady Innes) did much to make "la vita fiorentina" enjoyable to the English-speaking colony—resident or migratory.

difficulty. Six months ago he sustained a severe fracture of the thigh caused by an accident in the hunting field, and he never afterwards regained his strength. The illness to which he succumbed was a virulent form of typhoid fever. This sad and early termination of Dr. Murray's promising career will cause great regret to a large circle of friends not only in South Africa, but also among his old fellow students in England, and much sympathy will be felt with his wife and two little children in their bereavement.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Oscar Israel, *Custos* of the Berlin Pathological Institute, in his fifty-third year.—Dr. Erb (son of the Heidelberg professor), assistant in the Strasburg University Medical Clinic.—Several continental journals reported recently the death of Dr. Roux, professor of surgery in Lausanne. We are glad to hear that the report is without foundation. Professor Roux has, however, been suffering from an attack of pneumonia, from which he is now convalescent.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—F. A. Bainbridge (Sections I. and II.), St. Bartholomew's Hospital; A. E. Blythman (Sections I. and II.) and S. P. Fouracre (Section I.), Charing Cross Hospital; A. F. Palmer (Sections I. and II.), Cambridge and Middlesex Hospital; and A. Shepperd (Sections I. and II.), Guy's Hospital.
Medicine.—F. A. Bainbridge (Sections I. and II.), St. Bartholomew's Hospital.
Forensic Medicine.—F. A. Bainbridge, St. Bartholomew's Hospital; and E. S. Cooke, Royal Free Hospital.
Midwifery.—P. A. Bainbridge and H. Morris, St. Bartholomew's Hospital; E. H. Paterson, Guy's Hospital; and W. F. Skinner, Sheffield and University College Hospital.
The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—F. A. Bainbridge, A. E. Blythman, A. F. Palmer, and W. F. Skinner.

UNIVERSITY OF CAMBRIDGE.—At a congregation on March 14th the following degrees were conferred:—

M.D.—G. H. L. Whale, Jesus; F. E. Shipway, Christ's; and W. B. Heywood, Emmanuel.
M.B.—W. O. Pitt, Emmanuel.

—The General Board of Studies proposes the appointment of a second additional demonstrator of physiology, without stipend from the University, in Professor Langley's department.

TRINITY COLLEGE, DUBLIN.—At examinations held in Hilary term the following candidates were successful:—

FINAL MEDICAL EXAMINATION.

Part II.—**Surgery.**—Frank B. Seymour, John Gray, Ernest Jameson, Edward O. Stonor, George G. Vickery, Francis W. H. Bigley, Henry P. Hart, Albert T. J. McCreery, Arthur F. Knapp, Rev. Richard B. Bryan, John W. Lane, George H. Stack, and John H. Morton.

INTERMEDIATE MEDICAL EXAMINATION.

Part I.—Robert E. T. Tatlow, Victor B. Kyle, Hugh S. Metcalfe, William P. H. Smiley, Charles D. Hannan, Charles B. Jones, Desmond Drew, James D. Murphy, and Alexander K. Cosgrave.

DIPLOMA IN PUBLIC HEALTH.

Part I.—Cecil Scalle.

FOREIGN UNIVERSITY INTELLIGENCE.

Algiers. Dr. Bouin of Nancy has been appointed Professor of Pathological Anatomy and Histology in succession to the late Dr. Planteau.—**Basle.** Dr. Max Wilms of Leipzig has been appointed Professor of Surgery in succession to Professor Eaderlen who goes to Würzburg. Dr. Leopold Rütlimeyer, *privat-docent* of medicine, has been promoted to an Extraordinary Professorship. Dr. Dietrich Gerhardt of Jena, who had been offered a chair in Erlangen, has decided to accept instead the Professorship of Pharmacology in Basle.—**Berlin.** Dr. Eugen Hollander and Dr. Heinrich Riess have been granted the title of Professor. Dr. Philipp Bockenhelmer has been recognised as *privat-docent* of Surgery.—**Berne.** Dr. Léon Asher has been appointed Extraordinary Professor of Physiology.—**Bordeaux.** Dr. Cruchet has been appointed, after competition, *agrégé* in medicine.—**Florence.** Dr. Luigi Lenzi has been recognised as *privat-docent* of

External Pathology.—**Göttingen.** Dr. Bruno Salge of Dresden has been appointed Extraordinary Professor of Children's Diseases. Dr. F. Samuley has been recognised as *privat-docent* of Medicine.—**Greifswald.** Dr. Leopold Heine of Breslau has been appointed Professor of Ophthalmology in succession to Dr. Schirmer.—**Groningen.** Dr. A. Klein of Amsterdam has been appointed Professor of Hygiene, Forensic Medicine, and Pharmacology.—**Kiel.** Dr. Otto Schirmer of Greifswald has been appointed Professor of Ophthalmology in succession to Dr. Völckers, resigned.—**Liège.** Dr. Ravlart and Dr. Breton have been appointed, after competition, *agrégés* in Medicine.—**Lyons.** Dr. J. Lépine, Dr. Lesieur, and Dr. Martin have been appointed, after competition, *agrégés* in Medicine.—**Marburg.** Dr. W. Danielsen has been recognised as *privat-docent* of Surgery.—**Montpellier.** Dr. Lagriffoul, Dr. Leenhardt, and Dr. Gausseil have been appointed, after competition, *agrégés* in Medicine.—**Naples.** Dr. Giuseppe Lucibelli has been recognised as *privat-docent* of Medicine.—**Paris.** Dr. Castaigne, Dr. J. Sicard, Dr. Nobécourt, Dr. Jousset, and Dr. Loëper have been appointed, after competition, *agrégés* in Medicine.—**Paria.** Dr. Guido Sala has been recognised as *privat-docent* of Neurology and Mental Diseases.—**Pisa.** Dr. Taddeo De Hieronymis has been recognised as *privat-docent* of Hygiene.—**Prague (German University).** Dr. Eischnig of Vienna has been offered the chair of Ophthalmology to succeed the late Professor Czermak. Dr. Kretz of Vienna has been offered the chair of Pathological Anatomy in succession to Professor Chlari who goes to Strasburg.—**Rio de Janeiro.** Dr. José Antonio Abreu Fialho has been appointed Professor of Ophthalmology in succession to the late Dr. da Cunha.—**Rome.** Dr. Riccardo Dalla Vedova has been recognised as *privat-docent* of Surgery and Operative Medicine.—**Strasbourg.** Dr. Karl Pfersdorff has been recognised as *privat-docent* of Psychiatry.—**Toulouse.** Dr. Dalous has been appointed, after competition, *agrégé* in Medicine.—**Turin.** Dr. Giuseppe Gavello has been recognised as *privat-docent* of Oto-rhinolaryngology. Dr. G. Battista Allaria has been recognised as *privat-docent* of Children's Diseases.—**Vienna.** Dr. Otto Zuckerkandl, *privat-docent* of Surgery, and Dr. Max Salzmann, *privat-docent* of Ophthalmology, have been granted the title of Professor.—**Würzburg.** Dr. Alfred Sommer has been recognised as *privat-docent* of Comparative Anatomy and Histology.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held on March 21st at Carlton House, Westminster, Dr. F. H. Champneys being in the chair. The following letter, concerning the midwives roll, addressed to the secretary of the Central Midwives Board was received from the Privy Council:—

SIR.—Referring to your letter inquiring whether the Central Midwives Board has power under the Midwives Act, 1902, to remove the name of a midwife from the roll for reasons other than misconduct I am directed by the Lords of the Council to state that the object of the Act being to provide women in childbirth with the attendance of properly qualified persons, it is, in their lordships' opinion, clearly part of the duty of the Central Midwives Board in respect of what "may be necessary for the due and proper carrying out of the provisions of the Act," to withdraw certificates from persons who are either too old or infirm, or for any other reason incapable of discharging their functions in the event of application being made to them to that effect.

An application was considered from a midwife, Susannah Davies, for the removal of her name from the roll on the ground of defective hearing and memory. The Board resolved to grant the application and directed the secretary to remove her name from the roll of midwives. A letter from Dr. J. Niven, medical officer of health of Manchester, was received reporting a conviction under Section 1(1) of the Midwives Act protecting the title of midwife. A letter was considered from Dr. Sidney Barwise, county medical officer of Derbyshire, as to the licensing and inspection of certified midwives taking cases into their own homes. The Board resolved to refer the letter to the Act Amendment Committee when formed.

HOLIDAYS FOR WORKING LADS.—The "Clerk of the Weather" is more often blamed than praised in our varying climate, but in the eighteenth annual report of the Sea-side Camps for London Working Boys thanks are accorded to the "glorious summer of 1906" for its share in securing the success which has once more crowned the work of the committee. 2551 lads were received at the camps at Bexhill, Eastbourne, and Dymchurch and glowing accounts of their enjoyment are given in this report. Bishop Taylor Smith, Chaplain-General to the Forces, spent a week at Bexhill camp

This is not the place to speak of his private benevolence, which was as large as it was unobtrusive. Let it suffice to say that by his death the Florentine community is in many ways the poorer, as it will continue to realise for some years to come.

CHARLES JAMES OLDHAM, F.R.O.S. ENG., L.R.O.P.
LOND., L.S.A.

THE late Mr. Charles James Oldham of 38, Brunswick-square, Brighton, supplied in himself a remarkable instance of proficiency in two rather dissimilar pursuits. By profession an ophthalmic surgeon he made instrumental music his pastime and became quite celebrated for his collection of Stradivari violins. As already mentioned in our columns, Mr. Oldham died at Brighton on Jan. 24th after an attack of broncho-pneumonia of about 12 days' duration. He was born on Jan. 22nd, 1845, being the eldest son of Mr. James Oldham, F.R.O.S., who began practice in Brighton in January, 1840, travelling there by the first train which went through from London. Mr. James Oldham was one of the founders of the Sussex Medico-Chirurgical Society and was its first secretary. The family is said to be descended from a Lancashire family, one member of which was Hugh Oldham, Bishop of Exeter, who founded Manchester Grammar School, united with Bishop Fox in endowing Corpus Christi College, Oxford, and died in 1519. Mr. Charles Oldham received his school education at Rugby under Dr. Temple, and when a youth was a keen football player. From 1866 to 1871 he studied medicine at Guy's Hospital, where his uncle, Dr. Henry Oldham, had been one of the physicians. In 1870 he took the diplomas of M.R.O.S. Eng., L.R.O.P. Lond., and L.S.A.; in 1871 he was admitted F.R.O.S. Eng. At Guy's Hospital he held the appointments of house physician, house surgeon, and resident accoucheur. He was also resident medical officer at the Evelina Hospital for Sick Children and clinical assistant at the Royal Ophthalmic Hospital, Moorfields. In 1873 he commenced practice in Brighton in partnership with his father until the retirement of the latter in 1880. Mr. Oldham's surgical proclivities were mostly in the direction of ophthalmology and as early as 1872, at the International Ophthalmic Congress held in London, he read an account of an improved refracting ophthalmoscope. His hospital appointments included those of surgeon to the Brighton Hospital for Diseases of the Eye, consulting surgeon to the Brighton Blind Asylum, and assistant surgeon to the Central London Ophthalmic Hospital. In 1886 he was president of the Ophthalmological Section of the British Medical Association; he was also vice-president of the Ophthalmological Society and a member of the council; in the Brighton and Sussex Medico-Chirurgical Society he filled the offices of president and treasurer.

Mr. Oldham's musical abilities procured for him the positions of a director of the Royal Academy of Music and president of the Brighton Sacred Harmonic Society. For many years he played in the orchestra among the first violins at the society's concerts and he led the orchestra at the Good Friday performances of the "Messiah." His collection of Stradivari instruments, already referred to, included three violins, a viola, and a violoncello. For one of these he paid over £3000 and it has recently been on sale for £3500. One violin and the viola were made by Stradivari for the King of Spain. These various instruments were, with one exception, bequeathed by him to the British Museum. Since the publication of the details of the will regrets have been expressed that these masterpieces should be deposited in the British Museum, where they would only be seen in a glass case and would never be played upon. The explanation is, we believe, that the deceased had a great aversion to art treasures of any kind leaving the country and a great dread of their being stolen. His object, therefore, was to place his own collection in keeping where it would not be sold, stolen, or sent out of the country.

Mr. Oldham left estate valued at £77,959 gross, with net personalty £77,418, and of this he has set aside about £80,000 for educational purposes. The chief of the bequests are £10,000 to Corpus Christi College, Oxford, for the encouragement of general learning and of studies of classics; £5000 each to the Universities of Oxford and Cambridge for scholarships for proficiency in classics and in the works of Shakespeare; £3000 to the Manchester Grammar School, founded by his kinsman, Hugh Oldham, formerly Bishop

of Exeter; and £5000 to Epsom College. There are also bequests of £1000 each to the Medical School of Guy's Hospital, the Royal Academy of Music, the Sussex Eye Hospital, the Brighton, Hove, and Preston Dispensary, the Brighton and Sussex Medico-Chirurgical Society, the Brighton Sacred Harmonic Society, and the Actors' Benevolent Fund. The bequest to Guy's Hospital is for a prize in ophthalmology and that to the Royal Academy of Music is intended for the foundation of a violin scholarship. Subject to various bequests or legacies to relatives, friends, and servants he leaves the residue of his property to Corpus Christi College and the Manchester Grammar School. The funeral took place at the Extra-Mural Cemetery, Brighton, on Jan. 29th, and was very largely attended.

CHARLES WEST, L.D.S. R.O.S. ENG.

Mr. Charles West, of 41, Finsbury-square, E.C., died somewhat unexpectedly on March 8th from pneumonia following an operation at the German Hospital, Dalston, N.E. He took the diploma of L.D.S. R.O.S. Eng. in 1863 and had been honorary dentist to the German Hospital for about 35 years; he had also for many years acted in a similar capacity at Queen Adelaide's Dispensary, Bethnal Green-road, N.E. Mr. West was a member of the Odontological Society and a past president of the Metropolitan branch of the British Dental Association. He took a great interest in microscopical research and was a member of the Quekett Society and Selborne Society. He had travelled extensively in Europe and America. In his younger days he was a lieutenant in the Tower Hamlets Volunteers and had gained several prizes for shooting. His death will be regretted by a large number of private and professional friends. The mortal remains were cremated (by the wish of the deceased) at Golders Green, Hampstead, on March 12th, and the funeral took place at Highgate Cemetery on the following day, the Rev. Percy Martin officiating.

JAMES GOOD CURTIS, F.R.O.S. IREL., L.R.O.P. EDIN.

Much regret was felt amongst members of the medical profession in Cork when on March 4th it was publicly announced that Mr. J. Good Curtis had breathed his last on the previous day. It was generally known that he had been suffering from aortic aneurysm and that his condition was serious, so that the end was not unexpected. For a number of years he was a prominent personage in Cork and held more public appointments than any other medical man in that city. He was for a long time surgeon to the South Infirmary and for some years past was consulting surgeon to that institution. He was also inspector of anatomy, certifying factory surgeon, and medical officer of constabulary. His funeral was very representative. The cortege was led by about 50 members of the Royal Irish Constabulary in charge of a district inspector. Next came about 25 of the nurses of the South Infirmary in their picturesque green uniforms. Then followed quite a number of members of the medical profession immediately in front of the bier on which there was a number of floral wreaths, amongst them one from his medical colleagues at the South Infirmary. The chief mourners were his son, Colonel Curtis, R.A.M.C., and his son-in-law, Colonel MacCarthy. The general public were represented by prominent citizens. Mr. Curtis always took the most roseate view of life and had that happy disposition which results in making many friends and few enemies.

FRANK EVERITT MURRAY, M.B., B.O. CAMB.,
F.R.O.S. ENG.

Dr. Frank Everitt Murray, who died at Graaf Reinet, South Africa, on Feb. 1st, was the youngest son of Mr. W. E. Murray of Roodbloom, Graaf Reinet. He began his medical training at St. John's College, Cambridge, in the autumn of 1894. Having taken his degree in the Natural Sciences Tripos in 1899, he entered as a student at St. Bartholomew's Hospital, London, whence he graduated as M.B., B.O. Camb. in 1901. In 1902 he acted as house surgeon to Mr. John Langton at St. Bartholomew's Hospital and in the following year he became a Fellow of the Royal College of Surgeons of England. Returning to South Africa, he resided in Cape Town for a few months and afterwards joined Dr. J. L. Rubidge in Graaf Reinet, where he had endeared himself to the public and the profession, and his advice was much esteemed by his colleagues in cases of

had already occurred; that the local hospital was full of patients suffering from this disease; and whether he would make immediate inquiries as to the cause of this epidemic, which was attributed to the extreme destitution of the people consequent on the failure of the potato crop last year.—**MR. BURELL** (in a written reply) said: An outbreak of typhus fever occurred in this district early in February, since when four families, comprising 25 persons, have been affected. Three deaths have occurred, 16 persons are still in the fever hospital, and six have been discharged cured. The Local Government Board has already investigated the matter and is satisfied that the outbreak was not due to the destitution of the people but to insanitary conditions. None of the people affected were destitute and none had applied for relief at the time of the outbreak. The local medical officer of health, in consultation with the medical inspector of the Local Government Board, is making every possible effort to prevent the spread of the disease. Three additional fever nurses have been appointed by the guardians. There is every reason to hope that no further cases of fever will occur.

The Treatment of Tuberculosis in Parochial Infirmarys.

MR. WILLIAM PEARCE asked the President of the Local Government Board whether he would state which metropolitan parochial infirmaries had special wards for the treatment of cases of pulmonary tuberculosis; and whether the Local Government Board could encourage the establishment of such wards.—**MR. JOHN BURKS** sent the following written reply: In the majority of the metropolitan Poor-law infirmaries special wards are set aside for these cases. The general practice is to extend this system and I desire to encourage it in every way in my power.

Vaccination Wounds.

MR. LUDLOW asked the President of the Local Government Board whether Dr. Fletcher reported on the case of Olive Hunt, who died after vaccination, whether the same Dr. Fletcher reported on the case of Willy Kellam, vaccinated on Oct. 30th, 1906; whether the wound in this case took 72 days to heal; and whether he would lay a copy of Dr. Fletcher's reports upon the table of the House, or give a copy of the report to the relatives.—**MR. BURKS** (in a written answer) replied: Dr. Fletcher reported on both these cases. I do not know the precise number of days which the wound took to heal in the case of Kellam. The reports were made for my information and are confidential documents. Hence I could not take the course suggested in the last part of the question.

Medical Attendance on Coastguards in Buts.

MR. LAMONT asked the Secretary to the Admiralty what was the salary paid for medical attendance on the coastguard of Lamlash and Kildonan respectively in the county of Buts.—**MR. EDWARD ROBERTSON** answered: Dr. Robert Jamieson, surgeon and agent, who attends both the Lamlash and Kildonan detachments, is not in receipt of a fixed salary but is paid at the ordinary rate laid down in the instructions to Admiralty surgeons and agents. If my honourable friend wishes, I can furnish him with a statement of the actual amount paid to Dr. Jamieson during the last financial year in respect of these two stations.

Tuberculous Cows.

SIR ARTHUR BIRCHALL asked the President of the Local Government Board whether his attention had been called to the statement made by Professor McCall that the milk from a cow suffering from tuberculous mammitis should on no account be used for human food, and that such an animal should be destroyed or fattened for the butcher; and whether he would take such action as would prevent such animals being fattened for the butcher to the danger of the public.—**MR. BURKS** replied in writing: I have not seen the statement referred to. The report made in 1893 by the Royal Commission on Tuberculosis, presided over by Sir Herbert Maxwell, contained a statement of the principles upon which it considered that meat inspectors should act in dealing with the carcasses of animals affected with tuberculosis, and the Local Government Board has more than once brought the views of the Commissioners under the notice of local authorities. The Royal Commission, however, did not go so far as to recommend action of the kind referred to in the last part of the question. A further Royal Commission is now considering the transmission of tuberculosis from animals to man, and I should expect guidance from it as to the course which should be taken with regard to the meat of animals affected by the disease. Meanwhile, I could not undertake to promote the legislation which would be necessary to give effect to the suggestion of the honourable Member.

Lead Poisoning in the Potteries.

MR. JOWETT asked the Secretary of State for the Home Department whether any special inquiry was being made into the cause of the recent increase of fatal cases from lead poisoning in the Potteries.—**MR. GLADSTONE** wrote in reply: The figures of fatal and non-fatal cases of lead poisoning for the first two months of this year show ten cases, as against 19 for the corresponding months of the year before. But of these ten cases four have been fatal, as against none for the first two months of last year. With small numbers irregularities are sure to arise in the records of accidents of all kinds. I do not think any explanation can be given of the number of deaths for this year, which I am informed appear to be due to chronic kidney disease originated by lead poisoning of old standing.

MONDAY, MARCH 25TH.

Infants and Alcohol.

MR. SIMMONS asked the Secretary of State for the Home Department whether he was aware that recent investigation had established the fact that in many quarters of London and other large towns every day crowded with women, who not only took their little children into the heated atmosphere of the public bar but also doled their infants with the alcohol; that eminent expert authorities attributed the physical and moral deterioration of certain classes of the people to the fact above stated; and whether in the coming Licensing Bill he would consider the urgency of including a provision that no child should under any pretext whatever be allowed to enter a public-house.—**MR. GLADSTONE** replied: I do not think the state of affairs is as bad as represented by the question, but although it is neither new nor recently discovered the matter is serious and is engaging my earnest attention.

TUESDAY, MARCH 26TH.

Soldiers and Tuberculosis.

MAJOR SEELY asked the Secretary of State for War whether, in view of the fact that only some 6 per cent. of soldiers discharged from the army last year suffering from tubercle of the lung were sent to hospital or sanatoriums, while more than 70 per cent. were sent direct to their homes he could take steps to insure that a larger proportion should in future be sent to institutions where they could receive proper treatment.—**MR. HALDANE** said in reply: The disposal of soldiers invalided with tubercle of the lung is a matter involving several difficult considerations, and I propose to institute a small committee to advise as to what steps it may be practicable to take in the direction indicated by the question. I hope my honourable and gallant friend will give his services to this committee.

Calico and Blood-Poisoning.

MR. SUMNERBELL asked the Secretary of State for the Home Department whether his attention had been called to an inquest held at Sunderland on March 18th as to the death of Ann Wilson, aged 16 years, during the hearing of which the house surgeon at the infirmary said that death was due to blood poisoning, which had been set up by the dressing from the calico, the coroner further remarking that the calico was laden with as much dressing as manufacturers cared to put into it for trade purposes, either to obtain a better price for it or to improve its appearance; and, if so, whether it was his intention to introduce any legislation having for its object the restriction of the sale of calico containing matter of such a dangerous character.—**MR. GLADSTONE** replied: I have obtained a piece of this calico and I am taking steps to obtain an expert opinion upon it and upon all the circumstances of the case.

Insanitary Workshops.

MR. RAMSAY MACDONALD asked the Secretary of State for the Home Department how many complaints as to dirty or otherwise insanitary workshops and factories had been sent by the factory department to the metropolitan borough councils during the 12 months ending Feb. 23rd last; also the number of prosecutions instituted and cases brought before the court by officers of the metropolitan borough councils for overcrowding or insanitation in such factories or workshops.—**MR. GLADSTONE** answered: The number of notices sent by the men inspectors to the metropolitan borough councils during the period named in the question with regard to insanitary conditions in factories and workshops was 488. I have not been able at such short notice to obtain the number of those sent by the women inspectors, but the number in 1906 was 238. I have not the number of prosecutions instituted by the borough councils in respect of insanitary conditions during the period in question, but the figure for 1905, as given by the returns of the medical officers of health, was 19.

Medical Assistance for the Poor in Scotland.

MR. CATHCART WASON asked the Secretary for Scotland whether, in view of the fact that parish councils could not use money out of the rates to compel a medical man to provide an assistant for the general benefit of the public, he would put into operation the powers of the Local Government (Scotland) Act to protect the interests of the poor.—**MR. SIMONAIR** said, in reply: I am informed that the Local Government Board for Scotland have no authority to see that medical assistance is provided for other than the legal poor. The duty of provision for them lies with the parish council.

Medical Attendance in the Navy.

Answering **MR. BOWLES**, **MR. GEORGE LAMBERT**, Civil Lord of the Admiralty, stated that medicines and free treatment for 30 days in hospital were given to men and boys in the Royal Navy.

BOOKS, ETC., RECEIVED.

- APPLETON, SIDNEY**, 25, Bedford-street, Covent Garden, London, W.C.
Tics and their Treatment. By Henry Meigs and E. Feindel. With a Preface by Professor Briassod. Translated and edited, with a Critical Appendix, by S. A. K. Wilson, M.A., M.B., B.Sc., Resident Medical Officer, National Hospital for the Paralysed and Epileptic, Queen-square, London. Price 9s. net.
- BAILLIÈRE, TINDALL, AND COX**, 8, Henrietta-street, Covent Garden, London, W.C.
The Röntgen Rays in Medical Work. By David Walsh, M.D. Edin., Senior Physician, Western Skin Hospital, London, W. Part I.—*The Electrical Apparatus.* By H. Lewis Jones, M.D. Cantab., F.R.C.P. Lond., Medical Officer in Charge of the Electrical Department, St. Bartholomew's Hospital. Part II, *Medical and Surgical.* By the Author. Fourth edition. Price 15s. net.
- BARTH, JOHANN AMBROSIOUS**, Leipzig.
Die wirtschaftlich wichtigen Zecken mit besonderer Berücksichtigung Afrikas. Von Prof. Dr. W. Dönitz, Geh. Med.-Rat., Vortrager der wissenschaftlichen Abteilung des Kgl. Preussischen Instituts für Infektionskrankheiten. Price M.5; geb., M.5.60.
- CASSELL AND COMPANY, LIMITED**, London, Paris, New York, and Melbourne.
Elements of Physics. For Medical Students. By Frederic James M. Page, D.Sc. Lond., F.I.O., Associate of the Royal Society of Mines, Lecturer on Physics and Chemistry to the London Hospital Medical College, Examiner in Physics and Chemistry to the Society of Apothecaries, London, &c. Price 5s.
- DECKWORTH AND CO.**, 3, Henrietta-street, Covent Garden, London, W.C.
A Text-book of Plant Diseases caused by Cryptogamic Parasites. By George Massee, Principal Assistant (Cryptogams), Royal Herbarium, Kew. Price 6s. net.
- HARRISON AND SONS**, 45, Pall Mall, London, S.W.
The Third Huxley Lecture. Delivered before the Medical School of Charing Cross Hospital. By Lord Lister, F.R.S., F.R.C.S. Price not stated.

as chaplain and endeared himself to officers and lads alike. A visitor at Dymchurch writes: "Think of the tremendous change it must be to a London boy living in a noisy thoroughfare where the din is incessant or in an over-crowded slum to find himself in the open country with hardly a house in sight, with no sounds to wake him in the early morning, save the voice of the lark or the call of the reveille bugle! It is indeed a new experience and one which many of these lads would never get were it not for these camps. Surely, to make it possible for them to live a healthy, happy, human life, far removed from the temptations inseparable from great towns, surrounded by influences that make for righteousness, is a religious thing, a deeply spiritual thing. And so I cry, 'God bless the Seaside Camps for the London Working Boys.'" Increased support is asked for and it should be remembered that it is important that an organisation of this kind should have its funds in hand as early as possible in the year, so that it may know in good time how many boys it can undertake to provide for. The office is at 23, Northumberland-avenue, London, W.C., and the secretary is Mr. F. Abel Bloxam.

UNIVERSITY OF LEEDS—The results of the Second and Final (Part I.) Examinations for the degrees of M.B., B.Ch., were issued on March 22nd. The following passed Part II. of the Second Examination (Anatomy and Physiology)—viz., J. P. Munson, B. O. Piercey, A. Riley, W. Shaw, R. E. Smith, and J. N. L. Thoseby. In Part I. of the Second Examination (Materia Medica), A. Perlman passed. In Part I. of the Final Examination the following passed: J. H. M. Frohisher, G. A. O. Mitchell, and G. O. H. Nicol.—At a recent meeting of the council of the University the following, who are lecturers of the University, were elected to the Faculty of Medicine—viz., Arthur G. Plumley, M.B. Lond., L.D.S. Eng., lecturer on dental surgery; Thomas S. Carter, L.D.S. Eng., lecturer on operative dental surgery; A. Alan Forty, L.D.S. Eng., lecturer on dental anatomy and physiology; and O. Rippon, L.D.S. Irel., lecturer on dental mechanics. Dr. Plumley was also elected a member of the Board of the Faculty of Medicine. At the same meeting of the council the dental committee or honorary dental staff of the Leeds Public Dispensary was requested to nominate two of its members for election as members of the dental committee of the Board of the Faculty of Medicine. The effect of this will be to secure for the clinical part of the School of Dentistry a direct representation in the University.

DEATH OF A CENTENARIAN.—Mrs. Brunt of Berrow, Somerset, died on March 20th, aged 101 years and four months.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Poor-law Medical Officers in Scotland.

MR. GATHCART WATSON has presented a petition to the House of Commons from the Poor-law medical officers of Scotland praying that the disabilities under which they have laboured since the passing of the Local Government (Scotland) Act of 1894 might be removed.

Pharmacopœial Formulas for Patent Drugs.

The international agreement respecting the unification of the pharmacopœial formulas for patent drugs, which was signed at Brussels on Nov. 29th, 1906, has been presented to both Houses of Parliament. Its text is now published in French and English. The agreement is signed by representatives of Great Britain, Germany, Austria and Hungary, Belgium, Bulgaria, Denmark, Spain, the United States, France, Greece, Italy, Luxembourg, Norway, the Netherlands, Russia, Servia, Sweden, and Switzerland.

Deaths from Tetanus.

On the motion of Sir WILLIAM COLLINGS in the House of Commons, a return has been ordered of papers containing the results of an inquiry into the origin of certain deaths from tetanus in the Punjab consequent on the employment of Haffkine's prophylactic against plague.

Municipal Milk Depôts.

Mr. JOHN BYRNS has presented a Bill in the House of Commons "to authorise and regulate the establishment of milk depôts by certain local authorities and for matters incidental thereto."

Education of Afflicted Children (Ireland) Bill.

Mr. CHARLES CRAIG's Bill to provide for the better education of afflicted children in Ireland is backed by Mr. Moore, Mr. Hugh

HARTE, Mr. LONSDALE, and Captain CRAIG. The first clause of the Bill sets forth that it is the duty of local authorities to enable blind and deaf children resident within their area to obtain elementary education in some school which for the time being is certified by the Commissioners of National Education as suitable for providing such education to them. In the second clause powers are conferred on the local authority to make arrangements for ascertaining what children within its area are defective or epileptic. For the purpose of ascertaining whether a child is defective or epileptic within the scope of the measure a certificate to that effect by a duly qualified medical practitioner approved of by the Commissioners of National Education shall be required in each case. In the next clause power is given to the local authority to obtain elementary education for defective and epileptic children in some school certified by the Commissioners as suitable for the purpose.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 20TH.

The Education (Scotland) Bill.

Mr. SEXTON, the Secretary for Scotland, in introducing the Education (Scotland) Bill said that amongst its various purposes the Bill provided for the medical examination and supervision of pupils at the option of the School Board or where special circumstances existed at the option of the Education Department. There was power in the Bill to do all that was necessary in the way of providing the necessary machinery for the provision of meals for school children. A clause of the Bill dealt with what might be termed neglected children. In these cases it was provided that where as the result of medical inspection or otherwise it was brought to the knowledge of the School Board that a child was neglected or was in a filthy or venereal condition, or ill clad, or ill fed it should be the duty of the School Board to make inquiry as to the reasons for his condition. If the parent appeared to be at fault he was to be prosecuted as for cruelty to children and provision made for the child accordingly. If the parent was unable, by reason of poverty or ill health, to do his duty by the child the case was to be referred to the parish council, but help given by the parish council for this purpose would impose no disability on the parent. The School Board had the power in the meantime, and so long as might be necessary pending inquiry, to make provision for the child out of school funds.

Sir HENRY CRAIG, in the course of a criticism on various points in the Bill, said that he was glad to see that it made provision for some medical care of the children in the schools. He pointed out that a Bill for the provision of meals for school children had already been introduced into the House by the Labour Members. That Bill threw the financial onus on the School Board, but the Bill of the right honourable gentleman threw it on the parish council. There was a fundamental distinction between the two principles. Which was the Government prepared to follow?

The Bill was introduced and read a first time.

The Ennis State Inebriate Reformatory.

Mr. WILLIAM REDMOND asked the Chief Secretary to the Lord Lieutenant of Ireland how many men and how many women had been committed to the Ennis State Inebriate Reformatory since its establishment; and whether he could estimate how many of these had been considered cured of drunkenness on discharge; and whether he would direct the special attention of the judicial authorities in Ireland to the advisability of sending persons convicted of offences arising from drunkenness to this reformatory instead of to prison.—Mr. BIRRELL (by written answer) replied: Since the establishment of Ennis State Inebriate Reformatory in 1899 33 men and 63 women have been committed, of whom 29 men and 62 women have been discharged. Each case is watched and reported on periodically after discharge. Of the 29 men discharged, 16 are reported cured, 3 are dead, and 10 have relapsed. Of the 62 women discharged, 21 are reported cured, 5 are relapsed, 2 are in lunatic asylums, and 24 have relapsed. The question of sending persons to the Inebriate reformatory is one entirely for the judicial authorities themselves. I will, however, bring the honourable Member's suggestion to the notice of the Lord Chancellor.

FRIDAY, MARCH 22ND.

Owing to the fact that the sitting of Wednesday was prolonged into Thursday afternoon no questions were taken on the latter date. However, on Friday Ministers circulated the replies which in normal circumstances they would have made in the House on Thursday. Some of these are included among the following questions.

Dangerous and Criminal Lunatics.

Major AMSTRUTHER-GRAY addressed the following three questions to the Lord the subject of dangerous and criminal lunatics in Scotland to the Lord Advocate: (1) whether a dangerous patient in a district lunatic asylum might be discharged and handed over to relatives relieved but not cured; and, in that case, whether the lunacy authorities had no further charge or responsibility; (2) whether he would consider the advisability of taking the necessary steps to insure that all cases of dangerous lunatics who had committed assault resulting in loss of life should be dealt with in a criminal lunatic asylum, instead of relegating them to a district asylum; and (3) whether, seeing that the presence of criminal lunatics who had committed murder was detrimental to the general freedom from severe discipline in district asylums, the beneficial effect of what was termed the "pan-door" system being acknowledged, he would take the necessary steps to keep the district asylums free from criminal lunatics who had committed murder or attempted murder, as far as possible.—Mr. SIMON (who sent a written answer on behalf of the Lord Advocate) said: The question raised by the honourable Member is under inquiry and I must ask him to recur to the matter at a later date when I shall endeavour to answer his questions.

Typhus Fever in County Galway.

Mr. O'MALLEY asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the fact that typhus fever had broken out in Oughterard, county Galway; that three deaths

Notes, Short Comments, and Answers to Correspondents.

A RETIRED MEDICAL MAN AND GOOD OPENINGS.

On the issue of THE LANCET of March 16th the following two little advertisements appeared:—

Wanted to purchase immediately, small PRACTICE in rising neighbourhood. Large, lowly rented house a necessity.—Address, No. 368, THE LANCET Office, 423, Strand, W.C.

For Sale, Nucleus of good-class Practice in excellent neighbourhood. Premium low.—Address, No. 369, THE LANCET Office, 423, Strand, W.C.

Among the replies received by the first advertiser, No. 368, was the following:—

COPY.

8, Stone St.

FAVERSHAM, Kent.

March 15, 1907.

Private & confidential.

In reply mention No. 368.

Dear Sir,

I can introduce you to some good openings for making a start in practice where you would be able to pay expenses from the beginning and make a good practice. They are situated in localities unopposed or where further medical help is required. If you like to give me a call here I can lay the cases before you

Watering-Place

Premium £100,

150 miles from London. One doctor doing £2300 a year, and his assistant carrying on branch 5 miles away, but on the coast, doing £800 a year. A good man starting in the latter place would get it all the £800 in a year I am told by a medical friend. These are the only two doctors in these places.

Kent, premium £50, 20 miles from Town beautifully situated, pop 7000 and only 2 doctors, (partners) & 3 doctors only to 14,000. A fine chance, as extensive works are about to commence employing thousands of hands, houses with stables and gardens to let at £40, £45, £50 & £55 now vacant. Bracing, gravel soil, High Ground.

Kent, £50 premium, Best part of hop and fruit district, very good opening

Bucks £30, & a similar premium for openings in Herts, Hants, Oxon, Essex, Staffs, and Surrey.

I can give some introduction to all.

Yrs faithfully,

P. F. JAY, M.D.

To the second advertisement, numbered 369, a reply was sent upon a postcard in the same handwriting as the letter printed above, dated from 8, Stone-street, Faversham, Kent, and bearing the Faversham post-mark. The postcard ran as follows:—

COPY.

Dr. Betts will be glad to receive full particulars in the strictest confidence.

March 15, '07.

We suggest that the information which Dr. Jay proposes to sell to advertisers like No. 368, who wants to purchase a practice, is obtained from advertisers like No. 369 who wants to sell one. It is obvious that the result of Dr. Jay's intervention might be as follows. He could find out from No. 369 why he was anxious to leave his present position and obtain from him all the information tending to make that position covetable. He could then write to No. 368 and offer him information concerning an opening in return for a fee. He need have no other information about the practice to assume that it is a "good opening" and might easily lead No. 368 to purchase a business of no value. To ask money from a man for such a service is well, let us say enterprising. But suppose Dr. Jay brings the practice of No. 369 to the notice of No. 368 as a business in a place where a medical man could set up for himself without going through the formality of purchase he would pocket a fee himself, while much damaging No. 368's chance of obtaining a purchaser.

We ask our advertisers to help us to stop such methods of business and to do this in their own defence. For the future no letters or post-cards will be forwarded to them from this office which we can tell emanate from Dr. Jay, but by the assumption of pseudonyms, by getting assistance in the directing of envelopes, by posting his replies elsewhere than in Faversham, and so on, he can easily elude our vigilance. In case advertisers do obtain offers of assistance from Dr. Jay we strongly advise them to make no reply, at any rate, to pay no money. Either as buyer or as seller they may be placed at a grave disadvantage in dealings carried on by such intervention, and it is not worth while to pay a fee for such services to any man, even though he be a professional brother.

THE MOTOR UNION AND THE CARS OF MEDICAL MEN.

The Motor Union of Great Britain and Ireland is contributing towards the legal expenses of an important case which raises a question of great interest to medical men using motor-cars throughout the country—namely, whether they are to be charged a water rate as

in the case of business vehicles, when they use their cars partly for professional purposes. The case was taken up at the instance of the Harrogate Automobile Club on behalf of one of its members who is also a member of the Motor Union. The member was sued at the Knaresborough Petty Sessions by the Harrogate Corporation for the recovery of 10s., being a half-year's rate levied in respect of water for his car, which he refused to pay. Mr. J. R. A. Tittley, the Motor Union local solicitor, submitted for the defendant that the corporation could not possibly, under the Act, ask him to pay for water for washing his car for "trade" purposes, that being the provision of the Act under which he was charged. The bench adopted this view and also decided against the contention of the town clerk that there was an implied contract because the defendant had paid on two previous occasions. The bench agreed, at the request of the town clerk, to state a case for the opinion of the High Court, and the Motor Union is assisting its member in order that the decision of the justices may be sustained. Any motorist who has had a similar difficulty with his water rate in the matter of special charges in respect of motor-cars should communicate with the secretary of the Motor Union at 1, Albemarle street, London, W.

WHAT IS PLASTICINE?

To the Editors of THE LANCET.

SIR,—Will you kindly allow me to answer your correspondent "London's" question, "What is plasticine made and coloured with?" Not a single ingredient enters into plasticine, composition and colouring matter, but what people are in the habit of using as food and swallowing every day, such things as sulphur, farina, a vegetable oil, vaseline—the colouring matter being absolutely harmless, no arsenic, copper, lead, or other deleterious substance entering it. The material has been subjected to the most rigorous independent tests by hostile critics as against analyses by experts employed by myself, and in the case of such educational authorities as the late London School Board, the Board of Education for New York, the Incorporated Institute of Hygiene, and other certified analysts, the claim for plasticine being an antiseptic and perfectly safe modelling material has been wholly conceded.

I might add further that of the hundreds of thousands of children now using plasticine there has never been an authenticated case of injury resulting, and of the scores of workpeople (including young girls and children) in my employ, who have been with me for many years engaged in the manufacture of plasticine, there has never been a case of injury, ailment, or epidemic whatever. The material has a wholly beneficial effect upon the skin and joints and has a healing influence upon burns, scalds, abrasions, and wherever the skin is broken. From very extended observations, and numerous reports from school teachers, I make the above statement without any qualification whatever.

My factory is open, by advertised invitation, to the inspection of the public, and many visitors to Bath avail themselves of it.

I am, Gentlemen, yours faithfully,

WM. HARBUTT.

P.S.—The success with which plasticine has met has called into existence worthless and objectionable foreign imitations, some made with clays and caustic potash and other irritant alkalies. I had to warn the public against these dangerous counterfeits last year. Your correspondent may have made acquaintance with one of these "substitutes" for plasticine.

POST HOC, ERGO PROPTER HOC.

In the course of his arguments in favour of teetotalism the lecturer chose to illustrate the harmlessness of water and the harmfulness of alcohol by placing an earth worm first in a glass of the former fluid and then in a glass of whisky. Of course, the worm showed a lively movement in the water, while in the whisky its activities apparently ceased for ever. At the close of the lecture the orator invited the audience to sign the pledge. One old lady pushing her way eagerly in front of others was heartily received and loudly exhorted to sign the pledge and to be a better woman. "No," she said, "I was not thinking about the pledge, I was just wondering where you got that whisky from as I have been suffering from worms for years."

THE PERCENTAGE OF SULPHUR IN FOODS.

M. Baland has published the results of his work on the determination of the amount of sulphur in various food materials (*Journal de Pharmacie et de Chimie*, Jan. 16th, p. 49). As in the case of the phosphorus determinations referred to in THE LANCET of March 2nd, p. 604, the tests were carried out on the fresh food materials and not, as is usually the case, on their ash. The following figures express the percentage of sulphur contained in the foods enumerated: wheat, maize, barley, and rye, 0.027 to 0.046; the percentage is slightly higher in oats and buckwheat. The following green vegetables were first dried in a stove: carrots, 0.092; lettuce, 0.214; turnips, 0.181; leeks, 0.397; and potatoes, 0.1. The percentage of sulphur in the ordinary dried beans, haricot beans, lentils, and peas of commerce varied from 0.032 to 0.18. Stone fruits, dried in a stove, were found to contain notable proportions of sulphur, apricots and strawberries containing from 0.012 to 0.021 per cent., and cherries and peaches from 0.1 to 0.114 per cent. of sulphur.

HIRSCHWALD, AUGUST, Unter den Linden, 63, Berlin, N.W.
Einführung in die gerichtliche Medizin für Praktische Kriminalisten. Vier Vorträge von Dr. Hugo Marx, I. Assistent der Unterichtsanstalt für Staatsarzneikunde an der Universität und II. Arzt des Untersuchungsgefängnisses Moabit in Berlin. Price M.2.40.

KIMPTON, HENRY, 13, Furnival-street, Holborn, London, E.C., and Glasgow.

A Treatise on Orthopedic Surgery. By Royal Whitman, M.D., Clinical Lecturer and Instructor in Orthopedic Surgery in the College of Physicians and Surgeons of Columbia University, New York. Third edition, revised and enlarged. Price 22s. net.

KING, P. S., and SON, Orchard House, Westminster, London, S.W.

The Infant, the Parent, and the State. A Social Study and Review. By H. Llewellyn Heath, D.P.H. Cantab., &c., Fellow of the Royal Institute of Public Health, Member of the Royal Sanitary Institute, formerly Assistant to the Chair of Materia Medica and Therapeutics, University of St. Andrews, late Deputy Medical Officer of Health, Ipswich. With an Introduction by Professor G. Sims Woodhead, M.A., M.D., F.R.S. Edin., Cambridge University. Price 3s. 6d. net.

METHUEN and CO., 38, Essex-street, Strand, London, W.C.

The Children of the Nation. How their Health and Vigour should be Promoted by the State. By the Right Hon. Sir John E. Gorst. Price 7s. 6d. net.

SURGERY PUBLISHING COMPANY, 92, William-street, New York.

Paraffin in Surgery. A Critical and Clinical Study. By William H. Luckett, B.S., M.D., Attending Surgeon, Harlem Hospital, Surgeon, Mount Sinai Hospital Dispensary, and Frank I. Horn, M.D., Assistant Surgeon, Mount Sinai Hospital Dispensary, New York City. Price 82.

WEBER, J. J., Leipzig.

Deutsches Wörterbuch. Bearbeitet unter Mitwirkung des Kaiserlichen Gesundheitsamtes von Dr. F. Hinrichs, Dr. E. Hinz, Dr. L. Grünhut, Dr. O. Jacobi, Herr H. Kauffmann, Dr. K. Kellback, Dr. H. Klonka, Dr. F. Kraus, Dr. V. Kremser, Dr. P. Nicolas, Dr. Th. Paul, Dr. F. Röschling, Herr A. Scherrer, Dr. O. Schütz, Dr. A. Winckler, Dr. E. Rost, Dr. G. Sonntag und Dr. F. Auerbach, und unter Beihilfe von Dr. K. von Buchka, Dr. E. Dietrich, Dr. O. Lassar, Dr. E. von Leyden, und Dr. E. A. Merck. Price M.15.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week such information for gratuitous publication.

ALLEN, C. H., M.B., B.S. Edin., F.R.C.S. Edin., has been appointed Medical Officer to the Nottingham Board of Guardians.

COOKE, THOMAS ALFRED BURBARD, L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer by the Pembroke Board of Guardians.

JOHNSON, JAMES BOVELL, M.D., C.M. Montreal, L.S.A. Lond., has been appointed District Medical Officer by the Sturminster (Dorset) Board of Guardians.

KING, WILLIAM WILFRED, L.R.C.P., M.R.C.S., has been appointed Resident Obstetric Officer at the Bristol Royal Infirmary.

SMITH, LIONEL SHINGLETON, L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon at the South Devon and East Cornwall Hospital, Plymouth.

TAYLOR, FRANK B., M.D., B.S. Lond., F.R.C.S. Eng., M.R.C.P. Lond., D.P.H. Cantab., has been appointed Physician for Diseases of Women to the North-West London Hospital and to the St. Mary-lebone General Dispensary.

TURNER, ARTHUR JOHN, M.B., B.S. Durh., has been appointed Junior House Surgeon at the Bristol Royal Infirmary.

WALTERS, CHARLES FERRIS, F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Surgical Registrar to the Bristol Royal Infirmary.

WYATT, H. D., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at the Evelina Hospital for Sick Children, Southwark, S.E.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index)

BEDFORD COUNTY HOSPITAL.—Honorary Assistant Physician.

BIRKENHEAD UNION INFIRMARY AND SANATORIUM.—Resident Assistant Medical Officer. Salary £120 per annum, with board, washing, and apartments.

BIRMINGHAM, QUEEN'S HOSPITAL.—Second Physician for Out-patients and Pathologist. Salary £100 per annum.

BIRMINGHAM, UNIVERSITY OF.—Demonstratorship in Anatomy. Stipend £150 per annum. Also Junior Assistant, Pathological Department. Salary £50 per annum.

BIRMINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Surgical Officer. Salary £104 per annum, with apartments, ration, attendance, &c.

BODMIN, CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £140 a year, rising to £160, with room, ration, laundry, and attendance.

BURY INFIRMARY.—Senior House Surgeon. Salary £110, with board, residence, and attendance.

CHICHESTER, WEST SUSSEX COUNTY ASYLUM AND GRAYLINGWELL MENTAL HOSPITAL.—Junior Assistant Medical Officer, unmarried.

Salary £150 per annum, with apartments, board, attendance, &c. Also Locum Tenens for 16 weeks, June-September. Term 3 guineas a week, with full board, rooms, attendance, &c.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £5 per annum, with board and residence.

CROYDON GENERAL HOSPITAL.—Junior House Surgeon. Salary £50 with board, laundry, and residence.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, S.E.—Assistant Surgeon. Also Clinical Assistants for three months.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—House Surgeon. Salary £120 per annum, with board, apartments, and washing.

GLASGOW EYE INFIRMARY.—Resident Assistant House Surgeon. Salary £75, with apartments and board.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium of £25.

HOSPITAL FOR WOMEN, Soho-square, W.—Resident Medical Officer for six months. Salary at rate of £50 per annum.

HUNDESFIELD INFIRMARY.—Senior Assistant and Junior Assistant House Surgeon. Salaries £60 and £50 respectively per annum with board, rooms, and washing.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTON DISPENSARY.—Assistant House Surgeon. Salary £75 per annum, with residence board, and washing.

LEICESTERSHIRE AND RUTLAND ASYLUM, Leicester.—Second Assistant Officer, unmarried. Salary £130, rising to £160, with apartment board, and washing.

LEWES DISPENSARY AND INFIRMARY AND VICTORIA HOSPITAL.—Resident Medical Officer. Salary £120 per annum, with apartment board, &c.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, and residence.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon and Anaesthetist, unmarried. Salary £60, with board lodging, and washing.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Dental Surgeon Also Medical Officer in Charge of the Electrical Department. Salary £52 10s. per annum.

MIDDLESBROUGH, NORTH RIDING INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per year, with residence, board, and washing.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Junior Resident Medical Officer. Salary £70 per annum, with board, residence, and laundry.

NORTHAMPTON GENERAL HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with apartments, board, washing, and attendance.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—House Physician, also House Surgeon, for six months. Salary at rate of 50 guineas per annum, with board and residence.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—House Physician. Salary £50 per annum, with board, residence, and laundry.

ROYAL MAR HOSPITAL, Dean-street, Soho, W.—House Surgeon, non resident, for six months. Honorarium at rate of £40 per annum.

ROYAL SOUTH LONDON DISPENSARY.—Honorary Surgeon-Dentist.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £80 per annum, with board and residence.

SEAMEY'S HOSPITAL SOCIETY, Greenwich, S.E.—For DREADNOUTH HOSPITAL: Two House Physicians and Two House Surgeons. Salary in each case £50 per annum, with board, residence, and washing.—For BRANCH HOSPITAL, Royal Albert Dock, E.: Senior House Surgeon and Registrar, also House Surgeon. Salary a former £100 per annum, and of latter £50 per annum, with board residence, and washing.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.

SUNDERLAND INFIRMARY.—House Surgeon. Salary £80 per annum with board, residence, and washing.

THORNTON HOSPITAL, Golden-square, W.—Assistant Surgeon.

WARRINGTON, LANCASHIRE COUNTY ASYLUM, Warrick.—Assistant Medical Officer, unmarried. Salary £150, rising to £200 with apartments, board, &c.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon, unmarried. Salary £50 per annum, with board, residence, and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Assistant Ophthalmic Surgeon.

WIMBORNE, DORSET COUNTY ASYLUM.—House Surgeon. Salary £65, rising to £75, with board, residence, &c. Also Honorary Physician in Ordinary.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

Births, Marriages, and Deaths.

BIRTHS.

HARDENBERG.—On March 25th, at Duffield House, Watford, the wife of E. F. H. Hardenberg, M.B., M.R.C.S., L.R.C.P., of a son.

PARKER.—On March 23rd, at Clonsilla, Kilnashin, Renfrewshire, the wife of James Parker, M.D., C.M., of a son.

TAYLOR.—On March 26th, at 35, Nicholas-street, Chester, the wife of J. G. Taylor, M.A., M.D., M.R.C.P., of a daughter.

DEATHS.

LEACH.—On March 11th, on the s.s. Argonaut, John Comyns Leach M.D., J.P., of The Lindens, Sturminster Newton, Dorset, aged 65 years.

ROSE.—On March 12th, suddenly, on P. and O. s.s. Navar, Dead Home, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., aged 23 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

SOCIETIES.

WEDNESDAY (2nd).—OBSTETRICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M.: Special General Meeting to receive the Report of the Council. Specimens will be shown by Dr. H. R. Andrews, Dr. Lewers, and Mr. J. H. Dauber. Paper:—Mr. J. D. Malcolm: On the Adviability of Removing the Cervix in performing Hysterectomy.

THURSDAY (3th).—NORTH-EAST LONDON CLINICAL SOCIETY (Tottenham Hospital, N.).—4 P.M.: Clinical Cases.

FRIDAY (5th).—WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—8 P.M.: Clinical Evening.

LITHOLOGICAL SOCIETY OF LONDON (20, Hanover square, W.).—5 P.M. Exhibition of Cases and Specimens.

WEST-EAST MEDICO-CHIRURGICAL SOCIETY.—Discussion on the Necessity for Organisation in the Medical Profession (opened by Dr. F. S. Toogood).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

TUESDAY (2nd).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moulton: Gynaecological Operations. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—Cliniques.—10.30 A.M.: Medical Out-patient (Dr. Auld). 2.30 P.M.: Gynaecological Out-patient (Dr. Giles), Surgical Out-patient (Mr. Edmunds). Surgical Operations (Mr. Carson).

WEDNESDAY (3rd).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Sanders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations. Dr. Robinson: Diseases of Women.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—Cliniques.—2.30 P.M.: Skin (Dr. Meachen), Eye (Mr. Brooks), Medical Out-patient (Dr. Whipple).

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.1).—5 P.M.: Demonstration.—Mr. Stuart-Low: Middle Ear and Labyrinth.

THURSDAY (4th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—2.30 P.M.: Demonstration on Fevers (Dr. P. Thomson at the North-Eastern Fever Hospital, St. Ann's-road, N.), Gynaecological Operations (Dr. Giles), Cliniques.—Medical Out-patient (Dr. Whiting), Surgical Out-patient (Mr. Carson). 3 P.M.: Medical In-patient (Dr. Chappell).

FRIDAY (5th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moulton: Gynaecological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. X Rays. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—9.30 A.M.: Cliniques.—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Surgical Operations (Mr. Edmunds). Cliniques.—Medical Out-patient (Dr. Auld), Eye (Mr. Brooks). 3 P.M.: Medical In-patient (Dr. Leale).

SATURDAY (6th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose and Ear. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations. Dr. Robinson: Diseases of Women.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed exclusively "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners. Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.
TO SUBSCRIBERS.

Will Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.O., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and not to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 15 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.O.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 3.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 27th, 1907.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rate-fall.	Solar Radiation in Vacuum.	Maximum Temp. in Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Mar 21	30.50	S.W.	—	80	54	37	33	41	Fine
" 22	30.35	W.	—	87	55	40	40	44	Fine
" 23	30.40	N.E.	—	95	56	39	39	41	Fine
" 24	30.39	W.	—	86	57	39	39	41	Fine
" 25	30.37	S.W.	—	78	56	39	39	40	Fine
" 26	30.44	S.W.	—	60	57	40	43	44	Foggy
" 27	30.50	S.	—	92	57	41	42	43	Foggy

During the week marked copies of the following newspapers have been received—Melbourne Argus, Scarborough Evening News, Standard, Cornish Times, Westminster Gazette, Liverpool Post, Manchester Guardian, Staffordshire Sentinel, Dublin Telegraph, Manchester Weekly Times, Glasgow Herald, Leeds Mercury, Daily Telegraph, Daily Chronicle, Gloucester Citizen, &c.

A FAMOUS ENGLISH SURGEON.

AN Australian correspondent has sent us a copy of the *Melbourne Argus*, dated Feb. 2nd, 1907, in which there appears a flaming advertisement of the Freeman and Wallace Electro-Medical Institutes under the above title. The institutes, we learn, cure "bladder diseases, kidney diseases, blood poison, lost vitality, varicocele, skin disorders, weakness, rupture, piles, &c.," and address themselves to "weak men" who desire to be "made strong," urging them to "get cured now," for "these diseases we cure. We care not who has failed to cure you." The title of the advertisement is explained by the fact that the institutes have secured the surgical services of "Dr. Kempster, M.R.C.S. Eng., L.R.C.P. Lond., M.S.A. London," of whom they say that he "is an expert in the rapid treatment and cure of men's diseases, and is late Civil Surgeon to the British War Office, London; late Medical Officer of Health, London (Battersea division); late Assistant Divisional Surgeon, London Police; and Deputy District Medical Officer to Wandsworth and Clapham Districts of London (which have an estimated population of half a million), and Fellow of the Incorporated Society of Medical Officers Health, London. Dr. Kempster's experience is large and valuable, and in the rapid treatment and cure of men's diseases, arising from any specific cause, or from exhaustion or heredity, he is an expert both in method and in scientific knowledge. His abilities are so rare and his knowledge of practical surgery so pre-eminent that he has been secured at an enormous salary by the principal of the Freeman and Wallace Electro-Medical Institutes of Melbourne and Sydney for the benefit of diseased and suffering men. Dr. Kempster has qualifications scarcely equalled by any operating surgeon in Australasia; his medical career in England has been distinguished by high achievements in conservative surgery. He is associated with Dr. Wallace, the Institutes Chief Physician, who may be consulted free by any man requiring the best medical advice possible to secure. Special appointments may be made."

Our correspondent inquires, "Is the gentleman being personated or has he really joined with this disreputable clique? Perhaps you will kindly try to throw a light upon the matter for us poor Australians." We have made inquiries, from which it appears possible that Kempster is still upon the Medical Register, though he should not be. He never was in the least respect a famous surgeon and his present occupation as a partner of quacks and a decoy for dupes does not surprise us.

APPARATUS FOR ELEVATING THE HIPS IN BED.

To the Editors of THE LANCET.

SIRS,—On p. 817 of THE LANCET of March 23rd are a picture and description of a new hip elevator made from the design of Dr. E. G. Gilbert. I would like to point out that four years ago (August 2nd, 1902) you published a picture and description of a similar apparatus identical in principle with the one figured in your present issue. In designing my "Sister Doria" bedrest I thought I was supplying a long-felt want, and having proved its comfort and also its capacity for carrying out all that is claimed for it—i.e., the prevention of slipping down in the bed—I am the more surprised that it is not generally known and in more general use.

I am, Sirs, yours faithfully,
Richmond, March 26th, 1907. GEORGE W. ORD.

P.S.—I might call attention to the fact that Messrs. Allen and Hanbury registered the "Sister Doria."

* * Mr. Ord is correct in his facts. But, after all, both devices are only the obvious outcome of the old household method of keeping the patient up by a small chair, placed in the bed, so that it rests on the front edge of the seat and the front of "the back."—ED. L.

A SELF-FILLING FOUNTAIN PEN.

A VERY large proportion of the persons engaged in the professional and commercial worlds now use a fountain pen of some sort, carrying it with them as regularly as they do their watch, so that it is not surprising that the market offers a large choice of such contrivances or that new inventions claiming various advantages are frequently in evidence. The fountain pen has unquestionably been improved in detail. We do not call to mind that any pen other than the "Conklin" has been improved in the direction of doing away with the accustomed method of replenishing the supply of ink by means of the glass dropper with its indiarubber teat. The Conklin Pen Co., through American Agencies, Limited, 38, Shoe-lane, London, E.C., have submitted to us the "Conklin" pen, for which no filler is required; the interior of the pen is, in fact, the filler and the reservoir for the ink. The operation for filling the pen is simple. Give a collar in the middle of the pen a quarter turn, place the point of the pen in a receptacle containing ink, press a crescent-shaped piece of steel over the collar, and the pen is filled. Turn back the collar and the reservoir is closed. In our hands the pen performed its mechanical duty admirably and also has proved a good instrument to work with.

THE VENTILATION OF HATS: AN EXPERIMENT.

WE have received from the Patent Padded Hat Co., of Bradford-on-Avon, a specimen of a "ventilated" hat, in which a simple but perhaps new idea is developed. The hat is of the common shape known as a "bowler" (Amer. "Derby," Canad. "Christie," Fr. *Melon*), though

many dictionaries apparently refuse to recognise the word. The internal leather band of the hat has sewn on to it six small pieces of thin leather about one and a half inches square, arranged in intervals around the band, and each piece incloses a pad of soft felt. The hat, which is perforated in the crown, has no lining but in other respects, such as in the band, brim, and binding, it is similar to the usual type of bowler. There is ample room for ventilation all round the head, a free passage of air being permitted between the ventilation in the crown and the air spaces next the skull. There is no doubt that hats should be properly ventilated and they should not fit so tightly as to leave a mark or ridge on the forehead, for this means interference with the nutrition of the scalp. But the general public is rather conservative in such matters. It has got on till now with a hat fitting the head, and whether it will appreciate the endeavour to convert it to the "ventilated" hat we do not attempt to guess. The idea, however, is a sound one, and may be quite novel but has not something like it been adopted in the construction of pith helmets?

BRITISH MEDICAL BENEVOLENT FUND.

To the Editors of THE LANCET.

SIRS,—I shall be grateful to anyone who has clothing for men, women, or children to spare for distribution to distressed members of the profession or their families if they will send such articles of clothing to the address given below, where I will receive and send them on as I have done hitherto.—I am, Sirs, yours faithfully,

EDWARD HART.

24, Randolph Crescent, Malda Hill, W., March 11th, 1907.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopaedic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

TUESDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2.30 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (3 P.M.), Ophthalmic, 2.15 P.M., Tottenham (2.30 P.M.).

WEDNESDAY (3rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (2 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (3 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (3 P.M.), National Orthopaedic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Free (2 P.M.), Royal Orthopaedic (3 P.M.), Children, Gt. Ormond-street (3.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

THURSDAY (4th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West (1.30 P.M.), London (2 P.M.), Gt. Northern Central (Gynecological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopaedic (9 A.M.), Royal Free (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynecological, 2.30 P.M.).

FRIDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopaedic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (6th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (3 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3.30 A.M.).

At the Royal Eye Hospital (3 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

The Hunterian Lectures

ON

THE PATHOLOGY OF MELANOTIC GROWTHS IN RELATION TO THEIR OPERATIVE TREATMENT.

*Delivered before the Royal College of Surgeons of England on
Feb. 25th and 27th, 1907.*

By W. SAMPSON HANDLEY, M.S. LOND.,
F.R.C.S. ENG.,

HUNTERIAN PROFESSOR; ASSISTANT SURGEON TO THE
MIDDLESEX HOSPITAL.

LECTURE I.

Delivered on Feb. 25th.

MR. PRESIDENT AND GENTLEMEN,—The subject of these lectures attracted me on account of the very unfavourable results of operation in melanotic growths, and the belief that these results are capable of improvement is my principal excuse for claiming your attention. I shall deal almost exclusively with those pigmented growths which arise in the skin. My work on the subject was mainly carried out in the Middlesex Hospital Cancer Research Laboratories during my tenure of the "Richard Hollins" Cancer Research Scholarship. To the Cancer Investigation Committee and to the director of the laboratories, Dr. W. S. Lazarus-Barlow, my best thanks are due for the facilities afforded me and for permission to reproduce certain illustrations from the Archives of the Middlesex Hospital.

Many scientific men have held that the pursuit of useful knowledge, as distinct from the pursuit of knowledge for its own sake, degrades both the research and the student below the level of serious consideration. If that is really the case I must confess my unworthiness of the honour which this College has bestowed upon me, an honour which I would here gratefully acknowledge. But the utilitarian aim which is frankly avowed in the title of my lectures hardly needs a defence before an audience in daily contact with the pitiable urgent problems of cancer in the individual.

I have one other object in view. Two years ago I had the privilege of laying before you certain observations on the dissemination of carcinoma, observations which proved that the obscure and insidious process of permeation—the growth of tendril-like cylinders of cancer cells along the finer lymphatics which surround the primary growth—is the main factor in the dissemination of cancer of the breast. On the present occasion I propose to lay before you the results of parallel observations on melanotic sarcoma and to compare and contrast the mode of spread of these two varieties of growth. Only by the separate study of each variety of growth, a long and laborious task, can the element of theory and of unsafe analogy be eliminated from our knowledge of dissemination and from surgical practice. In my opinion, no more urgent piece of work, and none more certain of immediate result, confronts those who are investigating cancer. In this connexion the valuable work of Mr. G. Lenthal Cheatle upon the spread of squamous carcinoma of the tongue and lip, and that of Mr. C. H. Leaf and of Mr. J. F. Dobson upon lymphatic anatomy, deserve more than a passing mention.

The scope of morbid anatomy is by no means restricted to the revelation of details of structure. Its newer methods are capable of throwing light on the physiological problems of cancer and of indicating promising lines of experiment. In illustration of this statement I may be permitted to remind you that the destructive action of the blood on cancer cells, which was demonstrated by M. B. Schmidt in the pulmonary arterioles, and which I inferred independently three years ago from a study of metastatic distribution in the cancer research laboratories of the Middlesex Hospital, has received experimental confirmation in recent work on the prevention and treatment of mouse cancer, both in the laboratories of the Imperial Research Fund¹ and in America.² To you, Sir, who are so closely connected with both the institutions I have mentioned it must be a source of pleasure to see their work thus converging from opposite

sides upon the same problem. Experimental work and morbid anatomy are the two eyes of cancer research, and to deny the use of either is to forfeit the advantages of binocular vision.

For the sake of convenience it is necessary to depart from the logical order of my subject and to reserve for my second lecture certain problems as to the etiology and nature of malignant melanotic growths and the consideration of their surgical treatment. The present lecture will be concerned with a study of their mode of spread, chiefly based upon the following case.

ABSTRACT OF NECROPSY.

Necropsy No. 186, the Middlesex Hospital, 1905. The body is that of an emaciated woman, aged 34 years. At the insertion of the right tendo Achillis is a small healthy linear scar, where the primary melanotic sarcoma was excised. In Scarpa's triangle on the right side is a considerable mass in the situation of the femoral glands. Beneath the skin over and around this mass are very numerous discrete black nodular growths, occupying an area roughly circular in shape and perhaps eight inches in diameter. (See Fig. 1.) The growths become smaller in all directions the further they are situated from the femoral glands, until apparently healthy skin is reached. On the back, at the level of the tenth dorsal vertebra, there is a patch three inches square studded with similar cutaneous growths. The right breast shows enormous enlargement, and in the skin over the breast are many similar growths. The left breast, though smaller, is in a like condition. Scattered over the front of the thorax and the abdomen are numerous subcutaneous nodules, and there is one on the face in the left malar region. There is far more growth on the right side of the body than on the left. No deposits are present in the skin and subcutaneous tissue of the left leg below the level of the symphysis pubis. There are numerous deposits in the calvaria; a few small nodules are present in the brain and in the thyroid body. Several deposits are found on the posterior surface of the sternum. The cardiac muscle contains numerous nodules and a few are scattered throughout the lungs. The liver weighed 10½ ounces. The only abdominal viscera free from new growth are the spleen, ureters, bladder, and stomach. Numerous nodules are pendent from the mucosa of the intestines. The left femur shows a fracture one inch below the great trochanter, surrounded by a mass of non-pigmented new growth. All the muscles examined show minute specks of melanotic pigment. As regards the lymphatic glands, growth is found in the right femoral and internal iliac glands (and to a less extent in the lumbar glands) and in the cervical and axillary glands on both sides. For the investigation of lymphatic spread in this case it was natural to choose the tissues in the neighbourhood of the largest mass of lymphatic glands—that is to say, the tissues of the right groin. A strip of the parietal tissues passing down the thigh from this mass of glands was removed for examination. It measured 17 cm. in length, and extended from the lower edge of the mass of growth which occupied the situation of the inguinal glands vertically down the anterior surface of the thigh to a point about three inches above the knee. It traversed and passed well below the circum-inguinal area of visible subcutaneous nodules of growth (see Fig. 1). The strip included skin, subcutaneous fat, deep fascia, and a thin layer of muscle. It was frozen and subdivided longitudinally into three thinner strips. One of these was submitted to microscopic examination, while the two other strips, each about three millimeters thick, were mounted as naked-eye specimens.

METHOD OF PREPARATION.

The strips were prepared by a modification of a method which I first employed in 1904 for demonstrating carcinomatous nodules in the parietal tissues in cases of breast cancer. For this purpose long strips of the skin and subjacent parietal tissues radiating in any selected direction from the primary growth were cut from the cadaver and were subsequently stained and rendered translucent. The staining method employed had the defect common to all stains, that it is not specific for cancerous tissues. Moreover, time has shown that the specimens, when mounted in xylol for preservation in a museum, undergo continuous shrinkage and lose their purity of colour, so that after the lapse of two years their deterioration is marked. Melanotic sarcoma offers an ideal field for the application of this method in a simplified form, because the

¹ Brit. Med. Jour., July 25th, 1906.

² Gaylord. Medical Record, Oct. 22th, 1906.

Communications, Letters, &c., have been received from—

- A.—Messrs. Allen and Hanburys, Lond.; After-care Association, Lond., Secretary of.
- B.—Sir Lauder Brunton, Lond.; Mr. W. H. Brooks, Leicester; Professor Bonomo, Padua; Mr. E. Stanmore Bishop, Manchester; Messrs. C. Bogler and Co., Lond.; Bedford County Hospital, Secretary of; Birkenhead Union, Clerk of; Dr. W. B. Barton, Lond.; Bury Infirmary, Secretary of; Dr. E. T. Born, Port Stanley, East Falkland Island; Dr. F. G. Bushnell, Brighton; British Medical Benevolent Fund, Lond., Hon. Secretary of.
- C.—Dr. G. H. Coltart, Lond.; City of London Asylum, Stone, Dartford, Medical Superintendent of; Committee of Medical Men using Motors, Lond., Hon. Secretary of; Messrs. B. Cook and Co., Lond.; Dr. W. F. Colclough, Sidmouth; Mr. Harrison Cripps, Lond.; Dr. G. H. Colt, Lond.; Captain J. T. Clapham, R.A.M.C., Felixstowe; Mr. James Henry Cook, Birmingham.
- D.—Messrs. Davies and Co., Lond.; Denvor Chemical Co., New York; Messrs. F. Davidson and Co., Lond.; Devonport Corporation, Medical Officer of Health of.
- F.—Messrs. Foster, Brown, and Co., Montreal; Dr. H. S. Frakes, West Didbury; Messrs. Fairchild Bros. and Foster, Lond.; Messrs. Fromy, Rogée, and Co., St. Jean d'Angely; Messrs. W. W. Flood and Co., Lond.; Mr. G. Fock, Leipzig; Faraday House, Putney, Secretary of.
- G.—Mr. William Gem, Krugersdorp, Transvaal; Mr. Roger N. Goodman, Kingston-on-Thames; Mr. Maurice A. Gersthwohl, Lond.; Glasgow Hye Infirmary, Secretary of; Staff-Surgeon H. W. Gordon Green, R.A.M.C., Devonport.
- H.—Mr. W. Heinemann, Lond.; Mr. Harry Hutchinson, East Ham; Huddersfield, Medical Officer of Health of; Messrs. O. J. Hewlett and Son, Lond.; Mr. O. C. Hawkes, Lond.; Mr. P. Maynard Heath, Lond.; I.—Messrs. Isaacs and Co., Lond.; J.—Mr. J. I. Jaffé, South Shields; Messrs. Jacob and Johnson, Winchester.
- K.—Dr. Oskar Kraus, Vienna; Messrs. Knoll and Co., Lond.; Dr. Kothe's Sanatorium, Friedrichroda; Messrs. Kapp Bros., Lond.; Messrs. H. S. King and Co., Lond.; Messrs. R. A. Knight and Co., Lond.
- L.—Mr. H. K. Lewis, Lond.; Light Motors, Lond., Manager of; Messrs. J. Lyon and Co., Lond.; Mr. H. Lamond, Glasgow; Messrs. Lee and Nightingale, Liverpool; Leeds and West Riding Medical-Chirurgical Society, Junior Secretary of; Dr. B. Cranston Low, Edinburgh; The Light Electric Motor Co., Seven Kings, Managing Director of; Mr. J. Lott, Liverpool; Messrs. Leathwaite and Simmonds, Lond.
- M.—Dr. John Merson, Willerby; Mr. A. H. Mayne, Manchester; Manhu Food Co., Liverpool; Dr. D. McLean, Carlisle, Australia; Dr. A. Yale Massey, Kansanshi, North-West Rhodesia; Manchester Medical Agency, Secretary of; Macleodfield General Infirmary, Secretary of; Mr. R. W. Murray, Liverpool.
- N.—North London or University College Hospital; National Dental Hospital, Lond., Secretary of; Nemo; Messrs. W. F. and H. Nosotte, Lond.; North Riding Infirmary, Middlesbrough, Secretary of; Mr. H. Needes, Lond.; Mr. J. C. Needes, Lond.
- P.—Mr. Y. J. Pentland, Edinburgh; Messrs. Peacock and Hadley, Lond.; Messrs. Pocock Bros., Lond.

- Q.—Queen's Hospital, Birmingham, Secretary of.
- R.—Mr. Hugh M. Rigby, Lond.; Dr. W. T. G. Robinson, Poole; Royal Botanic Society, Lond.; Royal Sanitary Institute, Lond., Secretary of; Royal Portsmouth Hospital, Secretary of; Royal Society of St. George, Lond., Council of the; Mr. A. W. Roberts, Torquay.
- S.—Mr. L. Strangways, Torquay; Dr. H. Batty Shaw, Lond.; Dr. Jay P. Schamberg, Philadelphia; Strangers' Home for Asiatics, Lond., Hon. Secretary of; Dr. J. E. P. Sheara, Wells; Dr. G. H. Savage, Lond.; Dr. J. Snowman, Lond.; Scholastic, Clerical, &c., Association, Lond.; Star Engineering Co., Wolverhampton; Major C. G. Spencer, R.A.M.C., Lond.
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- V.—Messrs. J. W. Vickers and Co. Lond.
- W.—Mr. E. H. Worth, Lond.; Colonel A. G. Wyman, Lond.; West Kent General Hospital, Maldstone, Secretary of; Messrs. J. Wright and Co., Bristol; Dr. S. H. West, Lond.

Letters, each with enclosure, are also acknowledged from—

- A.—Mr. B. Arnold, Lond.; Ariso Co., Lond., Secretary of.
- B.—Mr. P. Bryan, Gateshead; Mr. A. Banks, Lewes; Mr. H. Butterfield, Northampton; Dr. P. B. Bennie, Melbourne, Australia; B. P.; Messrs. J. N. Bishop and Anderson, Lond.; Mr. H. J. P. Bourne, Halling; Messrs. J. Broadbent and Co., Lond.; British Oxygen Co., Lond., Secretary of.
- C.—Mr. M. Cheale, Bournemouth; Dr. H. K. Campbell, Watford; Dr. C. J. Cullingworth, Lond.; Messrs. Callard and Bowser, Lond.; C. P.; Messrs. Crews and Son, Exmouth; Mr. F. W. Clarke, Chorlton-cum-Hardy; C. B. M.
- D.—Messrs. W. Duff and Co., Lond.; D. L.
- E.—E. M. H.
- F.—Mr. C. A. Francois, Durham; F. B. C.
- G.—Sir W. Gowers, Lond.; G. G. D.; Messrs. Grindlay and Co., Calcutta.
- H.—Dr. W. B. Heywood, Newbury; Messrs. Abel Heywood and Son, Manchester.
- I.—Mr. A. Ireland, Turk's Island.
- J.—J. M. K., J. H. M. M.; J. D. M.
- K.—Messrs. Keelo and Co., Lond.
- L.—Dr. F. J. Liddell, Folkestone; Captain J. O. Holdich, Leicester, I.M.S., Calcutta; Leeds Public Dispensary, Secretary of.
- M.—Dr. E. J. McKenna, Carlisle; Mr. W. J. Morgan, Drynan; Mr. H. Messenger, Saltburn-by-the-Sea; Messrs. P. Mundy, Gilbert, and Co., Birmingham.
- N.—Surgeon-Captain J. Norman, Madras; Mr. W. S. Neave, Bournemouth.
- O.—Mr. A. W. Ormond, Lond.
- P.—Dr. S. P. Phillips, Lond.
- R.—Mr. C. A. Ryde, Brussels; Mr. W. Ramsay, Melbourne; Reuter's Telegram Co., Lond.; Mr. L. B. Rawling, Lond.; Dr. J. D. Rolleston, Lond.; Messrs. Raimes and Co., York.
- S.—Mr. H. W. Scriven, Lond.; Messrs. Spiers and Pond, Lond.; Saarbaach's News Exchange, Mainz; S. A. S.
- T.—Dr. J. G. Taylor, Chester; Mr. D. J. Thomas, Nantmoch; Dr. J. G. Taylor, Chester; Mr. P. Templeton, Worthing.
- V.—Professor A. M. Vargas, Barcelona; Vinolia Co., Lond.
- W.—Mr. O. Worth, Lond.; W. E. P.; W. D. F.; W. B.; Messrs. J. K. Wilson and Co., Glasgow; W. B.
- Y.—Dr. R. A. Yeld, Lond.

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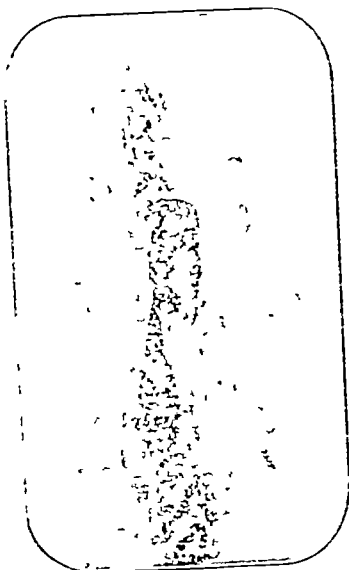
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Battle has also described a case in which it occurred. At the risk of being tedious, I must remind you that my investigations on the spread of permeation in breast-cancer³ showed

FIG. 3.



An artery filled by melanotic growth from the proximal end of Fig. 2.

three zones surrounding the primary growth. Farthest from it is the zone of fascial permeation, where the permeated fascial lymphatic plexus forms the "microscopic growing edge" of the carcinoma. Here there is no interstitial invasion of the tissues; the cancer cells are found only in the interior of the lymphatic vessels and they occur exclusively in the plane of the deep fascia, while the overlying skin and the underlying muscle are normal. Within this region is a zone, in which an inflammatory reaction (perilymphatic leucocytosis and fibrosis) has been set up owing to the distension and rupture of the lymphatics by the growing cancer cells which they contain. In this zone cancer cells are seen spreading along the fine tributary lymphatics upwards towards the skin and downwards into the muscles and originating nodular metastases in the lymphatic capillary areas of these layers. Nearest to the primary growth comes a third zone in which all or most of the permeated lymphatics, strangled by their newly-formed envelope of fibrous tissue, have entirely disappeared. Consequently, in this region the only cancerous foci are isolated nodules, becoming larger and invading the tissues to an increasing depth until the primary growth is reached.

Now the process of permeation is largely a mechanical one and its spread around a given focus is chiefly determined, like that of an injection fluid, along the line of least resistance. If melanotic sarcoma spreads by permeation one would expect that, round the original focus of growth, the same three zones would be present. In this specimen (Fig. 2) each of them is, I think, clearly indicated. Here is the zone of fascial permeation, represented by small black dots and lines upon and just over the deep fascia. The skin and the muscles in this region are quite free from growth. The minuteness of the black lines indicates that the lymphatics have been recently invaded and that they have not yet been distended or ruptured by the growth within them. Somewhat nearer the primary growth, the coarseness of the lines upon the deep fascia indicates rupture of the lymphatics and small nodules are seen in course of formation over and under the deep fascia. The

skin is not yet attacked, but arcorescent lines of growth are seen running up to it from below. Yet a little nearer the proximal end of the strip the growth has reached and filled up the convergent bundles formed on the under aspect of the dermis by the lymphatics draining the skin into the underlying fascial plexus. Here, too, is seen the first indication of perilymphatic fibrosis—the process which destroys permeated lymphatics—for some of the black lines are vague and moniliform.

We now come to the zone nearest the original focus—the zone of isolated nodules. You will notice the disappearance from the deep fascia of the lines and dots which indicate fascial permeation. But the large nodules which now make their appearance in the various layers are not isolated as in breast-cancer. A network of coarse black lines is still present. This network indicates two fundamental differences between the mode of spread of breast-cancer and that of melanotic sarcoma. First, in melanotic sarcoma the process of perilymphatic fibrosis is only very partially successful in destroying the permeated lymphatics. Secondly, in melanotic sarcoma, as I shall be able to show, blood-vessels are frequently invaded from contiguous permeated lymphatics. The network of coarse black lines at the proximal end of the strip largely consists, not of permeated lymphatics, but of blood-vessels filled by growth.

MICROSCOPIC EXAMINATION OF THE STRIP.

I have now to prove the correctness of the explanation which I have suggested for the appearances seen in the naked-eye specimen. A strip parallel to and adjoining the one which I have just described was divided into nine blocks and examined histologically along its whole length. It would be tedious to plunge into the sea of detail presented by a microscopic section 17 centimetres in length, and I shall briefly summarise the appearances met with in each of the nine blocks, commencing at the end close to the massive gland deposits and travelling radially away from them. A gradual and regular change will be noted as the strip passes

FIG. 4.



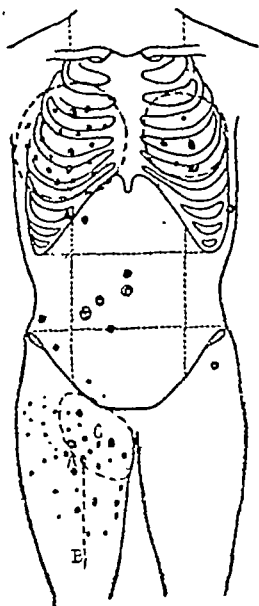
× 50. From the proximal end of the strip near the mass of growth which represented the inguinal glands, shows a cylindrical cord of melanotic growth lying unencapsuled in the perivascular tissues and replacing the concomitant venous and lymphatic vessels. D is the artery, C a small vein containing a cylinder of dense growth infiltrated by leucocytes. The circle B shows the situation of Fig. 3.

³ Cancer of the Breast and its Operative Treatment, by W. Sampson Handley. Murray, 1906.

specimens can be mounted in an absolutely unstained condition. The dark colouration of this particular variety of growth is the equivalent of a specific stain for malignant tissues, a desideratum which is at present lacking in the case of other growths. The two strips having been frozen and cut were placed in methylated spirit for 12 hours, and subsequently in acetone for a similar period; they were thence transferred to xylol for a few hours, and finally mounted in liquid paraffin (parolein) as museum specimens in flat-sided jars.

The use of acetone as a dehydrating agent in place of absolute alcohol was suggested to me by Dr. Victor Bonney, while the employment of liquid paraffin as a mounting fluid is an improvement due to Mr. Cecil W. Rowntree. In contrast to xylol liquid paraffin is not appreciably volatile; moreover, it is perfectly transparent and tends to make the specimen soft and pliable rather than to harden it. The only remaining doubt, whether it ultimately exercises any deleterious action on the specimen or is itself discoloured by the action of light, can only be settled by the lapse of time.

FIG. 1.



Showing all the visible subcutaneous nodules of melanotic growth present in the anterior aspect of the body, except one on the face. The dotted line A B shows the position and extent of the strip of tissue removed for examination. The dotted circles in the mammary region represent prominent masses of secondary growth in the breasts. Note that the growth was on the right heel and that most of the secondary nodules are situated on the right side of the body.

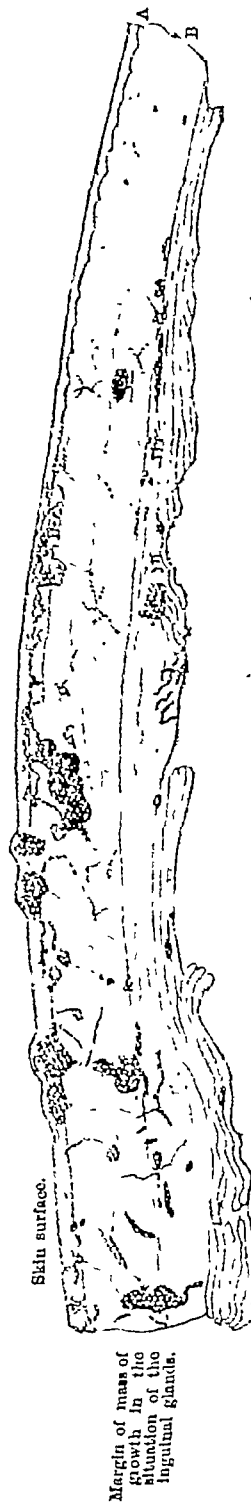
NAKED-EYE DESCRIPTION OF THE STRIP.

At the end nearest the inguinal glands the subcutaneous tissue is not transparent, but has a ground-glass appearance resembling that of the cornea in keratitis. Further away, towards its distal end, the fatty subcutaneous tissue has cleared perfectly and is quite transparent. As will be seen later the cloudiness of the tissues at the proximal end of the strip is due to round-celled infiltration and fibrous tissue formation; in other words, to the inflammatory reaction which, as I showed in the case of breast-cancer, accompanies the later stages of permeation. The melanotic foci present in the strip stand out in vivid contrast to the normal tissues as black blotches, sinuous lines, and dots (Fig. 2). The blotches represent spherical nodules, while the lines and dots quite clearly represent vessels lying in the plane of the strip or cut transversely as they penetrate it at right angles. The question at once arises, Are these vessels blood-vessels or lymphatics? Evidently the naked-eye appearances must be interpreted by the aid of the microscope, and the question must be for the present reserved.

The next point to notice is that the growth is not invading the tissues in the form of isolated embolic foci scattered at random here and there in the vessels; it is growing along the vessels and choking them up. At various points vessels filled by growth can be traced for some distance along the strip, giving off at intervals smaller branches, which also are

full of black material. Besides, the regular distribution of the black lines and dots indicates a complete injection of one or both of the vascular systems, spreading from the glands centrifugally, just as an artificial injection-fluid would spread from its point of introduction.

FIG. 2.



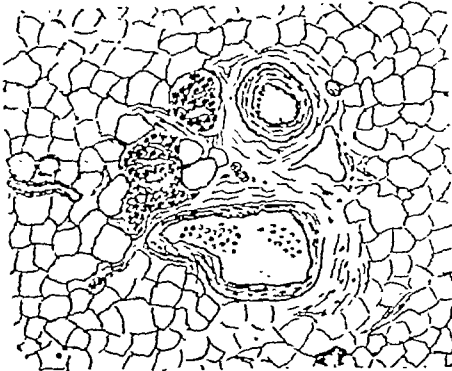
Reproduction of drawing, natural size, of a translucent strip of the skin and underlying tissues taken in a radial direction from the mass of growth. In this situation of the inguinal glands to demonstrate the centrifugal spread of permeation. Note that the growth extends much further along the deep fascia than along the skin or in the muscle. A, Skin. B, Subcutaneous fat, separated by the deep fascia from C, a thin layer of muscle.

I will ask you to assume, in anticipation of the microscopic proof, that this process is primarily one of lymphatic permeation. The occurrence in melanotic sarcoma of actual growth along the lymphatics seems to have been first observed and described, though not systematically investigated, by Campbell de Morgan at the Middlesex Hospital. Mr. W. H.

LOCAL DISSEMINATION AROUND THE RIGHT INGUINAL GLANDS.

The spread of subcutaneous nodules in all directions from the invaded mass of inguinal glands (see Fig. 1) indicates the working of a process of local centrifugal spread from point to point around these glands. The nature of this process is made clear by the microscopic findings which are just been described. Its various stages, from the most advanced to the earliest, are seen successively as the selected radial section is traced outwards from the centre of the mass

FIG. 7



Block 5, close to the deep fascia, 3 obj., No. 8 oc. A normal artery and vein are accompanied by two microscopic cords of growth, which doubtless represent their comitant lymphatics. To show that lymphatic invasion precedes invasion of the blood-vessels. Cf. Fig. 6.

of glands. Since the strip was taken down the limb and therefore against the flow of lymph the force of the lymph stream can have taken no share in this process of local centrifugal dissemination, at any rate, in the particular radial section examined.

It is obvious, both from Fig. 2 and from the microscopic sections, that the process is one of continuous growth of sarcoma along the vessels. And since towards the distal end of the strip only the lymphatic vessels are invaded and the blood-vessels are normal it is clear that lymphatic permeation is the initial process in the local centrifugal dissemination which we are discussing and that invasion of the blood-vessels—present only at the proximal end of the strip—is a secondary consequence in point of time, though not in point of importance.

INVASION OF BLOOD-VESSELS FROM COMITANT PERMEATED LYMPHATICS.

The tendency of melanotic sarcoma to spread along the perivascular tissues immediately outside the blood-vessels has been noticed by Borst. His explanation of the fact is a teleological one—namely, that blood is a necessary food for the production of melanin and that consequently the sarcoma cells are attracted towards the blood-vessels by a kind of chemotaxis. The true explanation appears to be a simple anatomical fact. The lymphatic vessels along which permeation extends usually run in company with arteries and veins.

Figs. 3 to 8 show the various events which lead to the invasion first of veins and later of arteries from comitant permeated lymphatics. Figs. 6 and 7 show two permeated lymphatics lying near normal blood-vessels. Fig. 5 shows the rupture of permeated lymphatics and the proliferation of the sarcoma cells around the walls of the accompanying artery and vein. In Fig. 4 the vein has been infiltrated and destroyed by sarcoma and portions of its muscular wall are imbedded in a cord of growth which accompanies the artery. The artery itself remains intact. The last stage of the process is demonstrated in Fig. 3, where an artery filled by growth can be seen. These observations are parallel to those of Goldmann and Schmidt on the invasion of veins from lymphatics in carcinoma.

THE QUESTION OF SPREAD ALONG THE SKIN.

A glance at Fig. 2 shows that the skin is not invaded nearly so widely as the deep fascia. As in carcinoma of the breast, the question arises how invasion of the skin occurs. Does the growth spread along the hypothetical "deep

cutaneous" lymphatic plexus at the junction of the dermis with the subcutaneous fat, as was formerly assumed to be the case in breast-cancer? Between points situated 10 and 12 centimetres along the strip a definite meshwork of black lines in this place can be seen (Fig. 2) and a superficial glance suggests that this network is the permeated "deep cutaneous plexus," and that the growth is in fact spreading slowly in this plane as well as in the plane of the deep fascia.

Closer inspection shows the error of the supposition. Just beyond the furthest point of invasion of the skin the growth is seen creeping up to the skin from below, against the lymph stream, along the vertical tributaries which convey lymph from the skin to the lymphatic plexus of the deep fascia. The fallacious appearance of a permeated deep cutaneous plexus is evidently only a further stage of this process. As Sappey showed, the lymphatic vessels coming from the skin, though they freely interlace, do not form a true plexus at the deep aspect of the dermis. They simply interlace like the entangled boughs of adjacent trees in a thick wood. The only cutaneous lymphatic plexus is the sub-papillary plexus. As in carcinoma, the layers adjoining the plane of the main (deep fascial) lymphatic plexus, are attacked by the upstream extension of permeation along the tributary lymphatics of the fascial plexus.

FIG. 8.



The fascia lata crosses the field vertically. To the left is the subcutaneous fat, to the right the surface of the muscle. Small permeated lymphatics and one large one, which has ruptured, are seen upon the surface of the fascia. In the subcutaneous fat normal blood-vessels are visible accompanied by permeated lymphatics.

REGRESSIVE CHANGES IN MELANOTIC SARCOMA.

The abundant round-celled infiltration present at the proximal end of the strip and the absence from this region of a network of small permeated lymphatics, are clear indications that reparatory processes, inadequate for cure, are not wanting in melanotic sarcoma. Borst has already drawn attention to these regressive processes. Lymphatics and veins invaded by the growth may undergo destruction (if

under review. Briefly speaking, at the proximal end of the strip there is invasion of the arteries and veins, with much round-celled infiltration round the extra-vascular nodules which are present. Towards the distal end no invaded blood-vessels are to be seen, but the lymphatics are filled by fine cylinders of growth. Here there is little evidence of inflammatory reaction and hardly any interstitial invasion of the tissues.

Block 1 shows invasion of arteries and veins, but no reticulum of small permeated lymphatics. Many large nodules are present. Only one cord of growth is present on the deep fascia, probably a large permeated lymphatic which has escaped obliteration. In the subcutaneous tissue is an artery of some size, not accompanied by a vein, filled by degenerate growth (Fig. 3). There is fibrosis of the peri-arterial tissues, which contain here and there granules of pigment and recognisable tumour cells. Deeper down is a normal artery, accompanied by a cord of growth (Fig. 4) which certainly represents its comitant vein, for in it can be seen imbedded remains of muscular tissue. This cord probably replaces also the comitant lymphatics of the artery in question. Some very minute foci of obsolescent growth are present along the fibrous septa which join the skin to the deep fascia. These septa are littered with fine granules of melanotic pigment. As regards the skin, its invasion is not uniform but has occurred at points where the fibrous septa join it. The terminal subdermal expansions of these fibrous septa are densely infiltrated by sarcoma cells.

Block 2.—Save that no artery filled by growth is present the appearances are similar to those seen in Block 1.

Block 3 presents appearances like those in Blocks 1 and 2. It shows an artery filled by growth, the muscular coat of which is infiltrated in its whole thickness by sarcoma cells. Outside the artery are a few recognisable sarcoma cells mixed with round-celled infiltration. The view suggests itself that the artery has been invaded from an adjoining permeated lymphatic which has subsequently undergone fibrosis. A new phenomenon makes its appearance in this block. At various points along the fibrous septa are seen

relatively large thin-walled vessels lined by endothelium. Almost certainly they represent distended lymphatics.

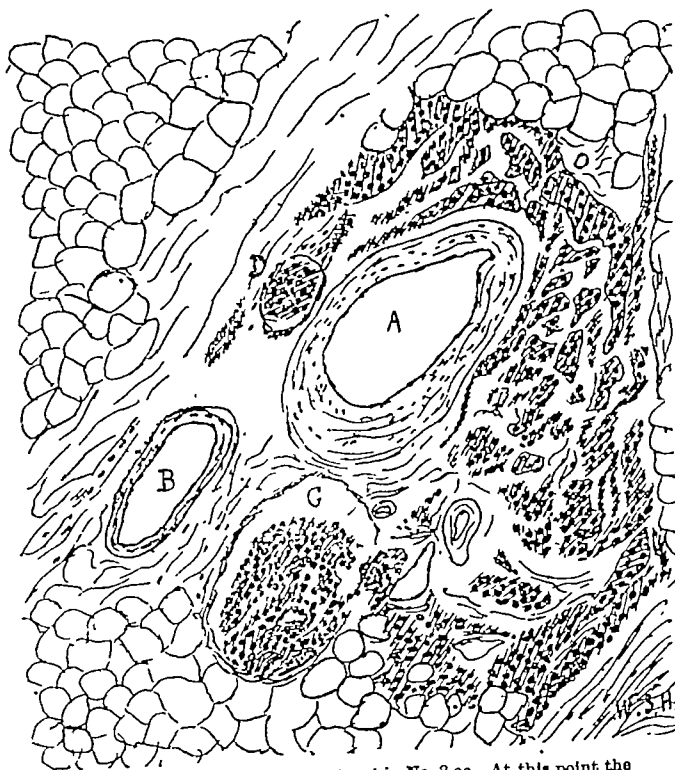
Block 4.—Nodular invasion of the skin has ceased. It

FIG. 6.



Normal blood-vessels accompanied by two lymphatics full of melanotic growth. From the zone of fascial permeation towards the distal end of Fig. 2. Photograph by the Pathological Laboratory, Mortimer-street, W.

FIG. 5.



Block 3, close to the deep fascia. 1 in. obj. No. 3 oc. At this point the growth has permeated the lymphatics and is infiltrating the tissues around but has not yet penetrated to the interior of the blood-vessels. A is an artery, B a vein, both normal. C is an endothelium-lined space (lymphatic), permeated by growth which has burst through its walls. D is a permeated lymphatic the wall of which is still unruptured.

shows merely one or two spaces lined by endothelium containing malignant cells. At one point an artery containing growth is present in the subcutaneous tissue, at another point are seen an artery and vein, both normal, accompanied by a permeated lymphatic.

Block 5.—Round-celled infiltration round the foci of growth, though still present, is becoming much less marked. No invaded blood-vessels are present either in this block or in the succeeding ones. The zone of permeation of the deep fascial plexus has now been reached and five foci of growth inclosed within endothelial walls are spaced out along the deep fascia. In places normal blood-vessels can be seen close to these spaces (Fig. 7). No large nodules are present in the section.

Block 6.—The appearances are similar to those in the preceding block. About 15 foci of growth, spaced out along the deep fascia, represent the permeated fascial plexus in cross-section (see Fig. 8). At two distinct points an artery and vein, both normal, are seen to be accompanied by two permeated lymphatics (Fig. 6).

Block 7 resembles Block 6. Here, again, normal blood-vessels are accompanied by permeated lymphatics. About six intravascular foci upon the fascia represent the permeated lymphatic plexus. Some of these lymphatics have ruptured and the growth within them is beginning to infiltrate the tissues. Microscopic invasion of the skin is still present.

Blocks 8 and 9.—These two blocks are characterised by the almost entire absence of round-celled infiltration round the minute foci of growth which are present. About eight of these foci, spaced out along the deep fascia, represent the permeated fascial plexus. No invaded blood-vessels are to be recognised, and at several points normal are to be seen lying close to permeated blood-vessels can be seen lying close to permeated lymphatics. A few scattered minute foci are present in the subcutaneous fat. The skin present in the subcutaneous fat. The skin present in the subcutaneous fat. The skin present in the subcutaneous fat.

ections until they may involve almost the whole of the face of the body. Usually, however, as in breast-cancer, patient dies before the distal portions of the limbs are acted. Such a mode of spread conclusively proves that embolism is not an invariable factor in the dissemination of skin nodules.

The following case⁵ may be quoted as a typical one. hers could be adduced if time allowed.

fr. D., et. 59, of fair complexion, had a mole situated midway between the umbilicus and the pubes. It commenced to enlarge in 7, while the surrounding skin assumed a brownish hue. Nine months afterwards the swelling was as large as a hen's egg, of a deep brown colour, firm and fleshy, broader at its apex than at its base and discharging an offensive ichorous fluid from its ulcerated surface. Some months after the appearance of this tumour several distinct nodules of similar structure sprang up around it. Owing to the discomfort and pain arising from the tumour it was excised, but recurred within six weeks. Soon the recurrent tumour was surrounded by bercles, some distinct, some confluent, of livid colour, at least 40 in number, forming a mass of disease extending from the spine of one arm to the other, and bearing some resemblance to a large bunch of red-coloured grapes. The inguinal glands were enlarged and the bercles continued to spread. Meantime the patient took exercise as attended to his business. Pains occasionally affected the tumour and adjacent parts, and an early and continued symptom was an excruciating pain just below the left kidney. The urine at times resembled porph. At length the constitutional symptoms became severe, with nausea, anorexia, restlessness, and depression. Dark blue dots arose in the vicinity of a mole on the sternum, others appeared in succession on the sides of the body and back, and very soon upon the forehead and scalp. Dyspnoea and dropsy came on, and his sufferings became severe until death relieved them. At the necropsy the sternum was thickly set with nodules, the lumbar and mesenteric glands were much enlarged. The spleen and bladder were the only abdominal organs free from disease. The chest was almost universally invaded. Similar diseased appearances were present on the skull cap and on the fascia covering the temporal muscles. The brain was healthy, and it is specially noted that with the exception of one speck in the leg the extremities were free from the disease.

This case, published in 1820, 14 years after Lasnece had described melanotic growths, was the first instance of malignant cutaneous melanoma described in England, and I may be permitted a word of pious reference to its chronicler, Dr. William Norris, a practitioner of Stourbridge. The cares of practice had not destroyed his enthusiasm for pathology, witness the following extract:—

When the abdomen, chest, and cranium were thrown open it was a most extraordinary phenomenon; thousands upon thousands of coal-black spots of circular shape and various sizes were to be seen closely besetting the shining mucous, serous, and fibrous membranes of most of the vital organs: I should think the most dazzling sight ever beheld by morbid anatomist. I shall never forget the pleasing thrill which came over me when I first beheld them. It would have puzzled the most powerful descriptive talent to have done full justice to such a novel and striking disease displayed so beautifully in endless profusion everywhere.

A country practitioner who loved his profession well enough to make a complete necropsy in private practice, and to ride 20 miles for the sight of a case of melanotic sarcoma, must have been in those days rather a rarity. Norris was, in fact, the intellectual grandson of John Hunter, as the pupil of Mr. Casner, one of Hunter's house surgeons. May we not trace in the pioneer work of Norris, in his power of accurate observation and record, and in his keen love of knowledge, the transmission through two generations, and by inference up to the present time, of Hunter's personal influence, and of the best qualities of his mind? The books and collections to which Hunter owes his nominal immortality are perhaps after all the lesser part of the legacy he has left.

As bearing upon the question of centrifugal spread it is of interest to note that when the primary tumour arises near the head the arms are attacked by subcutaneous nodules before the lower extremities; and, indeed, the lower limbs may remain entirely free from nodules until death occurs. Thus Anger⁶ records the following case:—

The patient was a woman of sixty, with a tumour as large as a nut upon the left cheek, which had been noticed for four months. Its growth was slow and painless. It was surrounded by four small jet-black tumours. The submaxillary glands were enlarged. Caustic was applied to the primary growth, but the satellite tumours were left alone and did not develop. The patient left the hospital in two months in a satisfactory state, but returned about a month later with multiple tumours of the form and colour of black currants upon the scalp, the neck, the arms, and the anterior and lateral parts of the chest and abdomen. The thighs, legs, and forearms were free from them. She died within a few days of readmission.

A COMPARISON BETWEEN THE MODE OF SPREAD OF CARCINOMA AND THAT OF MELANOTIC SARCOMA.

One of the aims of this research has been to test the conclusions on the spread of breast carcinoma at which I

⁵ William Norris, M.D.: Eight Cases of Melanosis, 1857; also Edinburgh Medical and Surgical Journal, October, 1820, p. 562.
⁶ Anger: Les Melanomes, Paris, 1856.

had previously arrived. For if it be granted that sarcoma can obtain access to and can exist within the lymphatic vessels its mode of spread within them must be to a certain extent determined by the same mechanical factors as in the case of carcinoma or of an artificial injection mass. My conclusions on the spread of breast-cancer were necessarily reached by microscopic methods only, but in melanotic sarcoma a direct appeal to the eye becomes possible; and Fig. 2 strengthens my former conclusions by indicating the identity of the mode of spread of melanotic sarcoma in the parietal tissues with the mode of spread which I inferred to take place in breast-cancer.

In the earlier stages the processes of dissemination are essentially identical in carcinoma and in melanotic sarcoma. Dissemination is initiated by the access of malignant cells to the fine lymphatics, followed by the centrifugal spread of permeation along the main lymphatic plexus into which the primary growth pours its lymph, and by secondary permeation of small tributaries of this plexus. Embolic invasion of the regional lymphatic glands occurs and around this fresh focus permeation recommences. Meanwhile, almost invariably in melanotic sarcoma and sometimes in carcinoma, invasion of the blood stream takes place, either by local infiltration of veins from comitant permeated lymphatics, or by malignant cells carried into the blood along the thoracic duct from invaded lymphatic glands. When this stage is reached dissemination in melanotic sarcoma and in carcinoma respectively develops along divergent lines. In carcinoma lymphatic permeation, aided by the escape of cancer cells into the serous cavities, usually remains to the end the main agent in producing secondary growths—a fact which appears to depend upon the almost invariable destruction of such epithelial cells as obtain access to the blood stream. The same mode of dissemination may sometimes occur in melanotic sarcoma, but as a rule the mesoblastic cells of melanotic sarcoma are able to thrive when lodged in a blood-vessel. Thus in the later stages of melanotic sarcoma the slow process of lymphatic permeation usually recedes into insignificance and the patient dies with almost universal deposits resulting from blood embolism—an event which only as a rare exception occurs in carcinoma.

The Lancelian Lectures

ON

THE INCREASE OF INSANITY.

Delivered before the Royal College of Physicians of London on March 14th, 19th, and 21st,

By G. H. SAVAGE, M.D. LOND.,
F.R.C.P. LOND.,

CONSULTING PHYSICIAN FOR, AND LATE LECTURER ON, MENTAL DISEASES, GUY'S HOSPITAL; CONSULTING PHYSICIAN TO THE IDIOT ASYLUM, EARLSWOOD.

LECTURE II.¹

Delivered on March 19th.

MR. PRESIDENT, FELLOWS, AND GENTLEMEN,—This lecture will be devoted to the causes of insanity. I shall only take a few of these such as will indicate sufficiently my views as to the probable increase among the insane. The three principal causes which I shall refer to are hereditary predisposition, alcoholic excess, and the influenzal poisoning.

The whole question of heredity is being studied with so much care that enormous numbers of facts have been added to our knowledge, but as yet no great and directing gold has been discovered, for though one has to accept it established that no mutilation or established acquisition transmitted to the offspring, yet I have to maintain many nervous peculiarities are passed on more or less from one generation to another. A considerable part of my lecture will be devoted to my views founded on my experience as to the amount and forms of neurosis which may be transmitted, and probably this is one of the most important that I have to consider. It is a very wide field that every case of insanity depends in some way on inheritance, and certainly the belief that insanity are equally dangerous, as far as

¹ Lecture I. was published in THE LANCET Oct.

the patient lives long enough) by a process of local inflammation essentially identical with the process of "perilymphatic fibrosis" which I have described in breast-cancer. Large secondary deposits, and in all probability even the primary growth itself (Fox), may sometimes be destroyed in a similar way. In this connexion my senior colleague, Mr. A. Pearce Gould,⁴ has lately recorded a very interesting case:—

H. S., *et. 38*, consulted Mr. Pearce Gould on June 23rd, 1933. A congenital mole on the front of his chest had begun to enlarge on June, 1902, and had been excised in October, 1932. A small healthy scar marked the site of the operation. It was soon followed by the appearance of tiny nodules in and under his skin. Mr. Gould found the nodules most numerous on the trunk, but they were scattered over almost the whole surface of the body, save that none were present on the lower limbs below the groins. On July 14th no new nodules had appeared and all the old ones were flatter and smaller. The enlarged glands were also smaller. On the 30th many of the nodules had disappeared altogether; others were present only as black stains, visible but not palpable. The glands had further diminished in size. On Oct. 1st he was found to have gained flesh and only two palpable nodules were present over the whole surface of the body. The glands in the groin were normal, those in the axillae but slightly enlarged. In February, 1934, two new nodules appeared near the right knee. In March the liver was enlarged and a fresh nodule appeared on the right side of the neck. The patient died in September, 1934, having been confined to his bed for only three or four days. While under Mr. Gould's care he took regularly a pill containing Venice turpentine and sulphur and amended an alcoholic habit which he had formed, but, as Mr. Gould remarks, the regressive changes which occurred were probably independent of these measures.

Mr. R. H. Jocelyn Swan has informed me of a somewhat similar case under his care in which macroscopic nodules of melanotic growth were observed to shrink and disappear.

CONCLUSIONS FROM EXAMINATION OF THE TISSUES IN THE INGUINAL REGION.

1. From the fairly regular distribution of skin nodules around the embolically invaded right inguinal glands it may be inferred that a process of local centrifugal spread, independent of the direction of the lymph current, took place around these glands as a focus.

Examination of a radial strip of the parietal tissues extending from these glands showed:—

2. That permeation of the lymphatics is the principal agent in this local centrifugal spread and that it occurs primarily and most extensively in the plane of the deep fascial lymphatic plexus.

3. Invasion of skin and muscle is due to upstream permeation of the lymphatics which carry lymph from these layers to the fascial lymphatic plexus.

4. Owing to the fact that arteries and veins usually run in close contiguity to lymphatic vessels lymphatic permeation is followed by infiltration of the walls of veins, and later of arteries, and by intrusion of the growth into the lumen of the blood-vessels. The importance of invasion of the veins with regard to pulmonary and systemic dissemination is obvious.

5. The order in time of these various events is deduced from the orderly sequence of processes seen as the strip of tissues is traced from its distal end towards the mass of glands which formed the local centre of infection.

6. Regressive changes, due to inflammation excited by the growth, may occur in melanotic sarcoma.

THE SHARE OF EMBOLISM IN PRODUCING THE METASTASES.

The direct evidence that the majority of the skin nodules present did not originate from emboli carried by the blood stream has already been adduced. It is interesting to note that nearly all the subcutaneous nodules present were situated on the same side as the primary growth. This distribution is inconsistent with the embolic origin of these particular secondary growths, and strongly suggest a process of local spread from point to point. On the other hand, it is probable that most of the visceral deposits, perhaps those in the breasts and a few of the subcutaneous nodules, took their origin in blood embolism. Such an embolic origin could be clearly traced in the kidneys, where the glomerular tufts were occupied in places by melanotic material, which at other points had burst into Bowman's capsule. Although "tissue-predisposition" is doubtless, as Mr. Stephen Paget showed, a factor in the survival of embolised fragments of

growth, it is difficult to explain on these lines the relative freedom from metastases of the subcutaneous tissues of the left side, as compared with those of the right side.

As soon as permeation in the lymphatics round the embolically invaded right femoral glands attained a radius of spread reaching to the level of the umbilicus—the dividing line between the territory of the inguinal and the axillary glands—embolic invasion of the axillary glands would occur. Local centrifugal spread around these glands, reaching a maximum in the rich lymphatic network of the breast, would account for the subcutaneous nodules present over the chest and for the mammary masses of growth.

DISEMINATION AROUND A PRIMARY MELANOTIC SARCOMA.

Since in this case the primary growth had been removed by operation, it was not possible to study centrifugal lymphatic spread around the primary focus, but only around a

FIG. 9.



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secondary focus—the embolically invaded inguinal glands of the right side.

No opportunity of investigating the spread of permeation round a primary focus of melanotic growth has fallen to me. Such opportunities must be extremely rare, for the examination of excised growths is unsatisfactory. But there is no lack of clinical evidence that permeation does occur round the primary growth as the initial step in the process of dissemination, a step soon followed by embolic invasion of the nearest glands along the trunk lymphatics. The appearance of subcutaneous nodules near the scar is one of the commonest sequels to the removal of a melanotic growth. As in the case of breast-cancer such nodules must be regarded as "efflorescences," not as a rule due to insufficient removal of skin but to incomplete removal of the permeated area of the fascial plexus. Generally subcutaneous nodules first appear close to the primary growth and spread from it in all

⁴ Pearce Gould: Archives of the Middlesex Hospital, vol. ix.

directions until they may involve almost the whole of the surface of the body. Usually, however, as in breast-cancer, the patient dies before the distal portions of the limbs are affected. Such a mode of spread conclusively proves that blood embolism is not an invariable factor in the dissemination of skin nodules.

The following case* may be quoted as a typical one. Others could be adduced if time allowed.

Mr. D., æt. 59, of fair complexion, had a mole situated midway between the umbilicus and the pubes. It commenced to enlarge in 1817, while the surrounding skin assumed a brownish hue. Nine months afterwards the swelling was as large as a hen's egg, of a deep brown colour, firm and fleshy, broader at its apex than at its base and exuding an offensive ichorous fluid from its ulcerated surface. Some few months after the appearance of this tumour several distinct brown nodules of similar structure sprang up around it. Owing to the discomfort and pain arising from the tumour it was excised, but recurred within six weeks. Soon the recurrent tumour was surrounded by tubercles, some distinct, some confluent, of livid colour, at least 40 in number, forming a mass of disease extending from the spine of one os ilium to the other, and bearing some resemblance to a large bunch of dark-coloured grapes. The inguinal glands were enlarged and the tubercles continued to spread. Meantime the patient took exercise and attended to his business. Pains occasionally affected the tumour and adjacent parts, and an early and continued symptom was an excruciating pain just below the left kidney. The urine at times resembled porter. At length the constitutional symptoms became severe, with nausea, anorexia, restlessness, and depression. Dark blue spots arose in the vicinity of a mole on the sternum, others appeared in succession on the sides of the body and back, and very soon upon the forehead and scalp. Dyspnoea and dropsy came on, and his sufferings became severe until death relieved them. At the necropsy the peritoneum was thickly set with nodules, the lumbar and mesenteric glands were much enlarged. The spleen and bladder were the only abdominal organs free from disease. The chest was almost universally invaded. Similar diseased appearances were present on the skull cap and on the fascia covering the temporal muscles. The brain was healthy, and it is especially noted that with the exception of one speck in the leg the extremities were free from the disease.

This case, published in 1820, 14 years after Laennec had described melanotic growths, was the first instance of malignant cutaneous melanoma described in England, and I may be permitted a word of pious reference to its chronicler, Dr. William Norris, a practitioner of Stourbridge. The cares of practice had not destroyed his enthusiasm for pathology, witness the following extract:—

When the abdomen, chest, and cranium were thrown open it was a most extraordinary phenomenon; thousands upon thousands of coal-black spots of circular shape and various sizes were to be seen closely dotting the shining mucous, serous, and fibrous membranes of most of the vital organs: I should think the most dazzling sight ever beheld by morbid anatomist. I shall never forget the pleasing thrill which came over me when I first beheld them. It would have puzzled the most powerful descriptive talent to have done full justice to such a novel and striking disease displayed so beautifully in endless profusion everywhere.

A country practitioner who loved his profession well enough to make a complete necropsy in private practice, and to ride 20 miles for the sight of a case of melanotic sarcoma, must have been in those days rather a rarity. Norris was, in fact, the intellectual grandson of John Hunter, as the pupil of Mr. Caser, one of Hunter's house surgeons. May we not trace in the pioneer work of Norris, in his power of accurate observation and record, and in his keen love of knowledge, the transmission through two generations, and by inference up to the present time, of Hunter's personal influence, and of the best qualities of his mind? The books and collections to which Hunter owes his nominal immortality are perhaps after all the lesser part of the legacy he has left.

As bearing upon the question of centrifugal spread it is of interest to note that when the primary tumour arises near the head the arms are attacked by subcutaneous nodules before the lower extremities; and, indeed, the lower limbs may remain entirely free from nodules until death occurs. Thus Anger* records the following case:—

The patient was a woman of sixty, with a tumour as large as a nut upon the left cheek, which had been noticed for four months. Its growth was slow and painless. It was surrounded by four small jet-black tumours. The submaxillary glands were enlarged. Caustic was applied to the primary growth, but the satellite tumours were left alone and did not develop. The patient left the hospital in two months in a satisfactory state, but returned about a month later with multiple tumours of the form and colour of black currants upon the scalp, the neck, the arms, and the anterior and lateral parts of the chest and abdomen. The thighs, legs, and forearms were free from them. She died within a few days of readmission.

A COMPARISON BETWEEN THE MODE OF SPREAD OF CARCINOMA AND THAT OF MELANOTIC SARCOMA.
One of the aims of this research has been to test the conclusions on the spread of breast carcinoma at which I

had previously arrived. For if it be granted that sarcoma can obtain access to and can exist within the lymphatic vessels its mode of spread within them must be to a certain extent determined by the same mechanical factors as in the case of carcinoma or of an artificial injection mass. My conclusions on the spread of breast-cancer were necessarily reached by microscopic methods only, but in melanotic sarcoma a direct appeal to the eye becomes possible; and Fig. 2 strengthens my former conclusions by indicating the identity of the mode of spread of melanotic sarcoma in the parietal tissues with the mode of spread which I inferred to take place in breast-cancer.

In the earlier stages the processes of dissemination are essentially identical in carcinoma and in melanotic sarcoma. Dissemination is initiated by the access of malignant cells to the fine lymphatics, followed by the centrifugal spread of permeation along the main lymphatic plexus into which the primary growth pours its lymph, and by secondary permeation of small tributaries of this plexus. Embolic invasion of the regional lymphatic glands occurs and around this fresh focus permeation recommences. Meanwhile, almost invariably in melanotic sarcoma and sometimes in carcinoma, invasion of the blood stream takes place, either by local infiltration of veins from comitant permeated lymphatics, or by malignant cells carried into the blood along the thoracic duct from invaded lymphatic glands. When this stage is reached dissemination in melanotic sarcoma and in carcinoma respectively develops along divergent lines. In carcinoma lymphatic permeation, aided by the escape of cancer cells into the serous cavities, usually remains to the end the main agent in producing secondary growths—a fact which appears to depend upon the almost invariable destruction of such epithelial cells as obtain access to the blood stream. The same mode of dissemination may sometimes occur in melanotic sarcoma, but as a rule the mesoblastic cells of melanotic sarcoma are able to thrive when lodged in a blood-vessel. Thus in the later stages of melanotic sarcoma the slow process of lymphatic permeation usually recedes into insignificance and the patient dies with almost universal deposits resulting from blood embolism—an event which only as a rare exception occurs in carcinoma.

The Lancelian Lectures

ON

THE INCREASE OF INSANITY.

Delivered before the Royal College of Physicians of London on March 14th, 19th, and 21st.

By G. H. SAVAGE, M.D. LOND.,
F.R.C.P. LOND.,

CONSULTING PHYSICIAN FOR AND LATE LECTURER ON, MENTAL DISEASES, GUY'S HOSPITAL; CONSULTING PHYSICIAN TO THE IDIOT ASYLUM, EARLSWOOD.

LECTURE II.¹

Delivered on March 19th.

MR. PRESIDENT, FELLOWS, AND GENTLEMEN,—This lecture will be devoted to the causes of insanity. I shall only take a few of these such as will indicate sufficiently my views as to the probable increase among the insane. The three principal causes which I shall refer to are hereditary predisposition, alcoholic excess, and the influenza poisoning.

The whole question of heredity is being studied with so much care that enormous numbers of facts have been added to our knowledge, but as yet no great and directing grid has been discovered, for though one has to accept it established that no mutilation or established acquisition transmitted to the offspring, yet I have to maintain many nervous peculiarities are passed on more or less from one generation to another. A considerable part of my lecture will be devoted to my views founded on my experience as to the amount and forms of neurosis which may be admitted, and probably this is one of the most important questions that I have to consider. It is a very wide field that every case of insanity depends in some way on inheritance, and certainly the belief that the insane are equally dangerous, as far as

* William Norris, M.D.: Eight Cases of Melanosis, 1827; also Edinburgh Medical and Surgical Journal, October, 1820, p. 562.
* Anger: Les Melanomes, Paris, 1856.

¹ Lecture I. was published in THE LANCET.

the patient lives long enough) by a process of local inflammation essentially identical with the process of "perilymphatic fibrosis" which I have described in breast-cancer. Large secondary deposits, and in all probability even the primary growth itself (Fox), may sometimes be destroyed in a similar way. In this connexion my senior colleague, Mr. A. Pearce Gould,⁴ has lately recorded a very interesting case:—

II. S., at 33, consulted Mr. Pearce Gould on June 23rd, 1903. A congenital mole on the front of his chest had begun to enlarge on June, 1902, and had been excised in October, 1902. A small healthy scar marked the site of the operation. It was soon followed by the appearance of tiny nodules in and under his skin. Mr. Gould found the nodules most numerous on the trunk, but they were scattered over almost the whole surface of the body, save that none were present on the lower limbs below the groins. On July 14th no new nodules had appeared and all the old ones were flatter and smaller. The enlarged glands were also smaller. On the 30th many of the nodules had disappeared altogether; others were present only as black stains, visible but not palpable. The glands had further diminished in size. On Oct. 1st he was found to have gained flesh and only two palpable nodules were present over the whole surface of the body. The glands in the groin were normal, those in the axillæ but slightly enlarged. In February, 1904, two new nodules appeared near the right knee. In March the liver was enlarged and a fresh nodule appeared on the right side of the neck. The patient died in September, 1904, having been confined to his bed for only three or four days. While under Mr. Gould's care he took regularly a pill containing Venice turpentine and sulphur and amended an alcoholic habit which he had formed, but, as Mr. Gould remarks, the regressive changes which occurred were probably independent of these measures.

Mr. R. H. Jocelyn Swan has informed me of a somewhat similar case under his care in which macroscopic nodules of melanotic growth were observed to shrink and disappear.

CONCLUSIONS FROM EXAMINATION OF THE TISSUES IN THE INGUINAL REGION.

1. From the fairly regular distribution of skin nodules around the embolically invaded right inguinal glands it may be inferred that a process of local centrifugal spread, independent of the direction of the lymph current, took place around these glands as a focus.

Examination of a radial strip of the parietal tissues extending from these glands showed:—

2. That permeation of the lymphatics is the principal agent in this local centrifugal spread and that it occurs primarily and most extensively in the plane of the deep fascial lymphatic plexus.

3. Invasion of skin and muscle is due to upstream permeation of the lymphatics which carry lymph from these layers to the fascial lymphatic plexus.

4. Owing to the fact that arteries and veins usually run in close contiguity to lymphatic vessels lymphatic permeation is followed by infiltration of the walls of veins, and later of arteries, and by intrusion of the growth into the lumen of the blood-vessels. The importance of invasion of the veins with regard to pulmonary and systemic dissemination is obvious.

5. The order in time of these various events is deduced from the orderly sequence of processes seen as the strip of tissues is traced from its distal end towards the mass of glands which formed the local centre of infection.

6. Regressive changes, due to inflammation excited by the growth, may occur in melanotic sarcoma.

THE SHARE OF EMBOLISM IN PRODUCING THE METASTASES.

The direct evidence that the majority of the skin nodules present did not originate from emboli carried by the blood stream has already been adduced. It is interesting to note that nearly all the subcutaneous nodules present were situated on the same side as the primary growth. This distribution is inconsistent with the embolic origin of these particular secondary growths, and strongly suggest a process of local spread from point to point. On the other hand, it is probable that most of the visceral deposits, perhaps those in the breasts and a few of the subcutaneous nodules, took their origin in blood embolism. Such an embollic origin could be clearly traced in the kidneys, where the glomerular tufts were occupied in places by melanotic material, which at other points had burst into Bowman's capsule. Although "tissue-predisposition" is doubtless, as Mr. Stephen Paget showed, a factor in the survival of embolised fragments of

growth, it is difficult to explain on these lines the relative freedom from metastases of the subcutaneous tissues of the left side, as compared with those of the right side.

As soon as permeation in the lymphatics round the embolically invaded right femoral glands attained a radius of spread reaching to the level of the umbilicus—the dividing line between the territory of the inguinal and the axillary glands—embolic invasion of the axillary glands would occur. Local centrifugal spread around these glands, reaching a maximum in the rich lymphatic network of the breast, would account for the subcutaneous nodules present over the chest and for the mammary masses of growth.

DISSEMINATION AROUND A PRIMARY MELANOTIC SARCOMA.

Since in this case the primary growth had been removed by operation, it was not possible to study centrifugal lymphatic spread around the primary focus, but only around a

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No opportunity of investigating the spread of permeatic round a *primary* focus of melanotic growth has fallen to me. Such opportunities must be extremely rare, for the examination of excised growths is unsatisfactory. But there is a lack of clinical evidence that permeation does occur round the primary growth as the initial step in the process of dissemination, a step soon followed by embolic invasion of the nearest glands along the trunk lymphatics. The appearance of subcutaneous nodules near the scar is one of the commonest sequels to the removal of a melanotic growth. A in the case of breast-cancer such nodules must be regarded as "efflorescences," not as a rule due to insufficient removal of skin but to incomplete removal of the permeated area or the fascial plexus. Generally subcutaneous nodules first appear close to the primary growth and spread from it in all

It will be my duty later to point out special forms of mental disorder which, in my experience, have been clearly related to insane inheritance. It may be said in passing that it is fully recognised that brain tumours, general paralysis of the insane, and many cases of senile dementia have little to do with neurotic inheritance; while, on the other hand, it is manifest that certain forms of delusional insanity, moral insanity, and the insanity of obsessions almost invariably have inheritance of insanity, or allied states, as a partial cause.

We have always to bear in mind, when we meet with insanity in children, that besides inheritance there is association. It is quite certain that the association of an insane parent with children may be extremely dangerous. I have seen very clear and distinct examples of the *folie à deux*, such as the following. A mother is left a widow with two children and a very small amount of money to live upon. She has to change her residence and lives in a poor and meagre way. Avoiding the expense of entertaining friends she and her children live absolutely alone. She gets morbidly suspicious about them and about everybody in the neighbourhood, begins to suspect people of talking about her, of interfering with her, and, perhaps, tampering with her food. This is slowly borne in upon the young children, who in due course develop similar delusions. That, of course, is an extreme case, but it bears out what one wishes to impress upon you, that the association of the insane parent with the child may have a dangerous effect upon the mental stability of the child.

Again, it is not an uncommon experience for me to be consulted about the daughter of some elderly widow who has died after a prolonged mental illness. The daughter has devoted herself body and soul to this mother who has been a chronic or paralytic dement. In due course, after the death of the mother, the daughter begins to wonder whether her mother's symptoms are not reappearing in herself and it has been not an uncommon experience for me to see such a daughter mimicking to a great extent the symptoms of her mother. Expectancy and association have a great deal to do with heredity.

It has been thought that there is a great danger of transmission of the suicidal tendency and I would put it in this way: that I have histories of families many members of which have committed suicide, and in many cases the suicides have occurred in different parts of the world and under different conditions, and apparently without any knowledge of the occurrence of suicide in any other members of the family. This, of course, may or may not be quite accurate. At all events, I have known families in which suicide has been common. Such families undoubtedly belong to the unstable, to the neurotic—that is, to those who are unduly sensitive and unduly emotional. I say that probably there is a tendency to transmit not necessarily melancholia, but emotional states which readily lead to melancholia; and so people who are unusually sensitive and unusually emotional react too readily to painful surroundings and the tendency is to suicide. That definite concrete ideas or delusions should reappear apart from collusion seems to me at least improbable, yet I have had several instances like the following. I was consulted about a girl, aged 20 years, who, being sleepless and depressed, accused herself of the unpardonable sin. After some weeks she improved and finally recovered. Then her father, a bright and prominent business man, called on me and said that for years he had been convinced that he was "the man of sin," that he had committed "the unpardonable sin," and that there was no hope for him. He, being convinced of his doom, had borne it without a word to his family and he was horrified to find its reappearance in his daughter. It is difficult to explain this case, though I should say that a family in which unpardonable sin is talked about and thought about is sure to be impregnated with depressing religious views, which tend to a scriptural interpretation. And thus I would explain the occurrence of a similar idea in a child and in a parent.

Undoubtedly, although one does not get the fully developed delusion often in parent and child, I have seen such cases as the following: A father consulted me about his daughter, saying that she had morbid dreads about trains, about heights, and about being in public places. He said it was very alarming to him, because he himself had similar feelings all his life. That a nervous unstable person should have these similar dreads is common. I am constantly in the habit of seeing children who certainly, by the time they are 12 or 13

years of age, have dreads of heights, dreads of trains, and the like. They belong almost invariably to neurotic and possibly insane stock. That father and daughter should have such ideas is merely saying that under similar conditions similar feelings are similarly interpreted. That bears upon another point which I think is of value and importance. It is, that though these single isolated delusions or ideas may occur in a large number of neurotic people, they do not as a rule tend to further mental disorder; that they resemble in fact the stammer or trick in speech, or facial movements which are so common among the neurotic. There may be a single dominant idea, which recurs but does not lead to further disorder. The person with a stammer may go on all his life stammering, and this may be corrected to a certain extent. And in the same way there are many persons who have mental stammers, if I may use the term, and yet who do not become more insane. In such cases I have been often asked as to the danger of marriage. And I admit that I almost invariably say, "Well, it is quite possible that you may have children who will experience similar feelings to those from which you suffer. If you find them so intolerable to yourself pray warn your children as to the danger of their possessing them. But otherwise I do not think you need be afraid; that is, you need not be afraid if the child be a daughter that she will break down with puerperal insanity, or if he be a son that he is likely to develop general paralysis."

Allied to what I have just said, I would wish to make clear that people belonging to a neurotic stock, people who are likely to transmit the neurotic tendency to their children if they become insane, have certain definite peculiarities. I have observed that it is possible for many of them to have obsessions or monomanias, if one may still use the term; moral and sensory, rather than intellectual defects. But besides this there is a great tendency to develop hallucinations of the senses. I have sometimes felt inclined to say the neurotic are more likely to go out of their senses than out of their minds. Delusional insanity associated with hallucinations of hearing, sight and of the other special senses is common among neurotics. Then it is noteworthy that the person who is of very insane stock is much more likely to break down at certain periods of life. And this, again, is an important point when we are considering the question of the increase in the numbers of the insane. It is pretty certain that a large number of the patients who are now described as suffering from dementia præcox belong to neurotic stock. It is thought that those coming of neurotic stock are more liable to break down under what may be called physiological stress; that with adolescence, with child-bearing, with change of life they are more likely to break down. Next, those belonging to strongly nervous stock are likely to recover at least once, except those cases of quite early developing or developmental insanity. I have long been in the habit of saying that if a person had to become insane it was very much better for his prospects of, at all events, recovering that he should have had an insane parent. The tolerance of recurring attacks of very violent insanity in neurotic persons is extraordinary. I have known members of insane families who have had recurring attacks during 30 and 40 years, attacks of most violent mania or most profound melancholia, which have passed off, leaving no evidence of the tremendous mental storms that have raged. Readily upset as these neurotics are they seem capable of being reset to an unusual degree.

As to the question of inheritance in relationship to the various forms of insanity, I have already pointed out that the types of delusional insanity are specially associated with a neurotic inheritance. I have also said that general paralysis of the insane, as a rule, has but a distant relationship to inheritance. I am inclined to think that with melancholia there is a greater tendency to transmission than with mania or with some other forms of insanity. In melancholia one has such a large amount of disorder, evidenced by changes in the body as well as by changes in the mind, that one is not altogether surprised to find that a tendency to melancholia runs not uncommonly in families. Again, this is of importance in connexion with the question of increase among the insane. A large number of people who now live to 80 years of age, or even more, in asylums are suffering from melancholia. The weight of years is represented by melancholia in some families, and I have known some very distinguished families the members of which when they approach fourscore years exhibit signs of melancholia and end in mental gloom.

is concerned, is very widely spread. If I have succeeded in making anything clear in my first lecture I hope it is that there is no definite form of insanity which is likely to be transmitted. The importance of considering in detail the relationship of inheritance to mental disorders is not only medical but social. It is a question that medical men, especially family medical men, have frequently before them—the danger of marrying into families in which cases of insanity have occurred. In some cases, undoubtedly, alliances of that kind are to be hindered and, if possible, stopped altogether. On the other hand, there are many cases in which insanity of the parent is not more likely to be transmitted in any shape or form to the descendants than an accidental injury or mutilation. In passing, one would say that the same holds good in relationship to consanguineous marriages. It used to be believed that a large percentage of deaf mutes in asylums, and of the imbeciles and idiots who are met with, are the result of consanguineous unions. It is pretty conclusively proved that consanguinity itself is of little or no importance. In fact, if the two blood relations happen to belong to absolutely healthy stock the progeny themselves will have an excellent chance of being healthy. If, on the other hand, there is any tendency to neurosis in the stock, or if there is a tendency to neurosis on the one hand, and to degenerative disorders, such as phthisis, on the other, then undoubtedly the union of blood relations is specially dangerous. In some cases one has seen unions that one would not have advised still turn out quite satisfactory. It therefore is my opinion that although it is undesirable that neurotics should marry one another, yet the marriage of a neurotic with a perfectly sound and healthy individual is much more likely to eradicate the neuroses in the offspring than to accentuate them. It has been thought that some of the increase among the insane depended upon the fact that a large number of patients were now discharged convalescent from asylums before they were really well and that during this period of convalescence they might become pregnant or might beget children who would certainly be predisposed to nervous disorders. The statistics of asylums, especially those given recently from the Irish asylums, do not in any way substantiate this belief. There undoubtedly are cases, and such have come before my immediate notice, in which a patient recently recovered from insanity has become the parent of a child who has been unduly unstable. No statistics, however, are available to show that any increase of insanity depends upon any such cause. I am in the habit of comparing neuroses to the mycelium of a fungus; just as the plant grows unseen beneath the surface and is only recognised by the development of the mushroom or the toadstool, so the inherited neurosis may be hidden and only appear under special conditions. I believe there is a neurotic type, to which I shall have later to refer, which may produce a brilliant result, on the one hand, or, given other conditions, may lead to a disastrous or dangerous product, either criminal or lunatic. It has to be recognised that though insanity itself in a definite form is not transmitted there is a tendency to develop various forms of a neurosis which are transmitted, and I am inclined to think that the increase of insanity at the present time depends to a certain extent upon such transmission.

I would definitely say that mental disorder reaching the line of insanity is to be compared with highly specialised mental capacity—with genius, if you like—and that this is not at all likely to be passed on. The poet, or the distinguished statesman, rarely has similarly gifted children. The lunatic may have defective children, and if the mental disorder is of a grave type, and if the children have been born after there has been definite mental breakdown, idiocy rather than lunacy is to be expected. I feel some hesitancy in dogmatizing on the relationship between genius and insanity; the subject has been so frequently handled that I fear little that I could say so frequently to your knowledge. But I am more and more struck by the fact that any individual who has become markedly conspicuous along any very definite or specialised line has a conspicuous tendency to transmit not that special ability or distinct tendency to transmit but that special ability or capacity but an instability which may lead to mental incapacity of one type or another. I would go so far as to say that special capacity or genius, whether it be on the mental or even muscular side, is associated with danger. I may say that in my experience I have seen the neurotic disposition show itself in the descendants of athletes, inventors, poets, statesmen, and the like. The tendency of

gifted parents either to have no children at all or to have neurotic children is established. It is not unnatural, and certainly follows the lines of Darwin's observations, that no great special or individual capacity is transmitted. The variation of species, if it has originated by slow additions or slow modifications of existing bodies, must have been associated with transmission of extraordinarily minute changes, and one is more and more convinced that specific changes have not been by leaps and bounds. It is probable that any qualities that are transmitted from parent to child will be small; you do not get a poetic child of a poetic father, but you would get a child with sensory or intellectual instability, a tendency perhaps to emotional display. In fact, tricks of body (extra fingers) and tricks of mind are much more likely to reappear in the children than are the great and marked characteristics. I think most of us recognise that very slight habits are conspicuous by their reappearance in a second or third generation. For instance, I personally have been very much impressed by the transmission of special forms of handwriting. Thus a mother writing a bad hand and a father writing a good one, it has been my frequent experience to find the sons following the type of writing of the mother, the daughters that of the father. And in some such cases the characteristic writing has been very marked, although the children have been brought up away from home almost entirely. In one very interesting case a man, the son of an insane mother, himself sane, married and had a son who was markedly neurotic. He lost his wife, married again, and had a daughter who exhibited similar symptoms of nervous instability to her half-brother. The mothers were both apparently healthy.

Now as to some of my experience in relationship to inheritance and the transmission of neuroses. I have had opportunities of seeing children of an insane mother, a mother who, even during her insanity, lived with her husband and bore children. I have known those children grow up, at all events, into adolescence without any sign of mental disorder. They have been somewhat unstable, that is, emotional, given, perhaps, to infantile rages, predisposed to variations in temperature with but slight cause, with a tendency to dreaminess, and occasionally with certain other minor nervous symptoms. I have, on the other hand, seen children who have been born of a mother who has suffered from puerperal insanity, who, therefore, has not developed from insanity until after the birth of the child, but who yet—the insanity until after the birth of the child, but who yet—if I may refer once more to my simile of the mycelium of the fungus—was practically insane, if not actually insane, during the pregnancy. I have known such children come into the world not insane, but with marked tendency to convulsive seizures, leading ultimately to epilepsy and to moral defects of one kind or another. These individuals are very often good examples of the anti-social tendency to the anti-social side of mental disorder. The children of an insane parent may tend rather, as I say, to emotional instability and to moral defect than to actual intellectual want.

Undoubtedly a certain number of idiots are the result of insane parents, but my experience is that a very large percentage of idiots have no distinct insanity in their ancestors. Just as in the common chemical experiment it used to be shown that two colourless solutions when mixed may produce a black solution or precipitate, so it has been my constant experience to find that when a family consists of several idiotic children the parents have not, either of them, been insane, but have, on the other hand, been highly neurotic, or have been peculiar in one way or another, so that without ever having been considered insane, they have been looked upon as unstable and the result has been weak-minded progeny. Doubtless, sooner or later, one may be able to recognise what the types are who, when united, produce such disastrous results. I should give as my experience, too, that a child begotten of a degenerating parent—one, say, broken down from alcoholic excess, from general paralysis of the insane, or from some senile disorder—would very likely be imbecile or idiotic. I have a certain number of special instances in which I have known the result of impregnation by a general paralytic father to have been an idiotic child. It is difficult, however, from a few individual cases, to generalise. Though I do not expect the insane parent to have an insane offspring, yet, as many insane people belong to a specially unstable class, I find the offspring of the insane or highly neurotic to develop certain special forms of nervous disorder.

It will be my duty later to point out special forms of mental disorder which, in my experience, have been clearly related to insane inheritance. It may be said in passing that it is fully recognised that brain tumours, general paralysis of the insane, and many cases of senile dementia have little to do with neurotic inheritance; while, on the other hand, it is manifest that certain forms of delusional insanity, moral insanity, and the insanity of obsessions almost invariably have inheritance of insanity, or allied states, as a partial cause.

We have always to bear in mind, when we meet, with insanity in children, that besides inheritance there is association. It is quite certain that the association of an insane parent with children may be extremely dangerous. I have seen very clear and distinct examples of the *folie à deux*, such as the following. A mother is left a widow with two children and a very small amount of money to live upon. She has to change her residence and lives in a poor and meagre way. Avoiding the expense of entertaining friends she and her children live absolutely alone. She gets morbidly suspicious about them and about everybody in the neighbourhood, begins to suspect people of talking about her, of interfering with her, and, perhaps, tampering with her food. This is slowly borne in upon the young children, who in due course develop similar delusions. That, of course, is an extreme case, but it bears out what one wishes to impress upon you, that the association of the insane parent with the child may have a dangerous effect upon the mental stability of the child.

Again, it is not an uncommon experience for me to be consulted about the daughter of some elderly widow who has died after a prolonged mental illness. The daughter has devoted herself body and soul to this mother who has been a chronic or paralytic dement. In due course, after the death of the mother, the daughter begins to wonder whether her mother's symptoms are not reappearing in herself and it has been not an uncommon experience for me to see such a daughter mimicking to a great extent the symptoms of her mother. Expectancy and association have a great deal to do with heredity.

It has been thought that there is a great danger of transmission of the suicidal tendency and I would put it in this way: that I have histories of families many members of which have committed suicide, and in many cases the suicides have occurred in different parts of the world and under different conditions, and apparently without any knowledge of the occurrence of suicide in any other members of the family. This, of course, may or may not be quite accurate. At all events, I have known families in which suicide has been common. Such families undoubtedly belong to the unstable, to the neurotic—that is, to those who are unduly sensitive and unduly emotional. I say that probably there is a tendency to transmit not necessarily melancholia, but emotional states which readily lead to melancholia; and so people who are unusually sensitive and unusually emotional react too readily to painful surroundings and the tendency is to suicide. That definite concrete ideas or delusions should reappear apart from collusion seems to me at least improbable, yet I have had several instances like the following. I was consulted about a girl, aged 20 years, who, being sleepless and depressed, accused herself of the unpardonable sin. After some weeks she improved and finally recovered. Then her father, a bright and prominent business man, called on me and said that for years he had been convinced that he was "the man of sin," that he had committed "the unpardonable sin," and that there was no hope for him. He, being convinced of his doom, had borne it without a word to his family and he was horrified to find its reappearance in his daughter. It is difficult to explain this case, though I should say that a family in which unpardonable sin is talked about and thought about is sure to be impregnated with depressing religious views, which tend to a scriptural interpretation. And thus I would explain the occurrence of a similar idea in a child and in a parent.

Undoubtedly, although one does not get the fully developed delusion often in parent and child, I have seen such cases as the following: A father consulted me about his daughter, saying that she had morbid dreads about trains, about heights, and about being in public places. He said it was very alarming to him, because he himself had similar feelings all his life. That a nervous unstable person should have these similar dreads is common. I am constantly in the habit of seeing children who certainly, by the time they are 12 or 13

years of age, have dreads of heights, dreads of trains, and the like. They belong almost invariably to neurotic and possibly insane stock. That father and daughter should have such ideas is merely saying that under similar conditions similar feelings are similarly interpreted. That bears upon another point which I think is of value and importance. It is, that though these single isolated delusions or ideas may occur in a large number of neurotic people, they do not as a rule tend to further mental disorder; that they resemble in fact the stammer or trick in speech, or facial movements which are so common among the neurotic. There may be a single dominant idea, which recurs but does not lead to further disorder. The person with a stammer may go on all his life stammering, and this may be corrected to a certain extent. And in the same way there are many persons who have mental stammers, if I may use the term, and yet who do not become more insane. In such cases I have been often asked as to the danger of marriage. And I admit that I almost invariably say, "Well, it is quite possible that you may have children who will experience similar feelings to those from which you suffer. If you find them so intolerable to yourself pray warn your children as to the danger of their possessing them. But otherwise I do not think you need be afraid; that is, you need not be afraid if the child be a daughter that she will break down with puerperal insanity, or if he be a son that he is likely to develop general paralysis."

Allied to what I have just said, I would wish to make clear that people belonging to a neurotic stock, people who are likely to transmit the neurotic tendency to their children if they become insane, have certain definite peculiarities. I have observed that it is possible for many of them to have obsessions or monomanias, if one may still use the term; moral and sensory, rather than intellectual defects. But besides this there is a great tendency to develop hallucinations of the senses. I have sometimes felt inclined to say the neurotic are more likely to go out of their senses than out of their minds. Delusional insanity associated with hallucinations of hearing, sight and of the other special senses is common among neurotics. Then it is noteworthy that the person who is of very insane stock is much more likely to break down at certain periods of life. And this, again, is an important point when we are considering the question of the increase in the numbers of the insane. It is pretty certain that a large number of the patients who are now described as suffering from dementia praecox belong to neurotic stock. It is thought that those coming of neurotic stock are more liable to break down under what may be called physiological stress; that with adolescence, with child-bearing, with change of life they are more likely to break down. Next, those belonging to strongly nervous stock are likely to recover at least once, except those cases of quite early developing or developmental insanity. I have long been in the habit of saying that if a person had to become insane it was very much better for his prospects of, at all events, recovering that he should have had an insane parent. The tolerance of recurring attacks of very violent insanity in neurotic persons is extraordinary. I have known members of insane families who have had recurring attacks during 30 and 40 years, attacks of most violent mania or most profound melancholia, which have passed off, leaving no evidence of the tremendous mental storms that have raged. Readily upset as these neurotics are they seem capable of being reset to an unusual degree.

As to the question of inheritance in relationship to the various forms of insanity, I have already pointed out that the types of delusional insanity are specially associated with a neurotic inheritance. I have also said that general paralysis of the insane, as a rule, has but a distant relationship to inheritance. I am inclined to think that with melancholia there is a greater tendency to transmission than with mania or with some other forms of insanity. In melancholia one has such a large amount of disorder, evidenced by changes in the body as well as by changes in the mind, that one is not altogether surprised to find that a tendency to melancholia runs not uncommonly in families. Again, this is of importance in connexion with the question of increase among the insane. A large number of people who now live to 80 years of age, or even more, in asylums are suffering from melancholia. The weight of years is represented by melancholia in some families, and I have known some very distinguished families the members of which when they approach fourscore years exhibit signs of melancholia and end in mental gloom.

I here add some extracts from the Irish Commissioners' reports, giving the opinions of some of the asylum physicians. Taking the percentages *seriatim* it will be seen that during the decade the proportion of cases in which heredity was a factor in the causation shows a small increase.

Page 7.—So far as the figures at our disposal go, there is no ground for the idea that asylums are breeding places of insanity, turning out every year thousands of patients technically "cured," but with the evil in the blood to beget an infected progeny. No facts have come to my knowledge to warrant such a theory. I find no cases of patients descended from former inmates of the asylum who have been discharged as recovered. It cannot be denied that discharged patients may marry and propagate the disease, but a kind of corrective is supplied in public sentiment which condemns such marriages. The greatest misconceptions prevail as to heredity in its causative relation to insanity. The truth is, mental, like most bodily diseases, are not in themselves directly transmissible. We inherit not insanity but an ill-adjusted nervous system, which may easily collapse beneath an unaccustomed strain. That heredity marks out the lines along which the chartered curses of humanity find easy progress we must believe. (Graham.)

Page 13.—As a result of my observations here and elsewhere I am convinced that heredity is largely accountable for the prevailing insanity. I have frequently had insane parents and their children receive treatment at the same time, and sometimes as many as three or four members of the same family. There is no doubt that in many instances the patients are descended from former inmates of the asylum who had been discharged recovered or improved. (Hatchell.)

Page 16.—CAUSES OF INSANITY.—The most prominent of these amongst those admitted has to be recorded as usual under the head of hereditary; 49 out of a total of 113 were assigned this as a cause. This probably does not represent all who might truly be added here—for various reasons we are not always able to arrive at the truth; nine were said to be caused by congenital defects. (Harvey.)

Page 19.—Hereditary exercise its influence chiefly at adolescence, and when the exciting cause which has brought on the attack has been removed the patient usually recovers, often marries, and has a family more or less liable to insanity, epilepsy, or some neurotic disease. (Yoods.)

Page 21.—In connexion with the question of heredity, which undoubtedly is one of the most important considerations in connexion with the problem of insanity, it is a consolation to know, as the outcome of modern research, that the old pessimistic doctrine of a hopelessly handicapped posterity springing from insane progenitors is no longer absolute. (Nolan.)

Page 13.—We therefore find that a preponderance of the cases breaking out without well-marked exogenous cause in the time of late boyhood or early manhood are cases in which there is some strong hereditary tendency, or cases that are stigmatised from the first either by definite physical defects and malformations or by distinct nervous instability. These are, in other words, cases of constitutional or idiopathic predilection. (Conolly Norman.)

primordial predisposition. (Conolly Norman.)

Page 51.—With regard to the great question of heredity, it is easy to attribute an undue importance to this factor. I do not go so far as to deny, as some have done in modern times, that it is a factor at all, but I must point out that it is extremely indefinite. With a disease so common as insanity, if those who are hereditarily tainted constituted a distinct class, that fact would soon be patent to the world. But they do not, and this suggests that the incidence of insanity is scattered pretty generally through the population. It is true that the more carefully one examines into the family history of sufferers from mental unsoundness the more sure one is to come across cases of mental and other nervous diseases. But on the other hand, when one has an opportunity of examining a family history, starting from a person who is not of unsound mind, one comes across mental and nervous disease quite in a similar way. Indeed, as far as I am able to judge, facts bear out speculation, and everyone has insane relations, nearer, as the case may be, or more remote. Heredity would be much more often assigned to insanity than it is were it not for the reticence and the ignorance of relatives, but this would make little difference in the nature of the problem. Of course, no clinical observer of experience has failed to recognise families in which the liability to insanity is strong, and even tends to increase, till it terminates in the destruction of the stock. But in the majority of cases heredity can hardly be regarded as more than a disposition, common to our race, a little stronger in one than in another, and usually requiring some second or contributing agency to make it operative.

Table IV., under the heading of heredity,

The statistics given in Table IV, under the heading of heredity, cannot be quite accurate, as may be given greater weight to heredity said above, but the tendency has been to give greater weight to heredity as the years went on, and no increase under this head has been noticeable. Now with regard to the specific question as to whether an appreciable increase in the number of the insane has been brought about through the discharge of recovered patients who have then propagated the statistics of this asylum nor the facts of my own experience give any support to this notion. (Conolly Norman.)

Melancholic states are much more likely to occur, I think, in families than are maniacal conditions; that of all forms of hereditary insanity, those associated with hallucinations of the senses and with definite obsessions and marked delusions are common; that with a strong inheritance there is a tendency to moral defect as well as to imbecility and idiosyncrasy; that consanguinity alone is not to be looked upon as very dangerous. I take it for granted that there is no such thing as inheritance of any function as such, but only the transmission of the physical capacity or predisposition to react in certain definite ways under certain definite stimulation. Thus, the power to learn to speak exists, but not the special tendency to speak in one language. Again, manual aptitudes may be present, but there is no special transmission of power to perform definite acts in definite

ways. The power of rapidly varying in relationship to rapidly changing surrounding is represented by still more and more mobile organic compounds. The possession of such mobile combinations tends to instability; and, after all, we have to consider neurosis as nothing but a special form of instability. Such instability may be represented by brilliant genius or feeble inconsequence. As already pointed out, various neuroses are allied and may in some cases be interchangeable. Neurotic instability and tendency to insanity may depend on causes of physical weakness in a parent, yet unstable parents may have normal children. Atavism is not so marked in insanity as in some forms of physical peculiarity. It is not true that all forms of insanity are easily transmitted to the offspring. Healthy mating, too, may get rid of the tendency, or may result in but a slight tendency to tricks, habits, or manners representing the neurosis in the parent. Strong neurotic inheritance will often show itself in special forms of nervous disorder in childhood and adolescence, and, again, in anti-social or criminal tendencies.

THE AREA OF "ACUTE ABDOMINAL
CONFLUX" AND THE "INCISION
OF INCIDENCE."

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IN the acute abdomen, notwithstanding an exhaustive inquiry into the previous history and present illness, a thorough abdominal, rectal (and in the case of a woman vaginal) examination, an inspection of the vomit and excreta if any, a close scrutiny of the various hernial rings, and a second examination after the patient has been brought under the influence of the anæsthetic, yet in a certain proportion of cases the surgeon will be in doubt as to the nature of the illness with which he has to deal. This is owing to the fact that the general symptoms—pain, collapse, vomiting, followed by distension—are common to most, if not all, the conditions producing the acute abdomen, while the distinguishing features of any particular affection may be absent. A perforated duodenal ulcer, for instance, may be indistinguishable from an acute perforative or gangrenous appendicitis; the latter may simulate acute intestinal obstruction from various causes, a gangrenous pancreatitis may imitate an acute perforation of the digestive tract, and so on. In such cases the surgeon only knows that an acute abdominal catastrophe has occurred and he feels certain that, humanly speaking, the only chance lies in immediate operation. Many of these patients have been ill two or three days or longer, their abdomens are distended, rendering examination negative, and their general condition is bad. In these unfavourable circumstances the surgeon is conscious that if he is fortunate enough to hit on the source of mischief at once he is fortunate enough to hit on the source of mischief at once and succeeds in remedying it without undue delay, the patient's life may be saved. If, on the other hand, he is not so fortunate and a prolonged search, followed possibly by a second incision or evisceration, is needed, though the operation may be concluded successfully, the ordeal will have been beyond the patient's power to survive. We then frequently hear that, "though the operation was perfectly successful, the patient died the next day"—a somewhat paradoxical and poor consolation. If as a result of his examination the surgeon arrives at a probable diagnosis he will usually make his incision over the suspected organ—and rightly so, too, even though he should turn out to be wrong. But should his examination leave him completely in the dark as to its nature, where is he to make it? It is generally advised that the exploratory incision be made in the middle line below the umbilicus and the whole or part of the hand be introduced to ascertain the source of the trouble. The intention of the present paper is to question the soundness of this advice and to advocate the right semilunar line as the position of election. We are dealing with a question of probabilities. The objective in view is to hit on the source of mischief as quickly as possible, to avoid a prolonged search and a second incision. This desirable end is not to be attained in every case by making the incision in any position. But in these desperate illnesses where the avoidance of delay and of difficulties is the very condition of success, the incision which hits the mark in the majority of cases is the one that

will give the best aggregate of results and should be generally adopted, even though in individual cases it may be found wanting. If the surgeon makes a probable diagnosis he usually explores over the suspected area. If he cannot, he should explore over the area which in the acute abdomen is *always* to be suspected.

The oesophageal opening of the stomach is situated behind the seventh costal cartilage of the left side, about one inch from the sternum. Drop a perpendicular line, which for purposes of reference may be called (a), from this point to Poupart's ligament. Next, draw a line, called in the same way (b), from the right anterior superior iliac spine perpendicularly upwards to the lower border of the thorax. Within the area bordered by these two lines almost every acute abdominal crisis either must occur, or, as a matter of fact, does occur. It may be termed the "area of acute abdominal conflux."—It may be subdivided into an upper and a lower compartment by a horizontal line at the level of the umbilicus. The incision which will lay bare this area is a vertical one midway between the lines (a) and (b)—i.e., one just about the outer border of the right rectus. This may therefore be called the "incision of incidence" in the acute abdomen.

The factors in the production of the acute abdomen will now be briefly considered with reference to their locality. It is assumed that a strangulated hernia at one of the rings has been excluded. This usually presents no difficulty. These factors may be divided into three classes: (I.) those that can only occur within the area; (II.) those that may occur either within or without the area; and (III.) those that can only occur without the area.

Class I. (those that can only occur within the area) includes (1) appendicitis (excluding the rare condition transposition); (2) pericæcal hernia; (3) right ruptured pyosalpinx; (4) right ruptured ectopic gestation; (5) acute gall-bladder complications, suppurative cholecystitis and cholelithiasis, perforation, and gangrene; (6) perforation of a duodenal ulcer; (7) perforation of a gastric ulcer; (8) hernia through the foramen of Winslow; (9) right diaphragmatic hernia; and (10) hernia duodeno-jejunalis, the mouth of the fossa, the seat of strangulation, being at the junction of the duodenum and jejunum and looking to the right.

Class II. (those that may occur either within or without the area) includes:—1. Intussusception. According to Warren in about one-third of all cases no palpable tumour is present. Out of 109 consecutive cases occurring at St. Thomas's Hospital 75 were ileo-cæcal, 12 enteric, 5 ileo-colic, 5 colic, and 12 were double or unusual forms. Wiggin found in 103 cases 89 per cent. of the ileo-cæcal variety. Intussusception, therefore, does occur far more frequently within the area than without it. 2. Obstruction by Meckel's diverticulum. This is usually attached to the lower ileum within three feet of the ileo-cæcal valve. It is situated, therefore, usually within the area. 3. Obstruction by bands and adhesions. These are usually the result of previous attacks of localised peritonitis. Such peritonitis has its most frequent origin in inflammations of the appendix, Fallopian tubes, gall-bladder, duodenum and stomach (ulcer), peritoneum, mesenteric glands, and intestine (tubercle). Post-operative bands are excluded, because in these cases the surgeon would not be without a clue, which in this paper is supposed to be wanting. It will be seen that the great majority of organs usually giving rise to localised peritonitis and the consequent formation of bands are situated within the area. Of the 101 cases of strangulation in Fitz's table (which includes: adhesions, 63; vitelline remains, 21; adherent appendix, 6; mesenteric and omental slits, 6; peritoneal pouches and openings, 3; adherent tube, 1; and peduncular tumour, 1), in 67 per cent. the strangulation was in the right iliac fossa—i.e., within the lower area of acute abdominal conflux. 4. Obstruction of the intestine by a foreign body (most commonly gall-stones, rarely enteroliths, worms, and tumours). The lower ileum is the narrowest part of the intestinal tract. Foreign bodies are, therefore, most frequently, as might have been expected, arrested there—i.e., within the area. Tumours of the bowel are usually malignant, occur in the large intestine, and most frequently give rise to chronic obstruction. Such tumours as fibromata, myomata, and lipomata are exceedingly rare. 5. Perforation of typhoid ulcers. This occasionally has taken place in the ambulatory form of the disease, when the patient was not suspected to be suffering from typhoid fever. Out of 362 cases in Harte's and Ashurst's series, in 73 per cent. the

perforation was found within 12 inches of the cæcum; next most frequently in the appendix; and, lastly, in the ascending colon, all positions within the area. In Harte's and Ashurst's table of operation for these cases the right iliac incision gives the lowest mortality. 6. Perforation of tuberculous ulcers. These ulcers are most commonly found in the ileum, cæcum, and colon. Should they perforate, they would do so in the majority of cases within the area. 7. In cases of chronic mechanical obstruction of the large intestine, due mostly to malignant disease in the sigmoid, splenic flexure, &c., perforation occasionally takes place somewhere on the proximal side of the growth. The most common situation for this is in the cæcum—i.e., within the area. 8. Volvulus and knots. The most common site of volvulus is the sigmoid flexure (50 per cent. in Fitz's table)—i.e., outside the area. The next most common sites are the cæcum and the lower part of the ileum, both within the area. 9. Twisting of an ovarian or fibroid pedicle. This may occur either within or without the area. A palpable tumour would be likely to be present in these cases. If not, the condition could probably be readily detected and dealt with from the right semilunar incision. 10. Gangrene due to embolism of the superior mesenteric artery or thrombosis of the mesenteric veins. In the former, if the embolus is arrested in the main vessel, the terminal portion of the ileum will at all events be involved, the length of intestine becoming gangrenous varying with the size of the embolus. The terminal portion of the ileum lies within the area. If the embolus be arrested in the right or middle colic artery the resulting gangrene will likewise take place within the area. 11. Strangulated diaphragmatic hernia. Though left diaphragmatic hernia is much more common than right, the hernial openings in this condition are generally found on either side close to the median line (the oesophageal opening gaps between the sternal and costal portions of the muscle and similar gaps between the lumbar and costal portions of the muscle). The mouth of the hernia will usually, therefore, be found within the area.

Class III. (those that can only occur without the area) includes: (1) volvulus of the sigmoid flexure; (2) inter-sigmoid hernia; (3) left ruptured pyosalpinx; (4) left ruptured ectopic gestation; and (5) left diaphragmatic hernia (rarely).

Many of the factors enumerated in the above table are exceedingly rare; others are common. Of the latter it will be seen, on referring to the tables given above, that a large number of them must originate within the area of acute abdominal conflux. They are appendicitis, acute gall-bladder affections, perforated gastric and duodenal ulcers, right ruptured ectopic gestation, right ruptured pyosalpinx, and less common gangrenous pancreatitis. Rare conditions, pericæcal hernia, hernia through the foramen of Winslow, right diaphragmatic hernia, and hernia duodeno-jejunalis (the mouth of the sac), must also occur within the area. Of the factors that may give rise to the acute abdomen either within or without the area we find as a matter of experience that all of them, with two exceptions (volvulus and twisted ovarian or fibroid pedicle) actually do give rise to it far more frequently within than without the area. Intussusception, obstruction by Meckel's diverticulum, obstruction by bands and adhesions, obstruction of the intestine by a foreign body, perforation of typhoid, tuberculous or stercoral ulcers, diaphragmatic hernia, and gangrene from embolism of the superior mesenteric artery, do occur far most commonly here. The only conditions that must occur outside the area are volvulus and knots and bands involving the left portion of the intestine, left ruptured ectopic gestation, left ruptured pyosalpinx, and the very rare condition inter-sigmoid hernia.

We may next separate our patients into two classes by a known factor—sex. In the case of a male, ectopic gestation, pyosalpinx, and twisted pedicles, ovarian or fibroid, are excluded. We thus arrive at the fact that every condition producing the acute abdomen, with the single exceptions of volvulus and the very rare complication inter-sigmoid hernia, either must occur within the area of acute abdominal conflux or, as a matter of fact, most commonly does so. If the patient be a woman the preponderance is not quite so overwhelming owing to the possible pelvic complications on the left side, which have been enumerated. But even here the excess is very large.

The practical conclusion from the above consideration is that in a case of the acute abdomen of doubtful origin the incision which will expose and give ready access to this area

is that of election. This incision lies in the right semilunar line and has been previously named the "incision of incidence." The usual practice is to make the incision in the mid-line below the umbilicus and to introduce the hand for the purpose of exploring the abdomen by touch. There is no doubt that with increased experience within the abdomen the tactile sense becomes educated and examination thereby becomes intelligent and purposeful. But all who are called upon to open the abdomen may not be in possession of the tactile skill, which practice alone bestows, and, moreover, even to those who have had large experience within the abdomen, an ounce of sight is worth a ton of touch. The actually seeing the condition enables us to take in the whole situation at once. Such information touch alone rarely affords. Moreover, the examination by touch in those cases in which exposure fails can be just as well conducted through an incision in the right semilunar as in the median line.

For these reasons the following routine is recommended as the operation of exploration in the acute abdomen of doubtful origin. An incision should be made, large enough to give plenty of room, just within the outer border of the right rectus, commencing about the level of the umbilicus and continued downwards. Turning the rectus inwards the peritoneal cavity is opened. By the aid of retractors the lower area of acute abdominal conflux is exposed. This should be explored first because the appendix is far the most common defaulter in the acute abdomen. In a series of 456 cases of the acute abdomen occurring at St. Thomas's Hospital during the years 1900, 1901, and 1902 37 per cent were due to the appendix and its complications. This incision will also give access to, if present, right ruptured ectopic gestation, right ruptured pyosalpinx, and pericecal hernia. It will in addition give information as to the state of the large bowel, whether empty or the reverse, in cases of obstruction and indicate whether the obstruction is in the large or small intestine. In those cases, too, where the general condition of the patient warrants no more than the establishment of an artificial anus this can be accomplished at the seat of election, the cæcum being used for this purpose if distended, and if collapsed a point as low down as possible in the ileum will be accessible, which is the indication in such cases. It will also in all probability expose an intussusception, obstruction by Meckel's diverticulum, obturation of the intestine by a foreign body, and perforation of typhoid, tuberculous, or stercoral ulcers. If the cause of the trouble is not in this area the hand can be passed into the incision and the umbilical ring and hernial rings on both sides, as well as the contents of the left pelvis, can be explored by touch. Should success not reward the surgeon's efforts the incision should be prolonged upwards, the rectus shelled out of its sheath, and the peritoneal opening enlarged into the upper area of acute abdominal conflux, the lower area already explored being packed off with gauze. Here he will obtain direct access to acute gall-bladder conditions, perforated duodenal and gastric ulcers, acute gangrenous pancreatitis, the mouth of a hernia duodeno-jejunalis, hernia into the foramen of Winslow, diaphragmatic hernia (usually), and probably bands and adhesions if not found in the lower area. To deal with some of these conditions, for instance, an ulcer near the cardiac end of the stomach, the incision would probably have to be extended inwards along the lower border of the ribs. Finally, if the cause is not discovered, which will be very unlikely, the hand can be introduced through the incision and the rest of the abdominal cavity explored by touch just as well as through a median incision. Of course, it hardly requires insisting that incidents occurring during the course of the exploration would in some cases modify this routine method. If, for instance, on opening the abdomen in the lower right quadrant free blood were found in the peritoneal cavity, the surgeon would naturally go down into the pelvis at once for a ruptured ectopic gestation. If, again, he found gas or stomach contents he would prolong the incision at once upwards, &c. All rules have their exceptions. The object of this paper is to indicate the general plan on which the acute abdomen should be explored and to demonstrate the method which is most likely to reward our efforts in cases which are always difficult. It is not contended that it must rigidly be adhered to in every case.

To sum up, the advantages claimed for this incision in comparison with the median incision are: 1. That it directly exposes to sight that part of the abdominal cavity which in

a large proportion of cases *must* contain the offending organ and which in another large proportion of cases do as a matter of fact do so. 2. That therefore in the large majority of cases it will enable the surgeon to deal directly with the offending organ and without the necessity for an second incision unless this be required for drainage. 3. That for these reasons it makes, in the majority of cases, for the avoidance of delay and difficulty, two essentials of success in these operations, and will therefore give the best aggregate of results. 4. That in the minority of cases, in which it fails to expose the offending organ, the abdomen can be examined by touch just as well through the right semilunar as through the median incision. 5. That in those cases of intestinal obstruction where the patient can bear no more than the establishment of an artificial anus it is close to the seat of election for this operation—the cæcum or lower ileum.

All surgeons who are much engaged with the acute abdomen must experience how frequently the condition producing it is encountered between the lines (a) and (b) within the area of acute abdominal conflux, how comparatively seldom to the left of (a). To expose the former is, therefore, I venture to submit, the clear indication. In a series of 53 consecutive acute abdominal illnesses, for which I have recently operated (except one which was under my care but in which the operation was performed by a London surgeon), no less than 33, or 62·2 per cent., almost certainly had their origin in the appendix. I say "almost certainly" because in a few of them, in which a localised abscess was present, the appendix was not removed, although it was practically assured that that organ was the source of the mischief. The remaining 20 were constituted as in the following table:—

Condition.	No.	Locality of mischief.
Ruptured ectopic gestation.	5	Three right, two left.
Acute double salpingitis.	1	—
Acute intestinal obstruction.	1	Band in right iliac fossa.
"	1	Gall-stone impacted at the ileo-cæcal valve.
"	2	Malignant disease of the cæcum.
Perforation of stercoral ulcer.	1	Cæcum.
Perforation of gastric ulcer.	1	Near cardiac end.
Acute intussusception without tumour.	1	Right iliac region.
Acute hæmorrhagic pancreatitis.	1	Swelling to the left of the median line.
Acute gall-bladder and bile-duct infections.	3	Right hypochondrium.
Acute suppurative peritonitis of doubtful origin.	3	Pus evacuated by right semilunar incision.

Dealing first with the last three in the series, in all of them pus was evacuated by a right semilunar incision, but two of them were so ill that no further procedure was possible. One from the history probably had its origin in the appendix; another was not due to appendix disease, as the appendix was exposed at the operation, but the cause was not ascertained. The third case was one of suppurative peritonitis in a man, where a most thorough exploration of the abdominal viscera on the lines indicated in this paper was conducted, but without result. The patient died the next day and a very careful post-mortem examination under my own supervision failed to indicate the origin of the mischief.

Excluding these three cases of doubtful origin we have in 14 out of 17 the source of trouble within the area of acute abdominal conflux, so that out of the whole series of 53 cases no less than 33, plus 14—i.e., 47, or 90 per cent.—occurred within this area, and in an additional three pus was evacuated from it, though the source of it could not be ascertained. Of the 53 cases, in 43 a certain or probable diagnosis was made and the incision was planned to meet their requirements. In the remaining 10 either no further diagnosis was made than that an acute abdominal crisis had occurred, requiring immediate surgical interference, or where a diagnosis was made as to the condition (acute obstruction, for instance) none was arrived at as to locality. These were cases of acute perforative appendicitis with general peritonitis (six), obstruction by a band (one), obstruction due to a gall-stone impacted at the ileo-cæcal valve (one), acute obstruction consequent on malignant disease of the cæcum

(one), acute intussusception without tumour or rectal hæmorrhage (one), and acute hæmorrhagic pancreatitis (one). In all of these, with two exceptions, the exploratory incision was made in the right semilunar line and exposed the source of the trouble at once. The exceptions were the case of hæmorrhagic pancreatitis, in which a swelling was present in the upper abdomen to the left of the median line and the incision was made over it; and one of the cases of suppurative appendicitis, in which no diagnosis was arrived at, and the incision was made in the middle line below the umbilicus by a London surgeon. It would have been better, as the case turned out, to have made it in the right semilunar line. The above brief analysis, though from the limited number of cases necessarily incomplete, confirms by actual practice the conclusion as to the semilunar incision being the correct one.

In conclusion, the acute abdomen should be explored early. It must be confessed that in spite of the advance in abdominal surgery during the past quarter of a century, reducing the mortality of operations performed in the cold stage, however severe, to almost insignificant proportions, the acute abdomen remains a *bête noire* with its high mortality. The reasons are not difficult to assign. They are difficulty in diagnosis, drugs, and delay. A patient is seized suddenly with acute abdominal pain, vomiting, and collapse. It may be nothing more than an acute colic. I have myself seen apparently very severe symptoms, indistinguishable in their onset from those of a perforated appendix, for instance, produced by the administration of a couple of colocynth pills. In an hour or two of course they disappeared. Probably every practitioner can recall experiences of acute abdominal symptoms, which caused him a few hours of grave anxiety as to what had happened, but the outcome of which demonstrated that his fears were unfounded. Like symptoms, on the other hand, may be due to a serious abdominal catastrophe, in which every hour of delay in opening the abdomen materially lessens the patient's prospect of recovery. Every acute abdomen, it goes without saying, should therefore be watched from hour to hour, with the determination ever uppermost in the practitioner's mind to summon the surgeon should improvement not rapidly set in. During this interval, if there be one, morphine should not be given if it can be avoided. But it cannot always be avoided, and in such cases the minimal dose which will meet the requirements of the case should be administered. If, as has been insisted upon over and over again, the necessity for a second dose arises it should be a golden rule to invite the surgeon to see the case first. When a patient is under the influence of morphine it is well-nigh impossible to gauge the magnitude of the disaster. A patient with a perforated appendix, as I have myself witnessed, may, under its delusive sway, sit up in bed, look cheerful, and say he feels all right, and his aspect and pulse may not indicate that he is not. If the initial symptoms do not rapidly abate (and morphine, if it has been administered, must be allowed for in estimating such abatement), or if after the effect of the drug is wearing off they recur, they point almost certainly to no passing or trifling condition but to one of the serious catastrophes requiring probably immediate operation. Should the practitioner not intend to operate himself then it is manifest that the sooner the surgeon sees the case in consultation with him the better, and inasmuch as the latter has to bear the responsibility of the result of the operation it is only fair to give him every chance of insuring its success. In case of failure it is generally thought and said that the patient died from the operation, whereas in reality in most cases it is the want of operation which has killed the patient. So long as a patient with the acute abdomen is given a trial of medical treatment first for two or three days, and then, when it is evident he is not going to get better, the surgeon is called in to operate, so long as this is a common practice the mortality will inevitably be high. It cannot be denied that during the last quarter of a century the surgeon has become greedy. He has become worse. He has become omnivorous, encroaching from all sides on the province of the physician, and the latter would be more than human if he felt no reluctance to part with his cherished preserves. This is the irony of the ever-swinging pendulum. A quarter of a century ago the surgeon was not required in the acute abdomen. He is required now. By a swing in the opposite direction it is safe to say that the physician of the future will get back his own, and possibly more than his own, in other fields owing to the discovery of methods less rude and

more scientific than the knife. But knowledge as at present vouchsafed to us has constituted the acute abdomen surgical affection. The most cursory glance at the fact concerned in its production must convince any practitioner how lucky it will be if the patient survives it without surgical aid. It is true that a patient after perforation of gastric ulcer may recover. There is proof on record that has occurred. It is true that intestine may slip under band and, after giving rise to acute obstruction, may slip back again; that a gall-stone blocking the bowel may pass *per vias naturales*; that a patient after being death's door from internal hæmorrhage owing to a ruptured ectopic gestation may recover. But it will not, I think, be questioned that the chances of such lucky terminations are infinitesimal compared with the prospect of recovery if a patient is operated upon and the lesion remedied before complications have arisen which from their nature must go far to negative the success of any operation, however skilfully and carefully performed.

Southsea.

AMYL NITRITE IN HÆMOPTYSIS.¹

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THE occurrence of hæmoptysis is nearly always an alarming symptom both to the patient and his friends and the physician. The patient is usually very frightened especially if he has never had a hæmorrhage before. till then has apparently been in good health, though I have known of patients with considerable amounts of blood who have pursued their ordinary work afterwards till something or other has pulled them up and compelled them to consult their medical man. To the majority of physicians too, hæmorrhage is, I think, one of those symptoms that are glad to see the last of, for till recently our methods of appliances for its treatment have not been on the whole satisfactory, so much so that one writer remarks that "cessation of hæmorrhage after the exhibition of a drug is itself no proof that the effect was produced by the drug." In ordinary practice, by the time that the medical man reaches the patient suffering from hæmoptysis, the bleed if profuse, will probably have proved fatal, while if a slight the first alarming symptoms will have subsided the bleeding may be ceasing spontaneously. In sanatorium work, however, the physician is usually able to be called the very outset and has to be prepared to act promptly, even what appears to be only going to be a small hæmorrhage may rapidly increase and prove fatal in a few minutes as happened in a case that I shall mention presently. It being so, it follows that we should like to have available drug or drugs which will act promptly and effectively. Until recently we have had to be content with drugs which though theoretically of the correct therapeutic action—have been far from satisfactory, and perhaps largely so because of the difficulty of administration and because of their comparatively slow action.

It will be a long time before I forget the sense of helplessness that I felt in the case just referred to where the patient—a man with moderately advanced mischief in a fairly quiescent state, apparently in ordinary health—was upstairs one evening to his room and at once came again, spitting up a little blood and asked another patient whom he met to go for the doctor. My partner went once and found him sitting on the edge of the bed, coughing up blood freely, and by the time that I arrived he brought up a large quantity of blood and was almost unconscious and it was a puzzle to know whether to give morphine to try to check the cough and bleeding, or to give strychnine to try to stimulate him to cough up the blood already effused into the lungs. However, he died almost before anything could be done, but I have often wondered since—if he had been given an inhalation of nitrite of amyl as soon as he was seen—whether his life might not have been saved, or, at least, prolonged a little.

Of the drugs which are usually used in a case of hæm-

¹ A paper read before the Denbigh and Flint division of the N. Wales branch of the British Medical Association, Wrexham, Feb. 15th, 1907.

² Dr. W. E. Dixon. THE LANCET, March 24th, 1906, p. 626.

rhage—viz., ergot, adrenalin, morphine, calcium chloride or lactate—I do not think that any are of supreme value but there is no doubt that several may help considerably if there is time for them to act, though Dr. W. E. Dixon in a recent article already quoted says that “the tannins, adrenalin, digitalis, and its allies, ergot, veratrine, barium, and lead, are all worse than useless for hæmoptysis.” Morphine usually proves of some use but should be used with discretion. Its action in quietening a nervous, excitable patient, slowing and weakening the heart, and dilating the vessels, combined with its ease of administration hypodermically, is often of great value but at the same time must be remembered its action in depressing the respiratory centre and so checking cough, for it seems to me that it is often of doubtful value to check the cough, especially in those cases where there has been a fairly sharp hæmorrhage. For though to check the cough may undoubtedly help to check the bleeding, at the same time it tends to cause accumulation in the air passages of the blood already effused, and if the blood be retained it will almost certainly decompose and form a most favourable medium for the development of any number of septic and other organisms which will probably land the patient into septic pneumonia or a rapid extension of his tuberculous condition. So that it seems to me to be better—unless the patient is greatly alarmed and excited or the cough is irritable and useless—not to give morphine at all, or else to delay doing so until as much effused blood as possible has been coughed up. Meanwhile much may be done to calm an excited patient by giving directions quietly and telling him exactly what to do in restraining useless cough and in breathing regularly and gently.

Calcium salts—the best being perhaps the lactate—in profuse hæmoptysis are useless because of the time they take to act but may prove useful in cases where the bleeding continues for some days. The lactate is best given in one dose of 60 grains, repeated if necessary in a day or so.

The drug, however, which seems to me to be most valuable in practically all cases of hæmoptysis is nitrite of amyl. At first sight it appears to be madness to give a patient with a wounded and bleeding vessel a drug which acts powerfully as a dilator of vessels but—even though its action be only transient—it produces such an immediate fall in the general blood pressure by dilatation of the vessels throughout the body that the pressure at the bleeding point is lowered and there is time for clotting to take place and the hæmoptysis usually ceases almost instantly. Even if the pulmonary vessels are dilated the ill-effects are more than counterbalanced by the fall in blood pressure, but Dr. Francis W. E. Hare (who first suggested the use of nitrite of amyl) quotes in an article in the first number of the *British Journal of Tuberculosis* experiments which seem to prove that it has a direct vaso-constrictor action on the vessels of the pulmonary periphery in spite of a vaso-dilator action elsewhere. It may, however, be urged that this constriction of the pulmonary vessels is bad in that it must raise the blood pressure in those vessels, but this seems to be more than counterbalanced by the fall in general pressure, whereas in the case of adrenalin, ergot, &c., there is no corresponding fall in general pressure. Moreover, nitrite of amyl causes no reactionary pulmonary hyperæmia (after the anæmia), while adrenalin apparently does, for I have heard of a cyst being removed by a “bloodless” operation under cocaine and adrenalin and next day a large clot of blood being found in the place which the cyst had occupied. Again, nitrite of amyl has a further good point and that is the fact that it does not interfere with coughing and so does not place any obstacles in the way of the patient getting rid of the effused blood and hence it considerably lessens the risk of septic trouble later.

I now always carry three-minim capsules of amyl nitrite and as soon as I am called to a case of hæmoptysis break one and tell the patient to inhale it quietly and regularly and at the same time warn him of the feeling of fullness in the head it produces as I found this feeling had alarmed one or two patients. The bleeding usually stops almost at once, though the patient may go on coughing up clotted blood which has been already effused. After that, if the patient is excited or alarmed, or the lungs appear to be irritable, I may give a hypodermic of morphine. From my experience of its action, however, I believe that in nitrite of amyl we

have the best drug to administer first in any case of hæmorrhage.

The following are brief notes of cases which have been treated with nitrite of amyl and may be of interest.

CASE 1.—A youth, aged 19 years, with most of the right lung consolidated, without any cavities, had a slight hæmoptysis (about half an ounce) one evening. It ceased for the time being after inhaling three minims of nitrite of amyl, though for the next three days he brought up blood-stained sputum.

CASE 2.—This patient had advanced mischief in both lungs and had many hæmorrhages at various times. On March 1st he had a small sharp hæmorrhage which was followed during the next few days by several small attacks, all of which promptly yielded to inhalations of nitrite of amyl. He was placed on liquor calcoli chloridi and the blood gradually disappeared from his sputum. On May 8th he had another short hæmorrhage which yielded at once to amyl nitrite, though he continued to bring up bright coloured sputum for a couple of days, apparently from a recently formed cavity. On the 17th he brought up three-quarters of a pint of blood and this attack stopped after two capsules of amyl nitrite and morphine (quarter of a grain). On the next day at 5 P.M. he brought up two or three mouthfuls of bright blood which ceased after an inhalation. On the next day (May 19th) he started a profuse hæmorrhage and at once inhaled the contents of a capsule and was then given another by the nurse. When I arrived a minute or two later he appeared to be dying, though the bleeding had apparently ceased. His heart was beating irregularly and feebly and his pulse was scarcely perceptible. I gave him a quarter of a grain of morphine, and he revived and vomited a quantity of blood which with what he had coughed up came to two pints. There was no further hæmorrhage, but he died ten days later. In this case I am convinced that the nitrite of amyl saved him from immediate death on several occasions.

CASE 3.—This patient had a cirrhotic left lung of several years' standing, active mischief throughout the right lung, and a dilated irregular heart. He had seven attacks of hæmoptysis during three days (several being fairly sharp) and all yielded more or less promptly to inhalations of amyl nitrite. He died a day later from sudden heart failure.

CASE 4.—This patient had tuberculous mischief throughout the left lung and had three attacks of hæmoptyses. The first stopped at once with one inhalation, but the next two did not yield so promptly, perhaps because he did not have sufficient nitrite as he did not have the feeling of fullness in the head to the same extent as on the first occasion.

CASE 5.—This patient—a nervous, excitable man—had several attacks of hæmoptysis at intervals of a few days which were all fairly promptly checked by inhalations of nitrite of amyl, though he sometimes continued to bring up brightly coloured sputum for a short time afterwards.

In all there are about 22 attacks of hæmoptyses occurring in five patients, and in the whole of them the bleeding ceased at once or was remarkably diminished directly after the administration of the nitrite of amyl, so that it seems impossible not to ascribe the good effects to this drug.

Ruthin, North Wales.

ASEPTIC AND SEPTIC MIDWIFERY AT THE LIVERPOOL WORKHOUSE HOSPITAL.

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At the Liverpool Workhouse Hospital the obstetric wards are under the charge of the visiting surgeon and this is the reason that a general surgeon like myself reports the obstetrical work done in that institution during 1906. Being a surgeon, I look at obstetrics from a surgical point of view, and I consider the ragged, roughened area on the internal surface of the uterus that is left after a confinement to be for all practical purposes a *wound*, for which nature has provided an aseptic treatment of an unrivalled character, and one which meddlesome midwives do their best to upset, but which true obstetricians more and more respect. When sepsis does occur the treatment is pure surgery, modified by the position of the wound, and so-called puerperal fever is

* Ibid.

is no sense of the term a fever such as the eruptive or continued fevers are, but is a *round* fever and should be treated as such.

I shall enter no further here into these important questions, but after this brief confession of faith will proceed to describe under what conditions labours are attended at Brownlow Hill, the results of such treatment, and finally describe our treatment of some septic cases that were sent in by the medical officer of health and the measure of success which we attained by such treatment. In conclusion, I will offer some suggestions as to the management of obstetric cases in private practice amongst the poorer classes, based on an experience of many years. A thorough system of aseptic surgery is in force in the surgical wards of the workhouse hospital and this system has been gradually introduced as far as possible into the obstetrical department. These wards are in a wing of the general hospital and form part of an old building that is very much out of date for hospital purposes. The life of the old building has been prolonged up to the present only by the careful and strict use first of the antiseptic system of surgery and now of the aseptic system. Had the older systems of surgery been in vogue the whole hospital would have been pulled down long ago as unhealthy and unsuitable. We receive no assistance, therefore, from structural arrangements, but whatever success we obtain is in spite of obsolete hospital construction. Whenever a patient is admitted to the wards (which form also a training school for midwives and monthly nurses) the nurse to whom the patient is allotted by the superintendent midwife washes her hands in soap and water, scrubs them well, and soaks them for three minutes in a solution of perchloride of mercury, 1 in 1000, and proceeds to ascertain if the patient is in labour or not. If not in labour she is sent to a division of the workhouse to await that event, sleeping every night in a room adjacent to the lying-in ward. Should she be in labour her temperature is taken, and if above normal the patient is sent to another division to be confined, being attended there by the lying-in nurses. If the temperature is normal and should time allow, the patient is bathed, vulvar hair is removed, and the external parts are well washed with ethereal soap. She is dressed in warmed and thoroughly cleaned night clothes and put to bed. The mattress of the bed contains clean straw that has not been used for a bed before. The vagina is now washed out with a quart of solution of perchloride of mercury (1 in 1000). After the completion of the cleansing process the patient is given some warm milk to drink and is ready for the process of labour. The above is the usual proceeding modified by the exigencies of each case. Having again washed her hands the nurse brings a basin of izal (one drachm to the pint) and sets it beside the bed so that she may dip her hands in it frequently during the labour. We tried the Condy and oxalic method of cleansing the nurses' hands, and the surgeons still use it in operative cases, but with the nurses who have to cleanse their hands so frequently each day it caused so much irritation that it had to be abandoned and milder methods adopted.

As few digital examinations are made as possible, but the patient is closely watched both by the eye and finger for any sign of abnormality during confinement. This is reported to the head midwife who if necessary sends for the senior house surgeon or one of the two house surgeons who are always on the premises. After the labour is over a piece of iodoform-gauze is applied to any abrasions or lacerations and a sterilised pad of cotton wool inclosed in gauze is applied to the vulva. This is changed about four times a day or oftener if necessary. At the end of 24 hours the patient is removed from the labour ward to the lying-in ward, where another new and clean bed awaits her, having a small crib at the side of the bed for the baby. At the end of a week she is removed to the convalescent ward to a third new clean bed where she remains till her discharge, which generally takes place about a fortnight after the confinement. Should any patient become decidedly feverish from any cause she is removed at once from the obstetric department and treated by nurses having no connexion with the obstetric wards. Patients delivered on the street on their way to the wards are not admitted into the obstetric wards as far as possible from all dangers of infections, either puerperal or general. No visiting by friends is allowed in the obstetric wards. The results of all these precautions for the year ending 1906 are given below. Total number of labours, 401; married, 218; single, 183; primiparae, 157.

Admitted in labour, 248; from workhouse, 148; and from lock, 5. Maternity mortality, 3—viz., the forty-sixth, the 181st, and the 357th case.

Causes of maternal deaths.—Case 46, a primipara, aged 22 years, admitted with albuminuria and eclampsia. Delivered of twins, fits continued after labour, and in spite of treatment ended in coma and death. Case 181, aged 31 years, was admitted blanched and bleeding from placenta prævia. The bleeding had been going on for 24 hours. Version was performed and the child delivered. She had an attack of a low form of pneumonia and phlebitis from which she never recovered, but died after repeated relapses on July 18th, exactly a month after; no necropsy was allowed. Case 387, aged 23 years, was admitted from lock with gonorrhœal discharge and secondary ulceration of the labia. She was delivered naturally and easily, the temperature on admission being normal. The next morning she had a rigor, double pneumonia set in, and she died from that disease three days afterwards. The uterine organs were normal as verified by post-mortem examination.

Births.—Males 203, females 204; twins six times.

Infantile mortality.—Debility after birth, 21; stillborn, 7; decomposed and premature, 31.

Presentations.—Head, 377; breech, 14; foot, 7; transverse, 5; brow, 1; and face, 3. Cord prolapsed twice with head presentations.

Operations.—Forceps, 13; version, podalic, 6; cephalic, 3.

Complications, maternal.—Accidental hæmorrhage, 7; albuminuria, 6; placenta prævia, 6; eclampsia, 3; adherent placenta, 4; and pneumonia, 1. In 2 cases of placenta prævia the head came down and labour terminated naturally.

Complications, infantile.—Ophthalmia neonatorum, 1.

Mothers sent to other wards on account of being febrile, 4.

During the year 17 pupil midwives were trained here and they all succeeded in passing the Central Midwives Board at their first entrance. Nine probationers were allowed a month's practice in the obstetric wards and will be able to act as monthly nurses should occasion arise in their general nursing practice. All the pupil midwives have had two years and nine months' training in the general medical and surgical wards before they enter upon the three months' training in the obstetric wards by which they complete their three years' hospital training. Our pupil midwives consequently possess an amount of professional knowledge that few pupil midwives at the beginning of their period of training possess and are consequently much easier to teach.

I will next give a summary of cases of puerperal sepsis treated in the Workhouse Hospital, Liverpool, during 1906, all of which, except four, were admitted from the city of Liverpool, having been notified as puerperal fever—viz., 32 cases with 11 deaths, or a mortality of 36·5 per cent.

CASE 1.—Multipara, aged 33 years, admitted from town Dec. 31st, 1905. Confined nine days before admission. Comatose; purulent discharge from uterus. Treatment: uterine and vaginal douches; ergot, quinine, oxygen, stimulants. Result: death, Jan. 5th, 1906. No post-mortem examination.

CASE 2.—Primipara, aged 22 years, from workhouse lying-in, two days after confinement. Ruptured perineum. Temperature 105° F. from sixth to tenth day after confinement. Discharge from uterus. Abscess in left broad ligament, opened per vaginam. Treatment: uterine and vaginal douches; ergot, quinine, and strychnine. Discharged well, April 24th, 1906.

CASE 3.—Multipara, aged 39 years. Admitted from town Jan. 24th, 1906, ten days after abortion caused by a fall downstairs, followed by severe flooding. On admission her temperature was 104° F. There were a purulent uterine discharge and general septicæmia. Treatment: uterine douches, curetting; ergot, quinine, strychnine, stimulants. Result: death Feb. 7th, 1906. No post-mortem examination.

CASE 4.—Multipara, aged 42 years. Admitted from town Feb. 9th, 1906, 17 days after abortion; uterine hæmorrhage daily since. Patient in state of collapse, constant vomiting, and diarrhoea. Purulent and hæmorrhagic discharge from uterus. Treatment: uterine and vaginal douches; ergot, quinine, strychnine, stimulants. Result: death Feb. 13th, 1906. No post-mortem examination.

CASE 5.—A woman, aged 25 years. Admitted from town March 5th, 1906, 12 days after abortion; three or four months pregnant; severe hæmorrhage for three days; purulent uterine discharge; double pneumonia. Treatment: uterine and vaginal douches, poultices; ergot, quinine, strychnine, digitals, stimulants. Result: death March 6th, 1906.

CASE 6.—Multipara, aged 40 years. Admitted from town March 6th, 1906, six days after confinement; attended by midwife. Purulent uterine discharge; pneumonia, with a low temperature. Treatment: uterine and vaginal douches; ergot, quinine, strychnine, am. carb., and stimulants; poultices for pneumonia. Result: discharged well March 13th, 1906.

CASE 7.—Multipara, aged 36 years. Admitted from town March 10th, 1906, two weeks after confinement; attended by midwife and medical man. Purulent uterine discharge beginning ten days after confinement. Treatment: uterine and vaginal douches; ergot, quinine. Result: discharged well March 26th, 1906.

CASE 8.—A woman, aged 38 years. Admitted from town March 23rd, 1906, ten days after confinement; attended by a midwife. Purulent

uterine discharge. Treatment: douches of weak creolin; ergot and quinine. Result: discharged well April 9th, 1906.

CASE 9.—Multipara, aged 24 years. Admitted from town April 9th, 1906. Confined three weeks before. Quite well a week when healthy discharge stopped and fever and flooding and finally pneumonia set in. On admission her temperature was 105° F. and the pulse was 120. Pneumonia and purulent uterine discharge. Treatment: douches, poultices; ergot, quinine, strychnine, stimulants. Result: discharged well.

CASE 10.—Multipara, aged 30 years. Admitted May 30th, 1906, four days after confinement. Purulent uterine discharge, vomiting, pneumonia. Attended by a midwife. Treatment: douches, poultices; ergot, spiritus ammoniac aromaticus, quinine, stimulants. Result: discharged well June 13th, 1906.

CASE 11.—A woman, aged 25 years. Admitted from town June 1st, 1906, one week after confinement; was attended by midwife. Purulent uterine discharge, melancholia, bronchitis. Treatment: douches, poultices; ergot, quinine, strychnine, stimulants. Result: discharged cured June 24th, 1906.

CASE 12.—A woman, aged 22 years. Admitted from workhouse lying-in July 11th, 1906. Confined 24 hours of very decomposed child. Purulent uterine discharge. Temperature 102° F. Treatment: douches; ergot, quinine, stimulants. Result: discharged well July 21st, 1906.

CASE 13.—Primipara, aged 21 years. Admitted from town June 5th, 1906, with a diagnosis of puerperal fever two weeks after confinement; was attended by midwife. Temperature 105° F.; pulse 123. Purulent hemorrhagic uterine discharge. Pleuro-pneumonia, vomiting, but no peritonitis. Treatment: douches, poultices; ergot, quinine, strychnine, atropine, ammonia, stimulants. Result: death June 14th, 1906. No post-mortem examination.

CASE 14.—Primipara, aged 20 years. Admitted from town July 7th, 1906, 12 days after confinement; attended by midwife. Became febrile on third day—i.e., nine days before admission. Purulent uterine discharge. Treatment: douches; uterus packed with cyanide gauze; ergot, quinine. Result: discharged cured July 19th, 1906.

CASE 15.—Primipara, aged 22 years, admitted from town 12 days after confinement. Temperature 103° F.; some delirium. Purulent discharge from uterus, thick, yellow, and offensive. Treatment: uterine douches; ergot, quinine. Result: discharged well, August 11th, 1906.

CASE 16.—A woman, aged 37 years. Admitted from town August 27th, 1906. Said she had an abortion two months ago. Pale and weak. Treatment: ergot and douches. Result: discharged well Sept. 13th, 1906.

CASE 17.—Primipara, aged 19 years. Admitted from town Sept. 13th, 1906, ten days after confinement. Pulse 104; respirations 29. Delirious and noisy. Purulent uterine discharge. Diarrhoea, vomiting. Bronchitis. Treatment: uterine douches, stupes; ergot, quinine, stimulants. Result: discharged well Oct. 18th, 1906.

CASE 18.—A woman, aged 23 years. Admitted from town Oct. 15th, 1906, ten days after confinement; attended by a midwife. Temperature 103° F.; pulse 116; respirations 44. Purulent hemorrhagic discharge, vomiting, bronchitis. Treatment: douches, poultices; ergot, quinine, strychnine, morphine, stimulants. Result: discharged well Nov. 9th, 1906.

CASE 19.—Multipara, aged 36 years. Admitted from town Oct. 9th, 1906, 16 days after confinement; attended by midwife and medical man. Purulent discharge, semi-comatose, bronchitis, albuminuria. Treatment: douches, poultices; ergot, quinine, strychnine, stimulants. Result: discharged well Nov. 6th, 1906.

CASE 20.—A woman, aged 24 years. Admitted from town Oct. 23rd, 1906, nine days after confinement; attended by midwife and medical man. Purulent hemorrhagic discharge from uterus, diarrhoea, vomiting. Treatment: douches, stupes; ergot, quinine. Discharged well Nov. 8th, 1906.

CASE 21.—Multipara, aged 41 years. Admitted from town Oct. 18th, 1906, six days after confinement; attended by midwife and medical man. Temperature 103° 40' F.; pulse 132; respirations 28. Rupture of perineum, phlebitis, purulent discharge, vomiting, diarrhoea. Treatment: douches, stupes, linimentum belladonnae to legs; ergot, quinine, strychnine, digitalis, stimulants. Uterus curetted and packed with gauze. Glass tube left in uterus for one week. Result: discharged well Dec. 23rd, 1906.

CASE 22.—Multipara, aged 34 years. Confined two days before admission. Temperature 102° F. Vaginal discharge hemorrhagic and offensive. Pain in abdomen. Treatment: stupes, douche; quinine. Result: discharged well Oct. 19th, 1906.

CASE 23.—A woman, aged 28 years. Admitted from workhouse lying-in, Nov. 24th, 1906, where two days before she was delivered of decomposed child; attended by pupil midwife. Purulent discharge, vomiting, diarrhoea, bronchitis. Treatment: douches, poultices, stupes; ergot, quinine, digitalis, strychnine, stimulants. Glass drainage-tube in uterus for one week. Discharged well, Jan. 2nd, 1907.

CASE 24.—Multipara, aged 38 years. Admitted from town Nov. 16th, 1906, eight days after confinement; attended by midwife. Purulent discharge, bronchitis; looked starved. Treatment: douches, stupes; ergot, quinine, strychnine, digitalis, stimulants. Discharged well Jan. 8th, 1907.

CASE 25.—A woman, aged 29 years, admitted from town Nov. 28th, 1906, very weak and ill, 12 days after confinement; attended by midwife. Temperature 102° F.; pulse 133; respirations 32. Purulent hemorrhagic uterine discharge, vomiting, diarrhoea, bronchitis. Treatment: douches, poultices, stupes; ergot, quinine, strychnine, stimulants. Result: discharged well, Dec. 28th, 1906.

CASE 26.—Multipara, aged 30 years. Admitted from town Dec. 4th, 1906, five days after confinement; attended by a midwife. Patient in a state of collapse, delirious, cyanosed. Purulent discharge, peritonitis. Temperature 104° F.; pulse 166; respirations 36. Treatment: douche, poultices, stupes; strychnine, quinine, digitalis, stimulants. Result: died nine hours after admission. No post-mortem examination.

CASE 27.—Primipara, aged 22 years. Admitted from town Dec. 5th, 1906, seven days after confinement; attended by midwife. Delirious, badly lacerated. Purulent hemorrhagic discharge. Temperature 104° F.; pulse 160; respirations 48. Treatment: douches, stupes; nutrient enemata, ergot, quinine, strychnine, digitalis, stimulants. Result: death Dec. 7th, 1906. No post-mortem examination.

CASE 28.—A woman, aged 28 years. Admitted from town Dec. 5th, 1906, ten days after confinement; attended by midwife. Delirious;

abdomen distended, purulent discharge from uterus, bronchitis. Temperature 104° 60' F.; pulse 134; respirations 33. Treatment: douches, stupes, poultices; ergot, quinine, strychnine, digitalis, stimulants. Result: death Dec. 11th, 1906. Post-mortem examination, purulent peritonitis.

CASE 29.—A woman, aged 31 years. Admitted from town Dec. 11th, 1906, five days after confinement; attended by midwife. Vomiting, diarrhoea, double pneumonia, purulent discharge from uterus. Temperature 103° 80' F.; pulse 124; respirations 36. Treatment: douches, poultices, steam tent; ergot, quinine, strychnine, digitalis, stimulants. Death Dec. 14th, 1906. Post-mortem examination, septic uterine double pneumonia.

CASE 30.—Multipara, aged 32 years. Admitted from town Dec. 13th, 1906, three days after confinement; attended by midwife. Vomiting, abdomen distended and tender, purulent hemorrhagic discharge from uterus, bronchitis. Treatment: douches, stupes, poultices; ergot, quinine, strychnine, digitalis, stimulants. Result: death Dec. 15th, 1906. Post-mortem examination, purulent peritonitis.

CASE 31.—Multipara, aged 27 years. Admitted from town Dec. 17th, 1906, six days after confinement. Diarrhoea, vomiting, pain in abdomen, purulent discharge from uterus, right basal pneumonia. Treatment: douche; ergot, quinine, strychnine, digitalis, ether, alcohol. Valentine's meat juice hypodermically. Result: death Dec. 17th, 1906; no post-mortem examination.

CASE 32.—From our own lying-in and recorded in our maternal mortality.

For the notes of these cases I am indebted to Dr. John T. Moore, resident medical officer, to whose careful douching and unfailing assiduity the saving of the lives of several of these poor women may be justly attributed.

Considering the class of woman confined at the Liverpool Workhouse Hospital, the results of the year's work in the obstetrical wards are about as good as we can reasonably expect. A study of the three maternal deaths will show that none of them can be laid at the door of the hospital, but were all cases with serious complications that often lie beyond the powers of medical science. The obstetrical wards of the Liverpool Workhouse have always been remarkable for their low maternal mortality, and thanks to aseptic midwifery this low mortality is not only maintained but is placed on a much surer foundation than formerly. At intervals in the past, though rarely, we had to evacuate our obstetrical wards and flee to a remote part of the building for a time until the fever-stricken wards were purified. We have not had to beat a retreat for many years and while the aseptic system is maintained as at present we do not expect any such retreat to be ever necessary. Obstetric wards can now compete favourably with private midwifery practice, as 0.74 per cent. is a very creditable mortality amongst the lowest class of mothers.

When a patient after confinement in our obstetric wards becomes feverish she is removed to an isolation ward not connected with our lying-in ward. Here if the pyrexia survives movement of the bowels or if the lochia are at all affected the uterus is douched out with perchloride of mercury succeeded by boric lotion. This operation is always performed by one of the medical staff. It is an operation requiring skill and judgment and should not be undertaken by most nurses. Quinine and ergot are the medicines we use in order to produce uterine contraction and to control pyrexia and the treatment is generally rapidly successful. These attacks of pyrexia mostly occur where decomposed children are brought forth and such cases are very amenable to treatment. Sometimes a single douching is all that is necessary. Sometimes two or three are required, but rarely more in our own cases. In some cases, both of our own and of the outside cases, the uterus did not drain satisfactorily and the temperature soon rose again after douching, the os closing and the flaccid walls of the womb that have lost their contractile force lie together harbouring pools of septic material. In two such cases it will be noticed that we inserted a drainage-tube into the uterus with a most beneficial effect. In another case we packed the uterus in double cyanide gauze, in another case we curetted, in another we opened a broad ligament abscess, and by following up the lesions from point to point on surgical principles in this way we certainly diminished the mortality very materially.

I have given a brief summary of 28 cases admitted from town to our hospital wards, most of which were admitted by the orders of the medical officer of health. Some of these were moribund on admission and died a few hours after. Others were hopeless, although they lived for two or three days after admission, but in not one of these cases, although in nearly all of them the uterus was septic, did we have any history of the uterus having been washed out before admission. In several of the cases where the condition of the patient was sufficiently alarming on admission the thorough washing-out of the uterus acted like a charm, and I suspect that many of the

saved by this very simple procedure. But the use of the term "puerperal fever" seems to produce a feeling of mystery and of dread in regard to the poor sufferers, inasmuch that medical men as well as midwives avoid close contact or even any connexion with a puerperal case. The disease is looked upon in the same way that scarlet fever and erysipelas are looked upon, and the only desire is to get rid of the patient as soon as possible. When asepsis fails in an operation wound the surgeon does not act in this manner. He opens up the wound, drains it, or washes it out with an antiseptic, taking care, by the use of gloves, antiseptics, &c., that his hands and dress are not polluted through his attention to such a case. The same course could, and should, be carried out in obstetrics. But it must be carried out by medical men, not by midwives. It seems to me that all the midwives of a district should be under the supervision of a medical man whose attention should be called to all cases of pyrexia in the lying-in period and to whom all confinements in his district should be reported each morning as they take place, and for whose well-being he would be considered responsible. He should be well remunerated for his services and it should be understood that his duty was to ascertain and to remove all preventable causes of puerperal mortality. He would guide and encourage midwives in their efforts to carry out aseptic midwifery. At present punishment by suspension is what the midwife has to fear, but this only occurs in flagrant cases, especially where death has occurred, and is a poor satisfaction to mourning relatives, and may be hard on the midwife who perhaps tried to obtain the help of a medical man but could not. The Midwives Act is defective in that it does not afford to the poor honest women of the country anything like as complete facilities in their confinements as those which the Poor-law affords to the pauper mothers who are confined under its patronage.

Liverpool.

A CASE OF MULTIPLE CIRCUMSCRIBED LIPOMATA TREATED WITH ETHYLATE OF SODIUM.

By AGNES F. SAVILL, M.A. ST. AND., M.D. GLASG.,
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The following case of multiple circumscribed lipomata is of interest owing to the remarkable improvement under treatment.

The patient, a male, aged 31 years, came under my care at the hospital in June, 1903, complaining of "swellings under the skin" with considerable itching over some of them.

History of the "swellings."—In 1895, when the patient was 24 years old, he noticed a swelling somewhat smaller than a cherry on the flexor aspect of the right forearm. It itched a good deal, and as it slowly increased in size he went to Guy's Hospital, where it was excised. About a year later a second swelling appeared on the flexor aspect of the left forearm. So far as the patient can tell, no other swelling became visible till 1900 (i.e., nearly four years later). Between 1900 and 1903 they rapidly increased in number on the arms, legs, and trunk, and the larger ones caused itching.

Condition of swellings in June, 1903.—The swellings numbered between 17 and 20; the precise number was unfortunately not noted at the time because it was not expected that they would soon respond to treatment. The swellings were only roughly symmetrical in position and were situated immediately beneath the skin. Most of them were freely moveable and could be picked up between the finger and thumb; the older and larger ones appeared to have prolongations downwards into the muscular tissue. They varied in size from a threepenny-piece to a five-shilling-piece in diameter; the skin above them was raised about half an inch to an inch above the surrounding skin. The largest was not quite as large as an ordinary hen's egg and the smallest felt like a pea; many were flattened like an almond. The larger swellings had one or two pea-sized satellites in their vicinity. The swellings were hard and the skin above them showed no puckering when pinched up; they had a definite circumscribed outline and were not

lobulated. The skin over the older tumours was pink, with dilated venules visible to the naked eye. The tumour which had appeared in 1896 was very firm and of about the size of an almond; it was excised and examined microscopically, and proved to be of typical lipomatous structure.

Family history.—The patient had five brothers and four sisters. Two of the sisters died young; one is mentally deficient. One brother, aged 25 years, developed a "swelling" in 1905, but I have not seen him.

General health.—The patient had measles in childhood. In 1896 he had scarlet fever. He never had rheumatic fever. There was no history of syphilis, but he had a soft chancre in 1895. He was of average height, with a short neck and broad chest. There was no obesity. The heart and lungs appeared to be normal; the liver edge was just palpable on deep inspiration. The patient regarded himself as enjoying average health but there were about him signs of defective vascular tone, unmistakable to an experienced eye. The skin showed irregular mottling over almost the whole of the body. This mottling is visible in many individuals with defective circulation during cold weather but this patient showed the condition even on a warm day. All along the costal margin of the thorax there were telangiectases. The facial contour varied from day to day, having a flabby appearance when the patient felt "slack" and at such times the orbital fissure became narrowed, although no definite oedema beneath the eyes was ever seen. Every physician recognises this marked variation of the facial contour in subjects of what, for want of knowledge of the cause, we term deficient vascular tone. The extremities were frequently blue and swollen; the finger ends were inclined to be bulbous. The patient said that after a heavy meal, especially on a cold day, his ears and fingers up to the knuckles often became white and numb. He had been accustomed to take from three to six glasses of beer daily since the age of 20. He took spirits at times but had never been a hard drinker.

Treatment.—1. *Local treatment* consisted in painting the skin over each swelling with ethylate of sodium. At first this was done once a week but after a month the patient in his zeal exceeded his instructions and began to paint the skin daily. This set up inflammation and he developed a superficial ulcer over the largest lipoma, situated just above the right buttock, and redness and tenderness over several others. This was readily soothed down and the patient was instructed to paint the swellings two or three times weekly till the skin should become reddened, then to leave off local treatment until the skin returned to its normal condition, when the application might again be resumed. These directions were faithfully carried out until the early spring of 1906. He was then ordered to massage and rub the remaining lipomata and to douche them with as hot water as he could tolerate. 2. The *general treatment* was perhaps as important as the local treatment. A testotal regimen was prescribed. At first the diet was regulated in order to improve the dyspepsia but after a few months no restrictions were placed upon the diet. Active exercise in the form of bicycling had always been a favourite pastime with the patient and he was encouraged to continue the habit more regularly. In the spring of 1904 he began to practise deep breathing exercises and Swedish movements and has gradually increased these, practising them morning and evening. The constipation has been treated on the usual lines of diet, exercise, and pills of aloin with nuxvomica. Various tonics containing strychnine or nuxvomica, quinine, phosphoric acid, and iron were given at intervals from 1903 to 1906. In May and June, 1904, thyroid (2½ grains three times a day) was tried but had to be omitted because of the "clammy hot attacks" he suffered from whenever he took it regularly. In March, 1906, he was put on 20-grain doses of calcium chloride three times a day with the object of reducing the blueness and swelling of the fingers during the cold spring winds. He continued to take this from time to time till the warm weather of summer; it did not affect the remaining lipomata but it improved his general health and made him feel "braced up."

Effects of treatment.—No fresh tumour appeared after the commencement of treatment although between 16 and 19 lipomata had appeared within the three preceding years. A marked diminution in the size of the softer lipomata was noticed within a few months from the beginning of treatment, and by November, 1904—i.e., in less than 18 months—only 12 lipomata could be found, the smallest tumours having entirely disappeared. The remaining dozen very slowly but very steadily decreased in size. To-day (March, 1907)

on looking at the surface of the body of the patient there is only one slight swelling visible to the eye over a lipoma which is situated on the extensor aspect of the right thigh. It is only after most careful palpation that ten swellings can be discovered in the sites where, three years previously, there existed prominent tumours. Four of these remaining lipomata give to the examining finger a sensation as of a flat bean situated in the muscular tissue (being impalpable except on picking up the muscular tissue); six are not larger than a pea and are equally deeply situated and difficult to palpate. Several fine cicatricial areas are present over them, the result of the over-zealous preliminary treatment. The general health is much improved; the skin is less mottled, the eyes are bright, the lethargy and dyspepsia have vanished, and the movements are more alert. The telangiectases along the costal margin are still present but have not increased.

Previously recorded cases.—The literature on this subject is more scanty than would be expected. Surprised at the good result of treatment in my case I looked up the bibliography of multiple lipomata and found it consisted largely of short descriptions of cases of diffuse lipomata, the majority of whom had been exhibited at the medical societies. There was little reference to treatment. Previous to the introduction of antiseptics there are several interesting records of treatment in the French medical journals. The writers point out the usefulness of their methods of treatment, by which "all bleeding is avoided, and above all, erysipelas, which sometimes leads to death." After antiseptics rendered excision free from danger, there is but little further record of other than surgical treatment for lipomata. In 1839 Leviez¹ mentioned a case of a large fatty tumour under the chin which resisted all liniments, but after pustulation had been induced by friction with a certain pomade a cure ensued. In 1859 Legrand² described a method of linear cauterisation by zinc chloride, followed by application of caustics to the exposed tumour. He admits the painfulness of the procedure, but praises its safety. In 1863 Dr. Saul³ reported a case of multiple tumours which improved slightly under potassium iodide in doses of six grains three times a day. The tumours appeared to be of a lipomatous nature, but no microscopical examination was made. In 1872 Mr. J. Gay⁴ described a case of multiple lipomata which resembled my case more than any other description I have met with. The tumours were firm and hard, with well-defined outline, situated immediately beneath the epidermis. They occurred in a stout middle-aged man who suffered from dyspepsia and cold extremities. Under a course of treatment directed to the improvement of the general health and frequent hot baths (120° to 130° F.), given with the aim of liquefying the fat and so promoting its absorption, many of the tumours disappeared and the hard ones became softened. In 1881 Dr. Pritchard⁵ reported a case of multiple symmetrical lipomata, averaging in size a small bean. They had lasted for 25 years; some disappeared when fat in other parts of the body decreased. In 1887 Dr. W. K. Sibley⁶ exhibited a case of a man, aged 32 years, who for five years had symmetrical lipomata appearing on the body. He was a plethoric individual whose face showed capillary dilatation; and he was addicted to drinking beer and spirits. When he was working hard the swellings became reduced in size. In 1886 Mr. Morrant Baker and Mr. A. A. Bowlby⁷ described a large number of cases with multiple diffuse lipomata in which the individual swellings were from five to six inches long, softer and more deeply situated than in Mr. Gay's case, and of indefinite outline. They referred at the same time to previously recorded cases and drew attention to the fact that the patients were males and that in almost every case there was a history of hard drinking of beer and spirits. A few cases had derived slight benefit from the administration of liquor potassæ 20 minims three times a day (Brodie's⁸ method). No good had resulted in cases treated with tincture of iodine internally. In Quain's "Dictionary of Medicine" (third edition) the following interesting remarks occur in the

paragraph dealing with the treatment of lipomata: "Though fatty tumours are said to shift their position, and sometimes to diminish in size spontaneously, they are not to be dispersed by internal remedies or external applications. It is said that if they result from beer-drinking they will diminish if the habit be discontinued."

Remarks.—The case is of interest both from the pathological and the therapeutical point of view. The pathological interest lies in the association of fatty deposits and telangiectases and the possible relationship between these two phenomena. As the patient was unaware of the thoracic telangiectases and mottling of the skin it is impossible to say whether they preceded or followed the lipomata. The long history of white and numb fingers and ears points to the presence of a defective circulation existing for many years. In such subjects beer and spirits, being vascular dilators, are very injurious and tend to increase the unhealthy condition of the peripheral circulation. It has long been recognised that obesity is associated with defective circulation and it has been considered that the phenomenon is due to the resulting defective oxygenation of the tissues. Thus, obesity occurs with anæmia and with cardiac disease in certain persons. It is quite probable that the local fat deposits in the above case were due to a local stagnation of the circulation. Obesity in certain regions has been reduced by massage and irritants applied to the overlying skin, the reduction probably being due to the increased blood-supply to the part. It was, with this idea in mind that I commenced treatment with a strong caustic application over the tumours. As I did not expect the result which has fortunately occurred, the notes of the precise measurements, sites, and rapidity of diminution of the lipomata are not so accurate as they would otherwise have been. The treatment was pushed in the early stage till a dermatitis was excited; and the diminution of the tumours was very rapid during the first two months, more rapid than during the later stages, when dermatitis was avoided. In the spring of 1906 the patient observed that the lipomata had not made much improvement during the previous half year; and therefore the caustic applications were discontinued. The remaining portions of the lipomata (with the one exception above referred to) were at that time so deeply situated that it was improbable that cutaneous applications could affect them.

This method of treatment by caustics may be recommended where operation is inadmissible, by reason of the large number of the tumours, objection on the part of the patient, or for any other cause. In cases where it is desirable to avoid the scarring consequent on excision, this method may also be recommended because if carefully performed under medical supervision no scar need result.

Upper Berkeley-street, W.

THE TEACHING OF THE HYGIENE OF THE EXPECTANT AND SUCKLING MOTHER.¹

BY JOHN F. J. SYKES, M.D., D.Sc. EDIN.,
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[Dr. Sykes commenced his paper by saying that in times past various factors had been assigned as the causes of a high infantile mortality. It now, however, seemed clear that faulty maternal hygiene was the *fons et origo mali*. The resisting powers of the infant by which it is enabled to fight adverse influences should be acquired and maintained for the nine months before birth just as much as during the nine months after birth. Therefore the hygiene of the expectant mother takes first rank and this, with the hygiene of the suckling mother, precedes all other considerations. Dr. Sykes then quoted certain statistics as to decrease in birth-rate, increase in the mortality of infants under one year, and decrease of breast-feeding. He continued:—]

Infantile mortality, from the point of view of deficient nutrition and viability, may be expressed in the following form:—

A. Ante-partum and ante-natal causes.—(a) As to the mother, resulting in (1) diminished vigour and reduced resistance to adverse influences; or (2) deficient nutrition, growth, and differential development of the embryo. (b)

1 Abstract of a paper read on June 13th, 1906.

¹ Gazette Médicale de Paris, 1839.

² Gazette des Hôpitaux, 1859.

³ Transactions of the Pathological Society of London, vol. xv.

⁴ THE LANCET, Oct. 26th, 1872, p. 693.

⁵ Brit. Med. Jour., vol. i, 1881.

⁶ Transactions of the Pathological Society of London, vol. xxxix.

⁷ Transactions of the Royal Medical and Chirurgical Society, 1883, vol. lxi.

⁸ Brodie: Lectures on Pathology and Surgery, 1846, p. 202 (American edition).

the infant, resulting in (1) premature birth and death or later after birth; or (2) deficient viability and death or feeble early existence.

Post-partum and post-natal causes.—(a) As to the infant, resulting in (1) deficiency in quality or quantity of breast-milk; or (2) suppression of breast-milk through illness or designedly. (b) As to the infant, resulting in (1) excessive wasting; or (2) premature weaning and failure of the alimentary system. Initial low viability and consequent want of breast-milk are the main ultimate causes of the bulk of infantile mortality.

Dr. Sykes then quoted statistics from St. Pancras, Birmingham, Huddersfield, and Brighton showing how far infantile mortality is in the hand-fed than in the breast-fed infant. He continued:—]

Ante-partum and ante-natal conditions there are certain; they are moral and economic. The vices of alcoholism, the uses of certain drugs, and the incidence of certain diseases must be overcome by the moralist, but they are less largely than the great economic condition of poverty, which brings to the mother insufficient food, inefficient rest, excessive work, and extra stimulation, a vicious circle from which she can only be freed by the hand or the philanthropist. Work is not injurious to the expectant woman provided it be not heavy or prolonged. At the same expenditure of money the food and drink may be nutritious or valueless, and even injurious, according to the knowledge and inclination of the mother. It is here that medical advice becomes of so much value in directing the mode of life and the diet with a view of maintaining the health of the mother during some nine months' expectancy, and preparing her for suckling during another nine or ten months. It is here, too, that the father has his part to play in helping to provide the necessary food and rest. When we speak to the mothers of the country what shall we say to the fathers?

"The woman's cause is man's. They rise or sink together. Dwarf'd or godlike, bond or free; If she be small, slight-natured, miserable, How shall men grow?"

Assuming ante-partum conditions to have remained the same, we should have expected the mortality of infants under one year to have decreased *pari passu* with the death-rate at all ages under the influence of improved housing, greater cleanliness of the dwelling, diminished overcrowding, increased scavenging, extended sewerage, better removal and disposal of domestic refuse, and more perfect drainage, but these have been counteracted by increased hand-feeding, earlier weaning, diminished opportunity for continued breast-feeding due to the separation of the mother and the suckling for various reasons, diminished capacity to continue or even to commence breast-feeding due to the lowered health of the mother during the suckling period, or even earlier during the expectant period without later recuperation.

In regard to the feeding of suckling infants, the first thing is to reduce hand-feeding to the smallest proportion possible; it will then be an easier matter to deal with the few remaining hand-fed sucklings. In order to do this it is necessary to ascertain the causes of premature weaning and to remove them or to counteract them. In St. Pancras in 1904 it was ascertained that only about 60 per cent. of infants were wholly breast-fed; in 1905 the proportion had risen to 68·8 per cent. The actual numbers in each year were 457 breast-fed of 772 cases inquired into during 1904 and 530 of 793 cases in 1905. In 1905 fuller inquiry was made into 277 cases of prematurely weaned infants and the ages and causes of weaning were ascertained. In 71 cases there was only partial weaning. Of the 206 cases in which there was premature complete weaning it was found that 78 were weaned at birth, 73 within the first month, and 55 subsequently (mostly during the second and third month). Of these cases prematurely weaned, it was found that from one-half to two-thirds were probably preventable. Now, if of the 33·2 per cent. of sucklings not wholly breast-fed in 1905, one-half can be prevented, it follows that 63·4 per cent. can be wholly breast-fed and, if two-thirds can be prevented, nearly 89 per cent. can be breast-fed. I believe that if proper and complete measures were seriously taken the proportion of partially and wholly hand-fed sucklings need not reach even 10 per cent. Baron Katschiro Takaki, Surgeon-General of the Imperial Japanese Navy, informed me that 99 per cent. of the infants in Japan were breast-fed.

The causes of premature weaning are mainly dependent

upon the mother and of those that are dependent upon the infant a number are probably the effects of ante-partum conditions. The maternal causes of premature weaning are numerous but there is a material difference between those that do not separate mothers and sucklings and those that do. The main causes which do not necessarily separate the mother from her babe are (1) purposeful weaning to avoid the irksomeness of suckling, this is mainly confined to the leisured class; (2) incidental weaning through insufficient knowledge, this is common amongst the working classes, as are also the following: (3) lowered health or vigour of the mother and deficiency of breast milk, mainly due to erroneous and incomplete hygiene, including improper and insufficient food; and (4) more serious ill-health due to various causes, some of which are also preventable.

The main cause which separates the mother from her suckling babe is "going out to work." In illegitimate cases the father shirks his duty and the law only compels him to contribute partially towards the support of the child and not at all towards the support of the mother during the period that she should be suckling her infant. This is a difficult social question, but it was a pleasure to read in the public press that in the case of *McLaglen v. McLaglen*, in the Divorce Court on April 24th last, Mr. Justice Bargrave Deane ordered a baby, who had been forcibly carried off by the father, to be returned to its natural food at its mother's breast. The natural right of the child prevailed over the common law right of the father.

In legitimate cases the mother goes out to work either (a) because of the father dying, deserting, or idling, or (b) because the father is out of work through economic causes. There is no doubt that in St. Pancras the number of suckling mothers who go out to work does not approach by far the number going daily from home to factory in some of our large manufacturing towns. It is in these towns that the separation of mother and suckling infant cries out loudly for prevention. The remedy I suggest is that infants of suckling age should not be admitted to municipal crèches and public nurseries, but that a manufacturer who elects to employ the labour of mothers with suckling infants on account of its cheapness should provide a cradle-room for the infants and give facilities to the mothers to suckle their infants at proper intervals. This would mean about a quarter of an hour in the middle of each of the forenoon and afternoon shifts. At present a premium is placed upon hand-feeding which is destroying the vitality of the coming generation.

The length of time during which women should cease industrial work before and after confinement is still a matter of dispute. Most mothers, if sufficiently nourished, can do ordinary work, but exhausting work dries up the breast milk, especially that of ill-nourished mothers. In a report towards the end of 1904, instead of weaning and artificially feeding infants on modified milk, I advocated supplementing the mothers' diet, and, in a further report, recommended as the only method of humanising cows' milk—passing it through the mother. Madame Coulet, under the inspiration of Professor Coulet of Caen, was at that time (unknown to me) commencing to put into practical effect in Paris the feeding of necessitous suckling mothers, now carried on at a number of free restaurants, the only qualifications for admission to which are poverty and breast-feeding. Why can this not be carried out in England? guarded from abuse by the certificate of the woman inspector or voluntary visitor as to poverty, and by medical certificate as to health and breast-feeding?

There are numerous cases of malnutrition amongst our poor in which, on quitting the lying-in room, the breast milk dwindles or becomes impoverished. Many cases are known to nurses, midwives, and medical men and if reported and assisted the breast milk might be saved and enriched.

"The very first of human life must spring from woman's breast."

In the hygiene of the expectant and suckling mother is contained the most powerful preventive of infantile mortality. The teaching of the hygiene of the expectant and suckling mother has been said to be ideal. All work must be directed towards an ideal; the important question is whether the ideal is good, better, or best, and whether in adopting a good ideal as a temporising measure instead of a better you may not mar the best.

* Mrs. W. E. Gordon has started cheap dinners in Chelsea for nursing mothers insufficiently nourished. Thus both mother and infant are nourished at less cost than a hand-fed infant.

If hand-feeding is encouraged breast-feeding will be discouraged, if breast-feeding is discouraged the incentive to maintain the health of the suckling mother will no longer remain; and if the prospect of suckling be removed the preparation of the expectant condition of the mother will be neglected, not only with disastrous results to the suckling of the infant, but also to the building up of its constitution before birth. It is dangerous to arrest a series of consequential natural events in any part of their course. It has also been said that preventive medicine tends towards the survival of the unfit. The cultivation of natural processes rather than unnatural must be regarded as tending towards producing the fittest.

Every effort should be exhausted upon improving the health of the mother before directing efforts solely to the infant. The hygiene of the expectant and suckling mother cannot be taught to children in school, the wives and mothers themselves must be taught. Medical men, midwives, and maternity nurses must learn and must teach. Women inspectors and lady visitors must not only teach and influence mothers as soon as possible after the birth of infants but must make every effort to reach them before. There should be no divorce of advice as to the mother from advice as to the infant that should be dependent upon her for well-being and nourishment. When such a divorce takes place the principal error is already committed.

For a long time past it has struck me that the promiscuous distribution of leaflets instructing mothers how to hand-feed their infants is beginning at the wrong end, and even prefixing a few words of advice as to breast-feeding does not correct the preponderant details of advice as to how to avoid breast-feeding. In my opinion advice upon the cultivation of breast-feeding should be altogether severed from advice upon hand-feeding, and no leaflet of advice upon hand-feeding should be distributed promiscuously, but each such leaflet should be given only in each individual case to which it is applicable and only after all efforts to establish or to maintain breast-feeding have been exhausted and the medical adviser has definitely advised weaning, and the leaflet itself should bear the name and address of the particular mother's child to whom it is intended solely to apply. As to whether separate leaflets should be issued for the expectant and for the suckling mother may be a matter of opinion, and perhaps the preponderance is in favour of a combination, since from conception to weaning the infant is dependent for well-being and nutrition upon the mother for 18 months.

It is contrary to physiological law to expect that a mother can with impunity suppress or neglect the natural function of such large and active organs as the mammary glands. There are certain bad effects upon the health of the mother which we know may follow the neglect of the function of suckling, certain others that are surmised, and probably certain others of which we are ignorant, observation or research not having yet traced them to their true causes. We know that mammary abscesses may arise from this cause, and we also know that incomplete involution of the uterus follows from inactivity of the breast functions. It has been surmised that amongst the excitants determining the localisation of cancer the suppression of breast milk is to be reckoned. When it is realised that the breasts yield from one pint increasing to three or four pints of milk daily it can be readily realised what a profound influence the suppression of this natural process must have upon the physical and mental condition of the mother.

[Dr. Sykes here quoted the Card of Advice to Mothers which was issued by the St. Pancras Borough Council in 1905.]

St. Pancras has been fortunate in having two women inspectors, B.A.'s of London, holding certificates, and thoroughly conversant with their work, in which they are enthusiastic. This work, which Miss Bibby commenced, has been continued and elaborated by Miss Gardiner, since assisted by a staff of visiting ladies. The experience is: 1. That working-class mothers are specially anxious that their infants should be born healthy and robust and be healthily bred, and that they will make every effort and sacrifice to secure these results and welcome any advice and assistance to improve their own health and that of their sucklings. 2. That it is due mainly to want of knowledge, advice, and assistance that (a) a large number of infants are born prematurely and die soon after birth; (b) that a large number of full-time infants are born so feeble as to live only

a few weeks; (c) that a large number of infants are not suckled at the breast after being born; and (d) that a large number of infants who are suckled at the breast for a few weeks are weaned prematurely. 3. That by means of proper advice and assistance the health of expectant mothers can be improved and prepared for suckling and that of suckling mothers maintained; that the number of breast-fed infants can be largely increased; and that, as the mortality of breast-fed sucklings is so much less than that of hand-fed, the results of such action should be most beneficial. 4. That sick and weakly mothers, and consequently hand-fed sucklings, are special objects for medical supervision and guidance, each individual case requiring individual attention.

St. Pancras has also been fortunate in having as chairman of the public health committee Dr. R. M. Beaton, L.C.O., who convened the conference on the Prevention of Infantile Mortality, over which he presided in June, 1905, at the town hall, and which Sir William Broadbent, Sir Lauder Brunton, Mr. E. B. P. Moon, M.P., Professor Herbert Spencer, Mrs. Soharlieb, Miss Vaughan, Mrs. Fleming, and many other well-known persons supported. This conference, assisted by the women inspectors and a staff of lady voluntary visitors, gave an immense impetus to the movement and the elaboration of an organisation.

[Dr. Sykes then described the system of organisation which was elaborated at the above-mentioned conference. It included measures for obtaining information of births at the earliest possible moment and of information of expectant mothers. With regard to the giving of information, measures were adopted for advising mothers, both before the birth of their children and after, as to the best means of maintaining their own health and that of their children. Dr. Sykes continued:—]

Professor Pinard and Dr. Variot have called attention to the success of puericulture, both before and after birth, at Creusot, where the immense manufacturing works of Messrs. Schneider are situated. Messrs. Schneider have proceeded by encouraging municipal, and especially working-class, sanitation, by raising the salaries of workwomen so as to enable them to perform their functions of maternity, and by providing medical assistance to attend upon and advise the workpeople. Expectant mothers are properly advised as to hygienic measures; they are forbidden to work after the quickening, about the fifth month, or to return to work after convalescence until medically certified. The results have been a reduction in premature births, a reduction in infant mortality, and an increase of breast-feeding to over 80 per cent. The mayor, Mr. Benjamin Broadbent, in an open letter addressed to the mothers of Huddersfield, has described the success of his experiment, commenced in November, 1904, of offering £1 reward to every baby surviving the first anniversary of its birth in the township of Longwood. He has also described the series of regulations promulgated in 1894 by the mayor of Villiers-le-Duc in France for providing early and free medical advice and attendance for the expectant mother and subsequently for the suckling mother and her infant, together with a grant for extra food during the lying-in and the suckling period, and it is interesting to note in the recommendations supplementing the regulations how the mother is repeatedly advised to consult the medical man when any deviation from health occurs in any individual case.

These methods are on right lines. There is room for municipal effort in teaching and promoting the personal hygiene of mothers in association with the medical and nursing professions and the labours of sociologists and philanthropists, and (1) to teach mothers how to prepare for and maintain breast-feeding and not to wean prematurely; (2) to assist ill-fed mothers in obtaining proper nourishment to prepare for and maintain breast-feeding, utilising existing institutions, societies, and associations; (3) to advise mothers that if they must go out to work they must take their babies with them to continue breast-feeding; (4) to persuade employers to provide cradle-rooms and facilities to enable the suckling mothers employed to continue breast-feeding; and (5) to refer to medical attendants to advise those mothers who require special treatment to improve and maintain their health that they may order such necessities for mother or suckling as may be required.

With regard to untimely, heavy, or prolonged work by pregnant and suckling women in factories, workshops, and workplaces, it is provided in Part. IV. of the Factory and

Workshop Act, 1901, s. 79, "Where the Secretary of State is satisfied that any manufacture, machinery, plant, process, or description of manual labour used in factories or workshops is dangerous or injurious to health or dangerous to life and limb, either generally or in the case of women, children, and other class of persons, he may certify that manufacture, machinery, plant, process, or description of manual labour to be dangerous; and thereupon the Secretary of State may, subject to the provisions of this Act, make such regulations as appear to him to be reasonably practicable and to meet the necessity of the case"; and in s. 83 the regulations may, among other things—"(*a*) prohibit the employment of, or modify or limit the period of employment of, all persons or any class of persons in any manufacture, machinery, plant, process, or description of manual labour certified to be dangerous."

By s. 61 it is already provided that "an occupier of a factory or workshop shall not knowingly allow a woman or girl to be employed therein within four weeks after she has given birth to a child." If, therefore, the Home Secretary could prohibit, or modify or limit the period of, the employment in certain industries or processes of pregnant women after quickening, more good would be done than by the indiscriminate prohibition of pregnant women to work for a fixed period after confinement. If the Home Secretary cannot take action under existing provisions he should be given the power to make regulations for mothers during the expectant and suckling period as to the kind and amount of work they should be limited to in certain industries or processes after the quickening, and as to requiring employers to provide facilities for mothers to suckle their infants at intervals when at work during the suckling period.

In conclusion, it must be said that you cannot rear an imperial race on the bottle. History tells us through the ages that it was the mothers who reared the imperial races of the past, as they will continue to do in the future. If we intend to remain an imperial race, we must restore to its imperial place the dignity of motherhood, and repeat again and again: "The hand that rocks the cradle rules the world."

Camden square, N.W.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Co-existence of Appendicitis and Obstruction.—Dislocations and Fractures of the Thumb and Great Toe.—Volvulus of the Entire Small Intestine, Cæcum, and Ascending Colon.

A MEETING of this society was held on March 26th, Mr. J. WARRINGTON HAWARD, the President, being in the chair.

Mr. J. HUTCHINSON, jun., gave an account of a case of Co-existence of Suppurative Appendicitis and Intestinal Obstruction in a girl, aged 15 years. The girl had suffered from an attack of appendicitis some months previous to the onset of acute symptoms. The abdomen was opened in the middle line, the obstruction relieved, and the feetid pus removed from the abdomen. The girl made a good recovery.

Mr. HUTCHINSON also showed a series of drawings and radiographs illustrating certain Dislocations and Fractures of the Thumb and Big Toe.

Mr. HUTCHINSON then read an account of Volvulus of the Entire Small Intestine, Cæcum, and Ascending Colon. He said the anatomical condition which led to complete volvulus was due to a defect in development. The arrest of development being congenital complete volvulus was most common in children and much more frequent in males than in females. The whole of the intestine supplied by the superior mesenteric artery, from the duodenum to the transverse colon, underwent torsion to the amount sometimes of 360°. In nine out of the ten cases reviewed and abstracted in the paper this rotation brought the cæcum and ascending colon behind the mesentery, which latter acted as an obstructing band. In one case the rotation was in the opposite direction. The cæcum, greatly distended, might be found close to the spleen or in the left iliac fossa. The condition was very difficult to recognise even after the

abdomen was opened and there seemed to be only two successful cases of operation on it recorded. The first was Mr. Hutchinson's, operated on in 1901; and the second was operated on by Brentano in 1904. It was essential to draw the intestines outside the abdomen in order to recognise and to reduce this form of volvulus and it was advisable to evacuate the cæcum by tapping.—Mr. A. E. BARKER mentioned a case of volvulus of the whole of the small intestine, but not of the cæcum. The case was that of a woman on whom he had performed a gastro-enterostomy some two years previously for hæmatemesis. She married and became pregnant and was suddenly taken ill with pain in the abdomen and vomiting. The abdomen was opened and the volvulus recognised; this was reduced without taking the intestine out of the abdomen. The ease with which the intestine could be rotated within the abdomen was surprising. He considered it unnecessary in most cases to remove the intestine from the abdomen in order to reduce the volvulus.—Dr. ARTHUR KEITH said that the assumption of the upright position in man necessitated the fixation of the intestine in a manner different from that which was seen in the lower animals. In all the anthropoid apes he had found that the intestines were fixed in the same way as in man. The type of intestine and fixation which was found in Mr. Hutchinson's case corresponded to the form which was found in the lower animals. He had found a volvulus similar to that described by Mr. Hutchinson in a child who was born dead and that was due to a defective development—the attachment of the intestines.—Mr. GERALD S. HUGHES gave an account of a similar case in which a woman who all her life had been subject to attacks of abdominal pain suddenly developed signs of acute obstruction. She only came under observation half an hour before death and at the necropsy the whole of the small intestine was found twisted on itself; the cæcum was, however, in the normal situation.—Mr. HUTCHINSON, in reply, said that neither the case recorded by Mr. Barker nor that recorded by Mr. Hughes corresponded to those which he had described. The cases which he described formed a distinct group dependent on a congenital deformity. He could not agree with Mr. Barker that it was inadvisable in these cases to remove the intestine from the abdomen. He felt sure that the failure to cure the patients in some cases was due to the fact that the intestine had not been removed and the condition not relieved owing to it not being recognised.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 22nd, Dr. A. H. Bampton being in the chair.—Dr. J. B. Hellier read a paper on Post-operative Pneumonia and Bronchitis, in which he said that, though estimates of the frequency of such complications varied greatly, their occurrence was well recognised, some continental authorities finding 4 or 5 per cent. of pneumonia in abdominal cases after operation. The factors in causation were multiple. Dr. Hellier discussed the parts played respectively by the condition of the patient, chilling of the patient in the wards, corridors, and theatre, infection by the inhaler, septic state of the mouth and teeth, aspiration into the lungs, specific action of ether on the lungs, purity of the anæsthetic, faults in administration, and so on. He then considered in detail the various precautions which such a review of causation suggested, such as preparation in the ward, precautions during operation, methods of administration, and after-treatment.—A suggestive discussion followed.—Dr. A. Bronner read a paper on the Surgical Treatment of Diseases of the Nasal Accessory Cavities. He drew attention to the fact that these diseased cavities were a very common cause of anæmia, gastritis, meningitis, atrophy of the optic nerve, and disease of the cavernous sinus. The maxillary antrum was affected most frequently and the disease could spread from there into the frontal and ethmoidal cells. He generally opened up the antrum through the alveolar process and inserted a large Williams tube. The cavity should be washed out daily, powders insufflated, and if there was any discharge after two or three months the antrum should be plugged with ribbon gauze, through the tube. This method often effected a cure in the most tedious cases. In very bad cases the radical operation should be performed through the canine fossa and a large opening made into the nares. In disease of the maxillary antrum there was often pain over the frontal sinus and the antrum should always be explored before the sinus was opened.

For disease of the frontal sinus Killian's operation was the best in severe cases. This and other methods were described. The anterior ethmoidal cells were very often diseased and were the cause of the frequent recurrence of nasal polypi; the best method was to remove them with Meyer's ring. Disease of the posterior ethmoidal cells and the sphenoidal sinus often gave rise to meningitis, atrophy of the optic nerve, paralysis of the ocular muscles, and disease of the cavernous sinus. These cases were very frequent and generally overlooked. The use of adrenalin had greatly simplified these operations.—The following among other cases and specimens were shown:—Professor A. S. F. Grünbaum: A Fibrotic Testis and the Brain showing Minute Hemorrhages from a Syphilitic Chimpanzee.—Dr. F. W. Earich: Meningeal Hemorrhage in a case of Anthrax.—Mr. James Ewing: A patient suffering from "Hairy" Black Tongue. There was great elongation of the filiform papillae in the centre of the dorsum and they looked like black hairs.—Mr. B. G. A. Moynihan: (1) Carcinoma of the Jejunum; and (2) a patient upon whom Transplantation of an Extroverted Bladder was performed.—Mr. J. T. Fox: Specimens from Acute Fatal Congestion of the Pancreas, Suprenals, and Duodenum.—Dr. A. L. Whitehead: Specimen of Multiple Cysts of the Retina causing Absolute Glaucoma.—Mr. R. L. Knagge: Specimen showing Ureters implanted into the Rectum from an infant one year old. Death took place from causes unconnected with the operation some time afterwards.—Dr. W. H. Maxwell Telling: A case of Chronic Lichen Planus of 11 years' duration with recent exacerbation.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—A meeting of this society was held on March 27th, Dr. Alfred Eddowes, a Vice-President, being in the chair.—Mr. Arthur Shillitoe showed a case of Untreated Syphilis in a man, aged 22 years, the primary infection being in September, 1906. The trunk, limbs, and scalp presented a very extensive scaly and crusted eruption which in parts was psoriasisform in character. The fauces were much ulcerated.—Dr. Eddowes showed: 1. A man, aged 37 years, with Scarlatinoid Exfoliative Erythema. The patient had had two previous attacks and at the present time there was marked desquamation of the soles of the feet. His general health was unaffected. 2. Two sisters: one, aged 29 years, with Tylosis Palmæ, of hereditary origin, the mother and eldest brother being also affected in a similar manner; the other, aged 27 years, with Palmar Warts. 3. A boy, aged 15 years, with Pelliosis Rheumatica.—Mr. Spencer Harbutt exhibited: 1. Two men, one, aged 45 years, with a Guttate Psoriasisform Eruption scattered nearly all over the body, face, and scalp of 14 days' duration, with a more or less greasy, fawn-coloured eruption over the sternal region; the other, aged 23 years, with a somewhat similar rash but with no sternal eruption. (A lively discussion took place with regard to the exact nomenclature of these two cases and to the relationships between seborrhoea corporis and psoriasis.) 2. A young woman, aged 24 years, with Bazin's Disease, affecting the usual region of the middle third of the legs, but in whom there were also infiltrated nodules upon the extensor aspect of the forearms. The condition began on the left arm a year ago.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 20th, Mr. E. Powell, the President, being in the chair.—Mr. J. Mackie showed a boy, aged 15 years, who for eight years had suffered from Chronic Suppurative Otitis Media. There had been occasional attacks of pain for the last two years accompanied by vomiting and giddiness, usually followed and relieved by profuse discharge of pus. The temperature ranged from 97° to 105° F. and thrombosis of the lateral sinus was diagnosed. On Sept. 27th, 1906, the mastoid antrum was opened and found to be continuous with an extradural abscess. The sinus was opened, the clot removed, and the abscess drained. Four days after the operation the patient developed left basal pneumonia and pericarditis with daily rigors. Nine days after the operation the temperature fell from 106·2° to 95° in three hours. Four days later a profuse expectoration of foul purulent material occurred, probably from a pulmonary abscess. Nine days later (Oct. 19th) a swelling developed in the neck along the course of the internal jugular vein. The neck was freely incised and the abscess was opened after tying the internal jugular vein at its junction with the subclavian. The boy

made an uninterrupted recovery and is now in excellent health.—Mr. R. C. Obicken read a paper on Renal Calculus, in which he analysed critically, from the point of view of diagnosis, all the symptoms in ten recent cases. The three cardinal symptoms of hæmaturia, local tenderness, and renal pain were variable within such wide limits that corroborative evidence, such as was sometimes obtainable by the x rays, was often extremely valuable. Pain might radiate as far as the breast, the scapula, or the iliac crest; while, on the other hand, pain and tenderness might be completely absent. In one case renal calculus was complicated by suppurative appendicitis and in another by pain over the gall-bladder, jaundice, and wasting. In a third the tumour was formed by a large pyonephrosis, below which a large stone was found. In one typical case no stone could be found by nephrotomy, and in another the pain was so slight that a large uric acid stone would probably not have been detected but for the help of x rays. Then, again, all the pain might be referred to the healthy side and much confusion might be caused when pain was set up by a long adherent, chronically inflamed appendix.—Dr. F. H. Jacob read a paper on the Use of the X Rays in the Diagnosis of Renal Calculus, in which he pointed out that with the improved coils now in use a better picture of the kidney and its relations could be obtained in difficult circumstances than formerly. The necessary time had also been greatly reduced and as the kidney moved on an average one and a half inches at each respiration, this had its importance. Scoliatic masses were much more obvious in an x-ray photograph than a calculus would be, and this fallacy had to be guarded against by complete evacuation of the bowels. Calcified tuberculous glands were another source of error.—Dr. Jacob also read a paper on two cases of Leucocythæmia treated by X Rays. Both patients showed marked improvement.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 15th, Dr. J. Lindsay Steven, the President, being in the chair.—Dr. A. A. Young showed a case in which ulcerative perforation of the stomach and two cases in which ulcerative perforation of the duodenum had been successfully operated on. The success of these cases was largely due to early treatment, the intervals between the first symptom and the operation being from four to seven hours. Dr. Young had operated on 11 such cases with six recoveries and five deaths. The diagnosis was generally made from sudden and violent pain, with rigidity and tenderness of the abdomen. The previous history was of little service, for there were many cases of perforation in which ulceration had not been suspected. The peritoneum should be gently sponged after the ulcer had been sewn up with as little handling as possible. The area of perforation should be drained and Fowler's position adopted as it lessened the danger to the lungs.—Dr. A. N. McLennan read a paper on Professor Bier's Treatment for Infective Lesions and showed some of the Bier-Klapp apparatus. It was suggested that the word "staunung" used by Professor Bier to denote the hyperæmia produced by the elastic band might be incorporated in the English vocabulary. The "staunungshyperæmie" of Bier was produced by applying a light Martin's indiarubber bandage as remote from the inflammatory region as convenient. The degree of tightness was important. The correct application ought not to produce pain but to relieve it. It intensified the signs of inflammation, such as the redness and the swelling. The bandage was retained in acute cases for 22 hours. An interval of from two to four hours was employed in reducing the œdema the result of the bandage. Where pus existed it must be given vent to, but small incisions were sufficient. During the treatment all dressings must be very loosely applied. The dangers attributed to the treatment, such, for instance, as increase of pain, extension or dissemination of the infection, erysipelas, and hemorrhage, were due to faulty technique, while the illness observable during the interval of the treatment was due to the absorption of endotoxins. The method was applicable to many septic conditions and was especially serviceable as a means of preventing wounds becoming septic. The treatment of localised inflammatory conditions by means of suction apparatus was most successful. The apparatus was allowed to act for five minutes, then there was a pause of three minutes; the alternation of suction and interval was repeated for about an hour daily. Tuberculous joints were treated by Professor Bier in a large apparatus producing a partial vacuum.

Reviews and Notices of Books.

Operative Otolology, Surgical Pathology and Treatment of Diseases of the Ear. By CLARENCE JOHN BLAKE, M.D., Professor of Otolology in Harvard University; and HENRY OTTRIDGE REIK, M.D., Associate in Ophthalmology and Otolology, Johns Hopkins University. With 13 plates. London: Sidney Appleton. 1906. Pp. 359. Price 15s. net.

In the first chapter 37 pages are devoted to the surgical anatomy of the temporal bone and its surroundings, while the second chapter deals with antiseptic technique. The former is a clear and lucid description of the more important surgical anatomy. The form of sterilization of the instruments most recommended by the authors is that by means of formaldehyde gas; sterilisation by this method can be accomplished in a very short space of time and has the great advantage of not blunting sharp or dulling bright instruments. The remainder of the chapter calls for no particular remark but it is one which will be very useful for refreshing the memory of those who have forgotten the antiseptic technique. The third chapter—diseases of the auricle and external auditory canal—deals with malformations and ordinary diseases of these parts. In treating of the removal of exostoses of the canal the operation through the canal is recommended for those near the external surface and reflection of the auricle for pedunculated and deep-seated growths. On p. 86 an extremely neat little chisel is depicted, having a small metal handle fastened on to it obliquely a short distance from the proximal end of the shaft. In the fourth chapter, which deals with diseases of the tympanic membrane and tympanum, we notice that the inflammations of the tympanic membrane are treated separately from inflammation of the middle ear. We think that this is unwise, as, with the exception of cases in which inflammation of the tympanic membrane results from direct irritation from without, it can only occur in conjunction with inflammation of the middle ear. An extremely useful syringe of the Pravaz type is depicted, with a long straight metal nozzle, which is introduced through a small perforation in order thoroughly to wash out the tympanum itself; this must of necessity be of greater use in perforations of Shrapnell's membrane. When speaking of chronic suppuration, in view of the tendency that exists in this country to an early resort to operative measures, the following remarks of the authors are worthy of note: "Having patiently, persistently, and perseveringly tried all simple means of overcoming the otorrhoea without success, the existence of a deeper focus of suppuration in a bone necrosis is presumable." Further on in the same page we find: "Ossiculectomy is considered appropriate where ossicular ulceration is present, and the mastoid operation where extension of suppuration to the cellular structures of the mastoid is presumed." This is, we think, sound surgery.

The next chapter deals with the various complications following suppurative otitis media. It is an excellent chapter but contains no strikingly original remarks. The authors state that the most trustworthy statistics at the present time indicate that one case of intra-labyrinthine suppuration occurs in every 100 cases of purulent middle-ear disease. This is a useful statement and is probably based on a sufficient number of cases to prove its correctness. In exploratory tympanotomy a very clever idea is suggested for returning the flap to its normal situation, which is done by means of damping a small crescentic portion of highly glazed paper and causing it to adhere first to the flap and afterwards to the edge of the tympanic membrane. A similar procedure is advocated for the closing of old perforations and appears to us to be one which, if carefully

performed, may be extremely useful in selected cases. A good many of the terms used are distinctly Transatlantic. Thus "tympano-antral extirpation" is practically what is known as the Stäcke operation but is not very clearly described. The term "mastoidectomy" is employed for those operations in which the mastoid process is attacked, and "mastoido-tympanal extirpation" is, as we read it, the term employed for what is known by us as the complete mastoid or radical mastoid operation. The last chapter consists of an abstract from a paper written by Bourguet in 1905 and published in the *Annales des Maladies des Oreilles, du Nez et du Pharynx*.

This book is one which we can strongly recommend as an excellent guide to operative aural surgery, though as we have said the terms employed are not always those which we employ in England. This, however, does not seriously impair the usefulness of the volume.

A History of Chemistry. By F. P. ARMITAGE, M.A., F.C.S. London: Longmans, Green, and Co. 1906. Pp. 268. Price 6s.

THE history of chemistry tells the story, as the author owns, of some thousands of years of almost fruitless labour, followed by two centuries of richest accomplishment. It is now debatable which of these centuries has borne the greater fruit. Ten years ago, perhaps, there could have been no question but it is the last decade which has brought us face to face with the suggestion engendered by the study of radiant matter and radio-activity that we have actually touched the borderland where matter and force seem to merge into each other. The eighteenth century saw the atomic conception become a theory which was so strongly supported by well-ascertained facts as to bring it almost to the level of certainty but hardly had the century passed away when these views became modified by the wonderful glimpse which was gained into the nature of radio-active phenomena; that, after all, the atom was not a stable entity; that there were such things as a disintegrating atom and a non-disintegrating atom existing side by side in the same sphere; that, after all, the atom is a mass of electrons some of which may break away to form new groups, the electrons, in short, being units of electricity. Nowadays, therefore, no history of chemistry can be complete which does not regard this development and we are led to ask why Mr. Armitage chose to conclude his story abruptly with the account of the periodic functions of the elements. To do him credit, however, the narrative up to this point is well told and he must have taken great pains to collect the materials and to present the facts in their proper historic sequence. He commences with almost prehistoric times, when, chemical knowledge did not go further than the manufacture of such articles as glass and soap, and the isolation from their native ores of easily reducible metals such as gold, silver, lead, and copper. Classification was not attempted until Aristotle assumed the existence of four elements but crude as this was it stimulated inquiry and the notion of transmutation gained credence. Towards the middle of the seventeenth century the view of the existence of four elements had to be abandoned in the light of accumulating facts which were the outcome of a more or less systematic research. We now know how rapidly this knowledge advanced from the time that Paracelsus regarded chemistry as the handmaid of medicine, as the author puts it, down to the time of Boyle's work (1661), and then on to the labours of Stahl, Hoffmann, Black, Priestley, Cavendish, Scheele, Lavoisier, Dalton, Davy, Gay Lussac, Avogadro, Berzelius, Liebig, Gerhardt, Kekulé, and so on to near the end of the last century. Mr. Armitage recounts the history of all these men, their labours and their careers, in terms which cannot fail to interest the student who is desirous of knowing how the science of

chemistry was built up, and he is justified, we think, in venturing to hope that it will be the readers' fault if after applying common intelligence to the reading of this volume they fail to "see problems in a clearer light and attack them with minds broadened by contact with those of their famous predecessors." We trust in a future edition that the author will bring his literary power and scientific knowledge to bear upon recent advances, which means telling his readers how men came to think of electrons and of radiant matter and to revert to the old idea of transmutation.

Infant Education. By ERIC PRITCHARD, M.A., M.D. Oxon., M.R.C.P. Lond., Consulting Physician to the Barnet Home Hospital for Children, &c. With a Preface by ALEX. WYNTER BLYTH, M.R.C.S. Eng., Medical Officer of Health of the Borough of St. Marylebone. London: Henry Kimpton; Glasgow: A. Stenhouse. 1907. Pp. xiii.-190. Price 2s. net.

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The Schoolmaster's Year Book and Directory, 1907. London: Swan Sonnenschein and Co. 1907. Pp. 574. Price 6s. net.—This annual publication is to the teaching profession much what the Medical Directory is to the medical profession. A consideration of this work and of the one previously noticed rather leads the reader to the conclusion that there is in this country too much teaching and too little learning, for the practical results seem by no means commensurate with the money and the brains which are spent upon teaching, or rather, we should say, upon education, two terms which are by no means synonymous.

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close examination of the volume confirms this expectation. The plates are excellent, wisely chosen, and clearly printed; they are not all, perhaps, of equal merit but not one is poor. The elucidatory text is reasonable in extent and fairly represents current views. The nomenclature of skin diseases has always proved a difficult matter and in a few instances it might have been well to assimilate the nomenclature to that common in this country. It is a pity, for instance, to speak of a primary syphilitic sore simply as "ulcus durum." Dr. Max Joseph is responsible for the text and the choice of specimens, while the credit of the illustrations is to be assigned to Surgeon-Major van Dantver.

JOURNALS AND MAGAZINES.

Journal of Anatomy and Physiology. Conducted by Sir WILLIAM TURNER, K.C.B., F.R.S., D. J. CUNNINGHAM, F.R.S., G. S. HUNTINGTON, M.D., A. MACALISTER, F.R.S., and J. G. MCKENDRICK, F.R.S. Vol. XLII. Series III. Vol. II., Part 2. With plates and illustrations in the text. London: Charles Griffin and Co. 1907. Subscription for four parts, 21s.—This part contains: 1. The Mechanical Supports of the Pelvic Viscera, by Professor A. Melville Paterson, M.D. Edin. The account of the fasciæ, ligaments, and sheaths of muscles here given is not only derived from careful dissection of the human subject but includes dissection of several mammals, as the kangaroo, horse, porcupine, Persian goat, and duiker-bok, most of which are illustrated by drawings in the text. The dissections were undertaken to correct a serious misapprehension which pervades the description of the pelvic fasciæ in anatomical writings and partly also to give a rational explanation of the relations of the pelvic viscera to the pelvic floor. The author remarks that the surgeon is now dealing with this region in a way that is not compatible with the descriptions in anatomical text-books. "It is an example of practice outgrowing dogma." 2. Varying Positions of the Carpal Bones in the Different Movements at the Wrist, by Henry M. Johnston, M.B. R.U.I., with eight illustrations in the text. 3. Notes on Predynastic Egyptian Tibiæ, by Douglas E. Derry, M.B. Edin. The article is the result of the examination of a series of between 400 and 500 predynastic Egyptian tibiæ. 4. A Description of the Peritoneal Cavity founded on Clinical and Pathological Investigations, by G. J. Jenkins, M.D. Edin., and S. Maynard Smith, F.R.C.S. Eng., with four drawings in the text. 5. The Interpretation of the Primary and First Secondary Wave in Sphygmographic Tracings, by Thomas Lewis, D.Sc. Wales, M.B. Lond., with seven figures in the text. 6. Note on Accessory Coronary Arteries, by William St. Clair Symmers, M.B. Aberd. 7. Complete Bilateral Interruption of the Fissure of Rolando, by David Waterston, M.D. Edin., with three plates in the text. 8. Congenital Obliteration of a Portion of the Alimentary Canal, by David Waterston, M.D. Edin. 9. The Physiology of the Lateral Atlanto-axial Joints, by Edred M. Corner, F.R.C.S. Eng., B.Sc. Lond. 10. The Arrangement of the Synovial Membrane in the Palmar Digital Sheaths, by Charles R. Whittaker, L.R.C.P. Edin. The part contains the Proceedings of the Anatomical Society of Great Britain and Ireland for June, 1906. An index, which we have not received, is stated to be published with this part, including Vols. XXXI. to XXXIX.

Transactions of the American Ophthalmological Society; Forty-first Annual Meeting. Vol. X., Part 3. Hartford: Published by the Society. 1905. Pp. 242.—The forty-first annual meeting of this society was held in Boston, Massachusetts, and was attended by 80 of the 170 members constituting the society. 29 communications were presented, amongst which were the following. Two cases of Melanosarcoma of the Choroid, by Dr. Charles J. Kipp. Though almost confined to the globe, in one of these cases localised oedema of the eyeball occurred only at intervals of weeks.

There was much pain. The eye was removed and the tumour on examination proved to consist chiefly of pigmented polygonal cells and unpigmented spindle cells which had invaded all layers of the choroid and had perforated the sclera. In the other case the growth was only six millimetres in diameter and two millimetres in height and yet had invaded the sclera. Dr. G. F. Schweinitz and Dr. E. A. Shumway report two cases of Melanoma of the Choroid, which are interesting as showing that the starting point of the melanotic growths was observed to be in the layer of large vessels. Dr. C. W. Cutler communicated the details of a case of Metastatic Pigmented Carcinoma of the Ocular Body. Dr. Edgar S. Thomson exhibited a Sachs's Lamp which had been devised by Mr. Moyrowitz of New York and by means of which the recognition of exudates and of foreign bodies in the eye is facilitated. Dr. Sattler described various improvements in the methods of application of the electro-magnet. In the discussion that followed the reading of this paper considerable differences of opinion were expressed as to the relative advantages of the large and small magnet in the extrication of fragments of iron and in regard to the advisability of making an incision through the sclerotic to introduce the small magnet. The direct application of the large magnet appears sometimes to inflict severe injury to the eye, one speaker, Dr. J. E. Weeks, recording a case of the entire iris coming away with the foreign body on the application of the large magnet. Dr. William Sweet gave the results of his investigations on the magnetic properties of steel alloyed with nickel, manganese, chromium, and tungsten. Manganese steel is the only alloy which materially reduces the magnetic induction of steel. Dr. John L. Weeks contributed a good article on the Various Methods employed for Localising Foreign Bodies in the Eye by Means of the Roentgen Rays. Dr. Lucien Howe read a paper in which, as the result of numerous inquiries addressed by him to the members of the society, he said that he was unable to obtain evidence of the numerous reflexes which by some practitioners have been held to be due to eye-strain. Dr. Hiram Woods gave an account of the conclusions at which he arrived from the study of Nine Cases of Recurrent Iritis. In a case which he saw with Dr. Knapp the substitution of a 10 per cent. solution of euphthalmine for atropine proved very serviceable. Dr. Hansell described a case of Cystic Myxo-sarcoma of the Orbit the excision of which was followed by death. Dr. Charles S. Bail discussed in his communication the Treatment of Inoperable Cases of Malignant Disease of the Orbit by the X Rays. Occasionally success appears to attend this method of treatment but the general results are disappointing. Vernal Conjunctivitis in the Negro was the subject of a paper by Dr. Dunbar Roy. The effects of high-frequency currents in certain ocular affections were treated by Dr. John O. Lester. Affections of the Cornea were considered by Dr. J. Morrison Ray, by Dr. J. Herbert Claiborne, and by Dr. F. O. Wadsworth. Dr. Claiborne also described a case of Homonymous, Left-sided Inferior Hemianopsia following a toxic dose of salicylate of sodium. Dr. Wilbur Marple described a case of Persistent Pupillary Membrane. Dr. Charles Williams exhibited a series of Reversible Test Types and Dr. John Green presented some notes on the Clinical Determination of the Acuteness of Vision. Dr. W. O. Posey contributed the details of a case of Cyanosis Retinæ occurring in a Cyanotic Patient. Lastly, a valuable paper was read from the pen of Dr. A. Duane upon the Symptoms presented by the Different Bacteriological Types of Acute Conjunctivitis. From Dr. Duane's observations it appears that no particular type of conjunctivitis is to be associated with a particular germ and that from the clinical aspect of a conjunctivitis no positive inference can be drawn as to the germ causing it.

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when, on removal of the plug of lint under an antiseptic rag, three ounces of turbid serum escaped. For the next three days there was scarcely any discharge, the deeper parts of the incision having cohered. On firm pressure, however, the product of seventy-two hours escaped, and amounted to four drachms of serum. Meanwhile the girl's general health, which had not been interfered with by the abscess, continued perfectly good, neither pulse, tongue, appetite, nor sleep having been disturbed.

In this case, though there is no deformity of the spine, there is great probability that caries of the vertebra is present. But even though such be the case, there is good reason to hope for a favourable issue. Regarding caries as merely the suppurative stage of chronic inflammation in a weak form of tissue, I have been not surprised, though greatly rejoiced, to find that it exhibits the tendency of inflammatory affections generally—viz., a disposition to spontaneous cure on the withdrawal of irritation. Hitherto, in surgical practice, caries has had to contend against the formidable irritation of decomposing matter, which, under circumstances of weakness, is often sufficient to cause ulceration, even in the soft parts; yet, in spite of this irritation, caries is often recoverable in the child where the vital powers of all the tissues are stronger. If, therefore, this serious complication can be avoided, there seems nothing in theory against the probability that caries may prove curable in the adult. And even should portions of necrosed bone be present, as is not unfrequently the case, our experience of the treatment of compound fracture with carbolic acid has taught us that dead bone, if undecomposed, not only fails to induce suppuration in its vicinity, but is liable to absorption by the granulations around it.*

Such were the hopes which I ventured to express several months ago to my winter class. Since that time I have opened numerous abscesses connected with caries of the vertebra, the hip, knee, ankle, and elbow, and in all cases I have found the discharge become in a few days trifling in amount, and in many it has ceased to be puriform after the first twenty-four hours. Finally, three days ago—viz., on the 4th inst., (July, 1867,) I had the inexpressible happiness of finding the sinus soundly closed in a middle-aged man, in whom I opened in February last a psoas abscess, proved to be connected with diseased bone by the discharge, on one occasion, of an osseous spiculum. For months past he had persevered with the antiseptic dressing, although the discharge did not amount to more than a drop or two of serum in the twenty-four hours, well knowing by bitter experience that so long as a sinus existed the occurrence of decomposition might produce the most disastrous consequences; and at length our patience has been crowned with success.

Hence I no longer feel any hesitation in recommending the early opening of such abscesses, because, while they remained unopened, the disease of the bone is necessarily progressive, whereas when opened antiseptically, there is good ground to hope for their steady, though tedious, recovery.

The putty of the strength above recommended, though it generally fails to excoriate the skin, sometimes produces this effect when long continued. In such case it may be reduced in strength so that the oil contains only one part to five or six without disadvantage when the discharge is very small in amount.

The application prevents the occurrence of cicatrisation in the little sore caused by the incision, and perpetuates a trifling discharge from it. Hence it is impossible to judge whether or not the sinus has closed, except by examining it from time to time with a probe, which should be dipped in the antiseptic oil, and passed in between folds of the antiseptic rag. This may seem a refinement, but if we could see with the naked eye a few only of the septic organisms that people every cubic inch of the atmosphere of a hospital ward, we should rather wonder that the antiseptic treatment is ever successful than omit any precautions in conducting it.

The putty used in treating abscesses has proved very valuable in simplifying the treatment of compound fracture, and enlarging the range of its applicability, and also in dealing with incised wounds on the antiseptic principle. But I must defer a notice of these matters to a future occasion.

Glasgow, July, 1867.

* See THE LANCET of March 23rd, p. 359

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

Election of President.

AN extraordinary Comitia was held on March 25th, Sir RICHARD DOUGLAS POWELL, Bart., K.O.V.O., the President, being in the chair.

The PRESIDENT announced that the Sir Gilbert Blaine medals had been awarded to Staff-Surgeon J. W. W. Stanton, R.N., and Surgeon Bernard Ley, R.N.

The PRESIDENT then delivered the usual annual address, in the course of which he offered congratulations to those Fellows, Members, and Licentiates of the College upon whom Royal honours had been bestowed during the past year, and he also referred to the awards, medals, prizes, and scholarships conferred or awarded by the College. He next mentioned the lectures which had been delivered before the College. The gifts presented to the College were likewise gratefully acknowledged. The President laid stress on the services rendered by the Harveian Librarian (Dr. J. F. Payne) in improving and maintaining the library of the College in every way. He then read short obituary notices of those Fellows who had died during the year: Henry Augustus Goodrich, Sir Willoughby Francis Wade, John Henry Bryant, John Henry Bridges, John Cameron, Thomas Harris, Gustave Lodore Schorstein, Edmund Symes-Thompson, and Arthur Ernest Sansom. The President then referred to the congresses held during the year to which the College had sent delegates, and to the communications which had taken place with various departments of State. The financial position of the College, separate and conjoint, was then reviewed. In conclusion, he expressed his thanks for the kindly courteous consideration shown to him by the College during his year of office, and he thanked all the officers, notably the Registrar (Dr. E. Liveing), for the assistance which they had given to him.

Dr. F. W. PAVY proposed a vote of thanks to Sir Richard Douglas Powell for the address which he had just delivered and for the services which he had rendered to the College during his year of office and added a request that the address might be printed.

Sir RICHARD DOUGLAS POWELL returned thanks to the College and acceded to the request to have the address printed. He then vacated the chair.

The REGISTRAR read the by-laws relating to the election of President. The ballot then took place and Sir Richard Douglas Powell was re-elected by a very large majority as President for the ensuing year.

The charge was delivered by the SENIOR CENSOR (Dr. F. T. Roberts) who delivered to Sir Richard Douglas Powell the insignia of office and the PRESIDENT pledged his faith to the College.

Sir RICHARD DOUGLAS POWELL then thanked the College for the honour accorded to him in so cordially re-electing him as President.

The following communications were received: (1) From the secretary of the Royal College of Surgeons of England reporting proceedings of its Council on March 14th; and (2) from Mr. A. Forbes Sleeking requesting that he might have access to the records of the College in compiling a biography of his father, the late Sir E. H. Sleeking. The request was granted.

A report from the committee of management dated March 4th was received and adopted. The committee recommended that the following institutions should be added to the list of those recognised by the Examining Board in England for instruction in chemistry, physics, and biology: Ley's School, Cambridge, and Trent College, Long Eaton.

The quarterly report of the examiners for the Licence on the results of the January examinations was received and adopted.

The PRESIDENT then dissolved the Comitia.

WEST CORNWALL MINERS' AND WOMEN'S HOSPITAL.—On March 23rd Lady Olifden formally opened in the presence of a large gathering a new operating theatre which has been added to the Miners' Hospital at Redruth. The theatre, which is fitted up with all modern improvements, has been erected at a cost of £1460, the whole of which sum has been subscribed.

Looking Back.

FROM

THE LANCET, SATURDAY, July 27th, 1867.

ON A

NEW METHOD OF TREATING COMPOUND FRACTURE, ABSCESS, ETC.

BY JOSEPH LISTER, Esq., F.R.S.,

PROFESSOR OF SURGERY IN THE UNIVERSITY OF GLASGOW.

PRELIMINARY NOTICE ON ABSCESS.

In anticipation of the more detailed account which I hope will soon appear in THE LANCET, I will now give a description of a new method of treating abscess, which has afforded results so satisfactory that it does not seem right to withhold it longer from the profession generally.

It is based, like the treatment of compound fracture,* on the antiseptic principle, and the material employed is essentially the same—namely, carbolic acid, but differently applied in accordance with the difference of the circumstances. In compound fracture there is an irregular wound, which has probably been exposed to the air for hours before it is seen by the surgeon, and may therefore contain in its interstices the atmospheric germs which are the cause of decomposition, and these must be destroyed by the energetic application of the antiseptic agent. In an unopened abscess, on the other hand, as a general rule, no septic organisms are present, so that it is not necessary to introduce the carbolic acid into the interior. Here the essential object is to guard against the introduction of living particles from without, at the same time that a free exit is afforded for the constant discharge of the contents. The mode in which this is accomplished is as follows:—

A solution of one part of crystallised carbolic acid in four parts of boiled linseed oil having been prepared, a piece of rag from four to six inches square is dipped in the oily mixture, and laid upon the skin where the incision is to be made. The lower edge of the rag being then raised, while the upper edge is kept from slipping by an assistant, a common scalpel or bistoury dipped in the oil is plunged into the cavity of the abscess, and an opening about three-quarters of an inch in length is made, and the instant the knife is withdrawn the rag is dropped upon the skin as an antiseptic curtain, beneath which the pus flows out into a vessel placed to receive it. The cavity of the abscess is firmly pressed, so as to force out all existing pus as nearly as may be (the old fear of doing mischief by rough treatment of the pyogenic membrane being quite ill-founded); and if there be much oozing of blood, or if there be a considerable thickness of parts between the abscess and the surface, a piece of lint dipped in the antiseptic oil is introduced into the incision to check bleeding and prevent primary adhesion, which is otherwise very apt to occur. The introduction of the lint is effected as rapidly as may be, and under the protection of the antiseptic rag. Thus the evacuation of the original contents is accomplished with perfect security against the introduction of living germs. This, however, would be of no avail unless an antiseptic dressing could be applied that would effectually prevent the decomposition of the stream of pus constantly flowing out beneath it. After numerous disappointments, I have succeeded with the following, which may be relied upon as absolutely trustworthy. About six teaspoonfuls of the above-mentioned solution of carbolic acid in linseed oil are mixed up with common whitening (carbonate of lime) to the consistence of a firm paste, which is in fact glazier's putty with the addition of a little carbolic acid. This is spread upon a piece of sheet block tin about six inches square; or common tinfoil will answer equally well if strengthened with adhesive plaster to prevent it from tearing, and in some situations it is preferable, from its adapting itself more readily to the shape of the part affected. The putty forms a layer about a quarter of an inch thick; it may be spread with a table-knife, or pressed out with the

hand, a towel being temporarily interposed to prevent the putty from sticking to the hand or soiling the coat-sleeve. The tin thus spread with putty is placed upon the skin so that the middle of it corresponds to the position of the incision, the antiseptic rag used in opening the abscess being removed the instant before. The tin is then fixed securely by adhesive plaster, the lowest edge being left free for the escape of the discharge into a folded towel placed over it and secured by a bandage. This dressing has the following advantages:—The tin prevents the evaporation of the carbolic acid, which escapes readily through any organic tissue such as oiled silk or gutta-percha. The putty contains the carbolic acid just sufficiently diluted to prevent its excoriating the skin, while its substance serves as a reservoir of the acid during the intervals between the dressings. Its oily nature and tenacity prevent it from being washed away by the discharge, which all oozes out beneath it as fast as it escapes from the incision; while the extent of the surface of the putty renders it securely antiseptic. Lastly, the putty is a cleanly application, and gives the surgeon very little trouble; a supply being daily made by some convalescent in an hospital, or in private practice by the nurse or a friend of the patient; or a larger quantity may be made at once, and kept in a tin canister. The dressing is changed, as a general rule, once in twenty-four hours; but if the abscess be a very large one, it is prudent to see the patient twelve hours after it has been opened, when, if the towel should be much stained with the discharge, the dressing should be changed, to avoid subjecting its antiseptic virtues to too severe a test. But after the first twenty-four hours, a single daily dressing is sufficient. The changing of the dressing must be methodically done, as follows:—A second similar piece of tin having been spread with the putty, a piece of rag is dipped in the oily solution, and placed on the incision the moment the first tin is removed. This guards against the possibility of mischief occurring during the cleansing of the skin with a dry cloth and pressing out any discharge which may exist in the cavity. If a plug of lint was introduced when the abscess was opened, it is removed under cover of the antiseptic rag, which is taken off at the moment when the new tin is to be applied. The same process is continued daily till the sinus closes.

The results of this treatment are such as correct pathological knowledge might have enabled us to predict. The pyogenic membrane has no innate disposition to form pus, but does so only because it is subjected to some preternatural stimulus. In an ordinary abscess, whether acute or chronic, the original cause that led to suppuration is no longer in operation, and the stimulus that determines the continued pus formation is derived from the presence of the pus pent up in the interior. When an abscess is opened in the ordinary way this cause of stimulation is removed, but in its place is substituted the potent stimulus of decomposition. If, however, the abscess be opened antiseptically, the pyogenic membrane, freed from the operation of the previous stimulus without the substitution of a new one, ought, according to theory, to cease to suppurate, while the patient should be relieved from any local or general disturbance caused by the abscess, without the risk of irritative fever or hectic.

Such, accordingly, is the fact. Abscesses of large size have, after the original contents have been evacuated, furnished no further pus whatever, the discharge being merely serum, which in a few days has amounted only to a few drops in the twenty-four hours. Whether the opening be dependent or not is a matter of perfect indifference, the small amount of unirritating fluid being all evacuated spontaneously by the rapidly contracting pyogenic membrane. At the same time, we reckon with perfect certainty on the absence of all constitutional disturbance.

As an illustration, I may mention the last case which has come under my care. It is that of a young woman, twenty-five years old, with psoas abscess, which had of late been rapidly on the increase, and caused a large swelling below Poupert's ligament, communicating with a fluctuating mass, dull on percussion, reaching to a considerable distance up the abdomen, the femoral vessels being raised over the communication between them. Six days ago I opened, in the manner above described, the swelling in the thigh at the anterior part of the limb where it was nearest the surface, giving exit to twenty-seven ounces of pus, thin, but containing numerous large curdy masses. I introduced a piece of lint, dipped in the carbolic acid and oil, into the incision; and this prevented any discharge from escaping during the next twenty-four hours,

*See THE LANCET of March 16th, 23rd, and 30th, and April 27th of present year (i.e., 1867).

to the advantage of patients with simple fracture and are saved very largely from irritative fever and prolonged suppuration, to say nothing of pyæmia. The effect of the careful application of the acid on the opening of large abscesses is equally striking. The secretion of pus is almost immediately stopped. Thus in one case of psoas abscess, in which twenty-seven ounces of pus were let out, the future successive discharges were three ounces of turbid serum, and four drachms of serum, respectively. Mr. LISTEN's cases of abscesses connected with diseased bone go far to justify the hope that the use of carbolic acid will so favour the tendency of the bone spontaneously to heal, as to bring caries and large abscesses connected with it within the range of curable diseases. We need say no more to justify our estimate of the importance of Mr. LISTEN's communications on the surgical use of carbolic acid." The leading article, from which with pardonable pride we have made these extracts, formed the first introduction of Lord LISTEN's splendid work to the mass of his professional brethren. His views were not accepted immediately and every change in procedure which he adopted as his own experience grew larger, was welcomed by his opponents as a proof of the instability of the new doctrines. But the results achieved by himself and others working upon his lines were so marvellous that the opposition speedily became fitful and ineffective. Within less than ten years from the date when his first observations were made public Lord LISTEN had the satisfaction of seeing the whole practice of surgery in the world revolutionised in accordance with his teachings, and the happiness of knowing that he had actually contributed to the abolition of untold physical misery and the saving of countless human lives.

Medicine and the Public.

UNDER the title of "The Community of Interest of the Medical School and the Public" we have received a copy of a highly instructive address delivered at Yale University by Dr. W. W. KEEN who is professor of surgery in the Jefferson Medical College at Philadelphia and who has received the distinction of an honorary Fellowship from the Royal College of Surgeons of England and from the Royal College of Surgeons of Edinburgh. Dr. KEEN takes as the foundation of his argument what he regards as admitted fact—namely, that the fees paid by medical students can never be sufficient to maintain a medical school in the highest state of efficiency; and, on this basis, he declares that, while it is the business and duty of such a school to give to the public the best-educated practitioners in every department of medicine, and so to increase our knowledge of the science and art of medicine as to render the profession constantly more and more efficient, it is equally the duty of the public to provide all the needed facilities for the making of the best medical men and for the prosecution of original research in order that the medical school may render its best service to the community. Dr. KEEN told his audience, as we have told our readers on many occasions, that the joint work of a college and a teaching hospital is of enormously greater value to the public than the mere care of the sick

in a hospital with which no college is associated, and it is greatly to be regretted that this most simple and elementary of all truths has even now by no means sunk into the minds of the great majority of the non-medical persons by whom hospitals are financially supported. I see every year in the hospital, declares Dr. KEEN, scores or even hundreds of patients who go out happy and in comfort, restored to health, and to wage-earning power, and it gives me great pleasure to think about such cases. But when I look at the hundreds of young men whom I have the pleasure of teaching, when I remember that I can instill into them high ideals, when I can bring into their lives the research habit and the desire to learn, and remember that they will go all over the world and cure hundreds, nay, thousands, more than I can, which work is the greater? the curing of my scores of patients or the teaching of hundreds of young men to go out to cure their scores of thousands, and to bring the blessings of many upon their heads for the work that they have learned to do through me? Hence, as medical education becomes every year more and more expensive, and inasmuch as medical students are largely drawn from classes who are not overburdened with wealth, Dr. KEEN regards the provision of educational facilities as being the greatest service which hospitals can render to the community and as the best and most charitable purpose to which the funds of contributors can be applied. This is common sense and it is much to be regretted that so many persons in positions of influence should still be deaf to its appeal. You may, they say in effect, spend your money in curing A but you must not spend it in teaching B and C to cure all the other letters of the alphabet, letters representing sufferers who will never be able to obtain access to your wards and who, if we could have our way, would be left to the tender mercies of ignorance.

The causes which have produced the frequently antagonistic, and almost always unsympathetic and unpractical, character of the attitude of many benevolent persons towards medical education would afford a curious subject for research; and would probably, in the present day, be largely resolvable into Dr. JOHNSON's candid explanation of an error of his own as a consequence of "pure ignorance." The study of medicine, partly from its engrossing character and partly on account of the limited means of many of those by whom it is pursued, has somewhat tended towards divergence from that study of letters which has long given, and indeed still gives, the tone to public opinion. To those who regard the time spared from professional labours and spent in the pursuit of literature as wasted we commend the stately passage in which GIBBON describes the nobility of the SPENCERS as having been "enriched by the trophies of MARLBOROUGH," but "exhorts them to consider the 'Fairly Queen' as the most precious jewel in their coronet." It may be assumed that only a comparatively small number of the hundreds of lawyers, of clergymen, and of country gentlemen, who pass through the older English Universities, bring away from them any large amount of classical learning; but there will be few who do not bring away sufficient to give them a distaste, hardly distinguishable from contempt, for the jargon of counterfeit Greek which we lately likened to the

THE LANCET.

LONDON: SATURDAY, APRIL 6, 1907.

The Eightieth Anniversary of Lord Lister's Birthday.

THE eightieth anniversary of Lord LISTER's birthday occurs this month and, as we have already announced in our columns, it has been suggested that the event would suitably be commemorated by the republication of his scientific papers prefaced by a short biography. The biography should contain an account of the part played by the genius of LISTER in the development of our knowledge of infectious processes and the history of his efforts to obviate wound infection. It is not too much to say—indeed, it is recognised by the scientific world—that his work in these directions has revolutionised the whole of surgical practice, and has led to the saving of more lives and the prevention of more misery than it is possible to calculate. Lord LISTER's original papers, to which it is now proposed to give suitable publication, are scattered throughout the medical and scientific publications of this country. They are for the most part accurate observations of his personal labours, a fact which gives them a particular value from the biographical point of view. We are proud to remember that THE LANCET was one of the earliest mediums through which Lord LISTER approached the scientific world, while we were certainly among the first to recognise the enormous bearings upon medicine in its broadest sense that Lord LISTER's work might have. A meeting of the committee appointed to make a fitting recognition of the anniversary is being held as we go to press. The form and method to be adopted in the publication of Lord LISTER's papers is to be considered and an editorial body appointed to undertake the work.

We publish this week under the title of "Looking Back" a preliminary note upon what Lord LISTER 40 years ago termed "A New Method of Treating Compound Fracture, Abscess, etc." It has hitherto been our custom, in compiling notes upon bygone medicine from past numbers of THE LANCET, to make our quotations from numbers some 80 years old, the gap between our present-day knowledge and the science of the pre-Victorian era being a very obvious one. On this occasion we need look back but half that number of years to reveal to our readers not a gap but a yawning chasm. In 1867 we are back in a time when it was the rule for an open wound to heal up by a process of suppuration, when the unfortunate victims of a compound injury to bone or joint were submitted at once to amputation, for otherwise they ran such risks from septic fever that many more of them died than lived, and when in the surgical wards of a general hospital deaths from gangrene or pyæmia were regarded as things which had to be

expected—as inevitable drawbacks of hospital treatment. It was at this time that LISTER, then professor of surgery in the University of Glasgow, showed by a series of convincing papers, similar in bearing to the brief preliminary note which we reproduce on p. 952, of this issue of THE LANCET, that many of these terrible conditions could be avoided by a routine treatment, of which the application of carbolic acid to the exposed surfaces was the basis. A series of those papers were published in our columns during 1867 and 1868 and an editorial commentary upon them makes interesting reading at the present day. "Although," we wrote, "he (Professor LISTER) bases his surgical use of carbolic acid upon the researches of M. PASTEUR, the application of these researches to the case of compound fractures, opened abscesses, and other recent wounds, is all his own. The need for determining the value of carbolic acid and the best form and mode of using it is most urgent. It is most lamentable to think of the extent to which the best and most refined surgery of the time is being frustrated in our great hospitals and even in those but lately built. The mortality of compound fractures, of the graver amputations and operations, and of lithotomy in our larger hospitals, both provincial and metropolitan, is something frightful. And the occurrence of death with symptoms of blood poisoning is, unfortunately, not confined to cases of serious operation, but happens ever and anon in operations in themselves slight. This risk—the risk of blood-poisoning—is, indeed, now the one great opprobrium of surgery. There is no limit to the operative feats of surgeons, either to the refined skill with which they may be accomplished or to the toleration of them by the anæsthetised patient, but there is a miserable and serious risk in every case, especially in hospitals, of the occurrence of fatal after-consequences, against which—until now, at least—we have had little or no power of resistance." The operator of to-day would hardly consider that we had been accurate in saying of his father's or grandfather's operative feats that there was no limit to them, but he will recognise that the marvellous progress that has been made of late in this domain of medicine has been wholly due to the development of antiseptic surgery as introduced to the world by Lord LISTER, backed by the facilities afforded by anæsthetics.

Our appreciation of Lord LISTER's work from the beginning is further shown by the concluding words of the same article. It runs as follows: "Mr. LISTER's papers, which will be found in THE LANCET of the present year (March 16th, 23rd, and 30th, April 27th, and July 27th), go to show that, applied to bad compound fractures, carbolic acid, pure or diluted—Mr. LISTER prefers the pure,—prevents decomposition and suppuration; that though it acts as a caustic, it does so to only an unimportant degree, doing its principal execution on small septic organisms, and but very slightly affecting the vitality of the proper animal tissues; that it favours granulations, and by so doing often saves tissue—even bone, as in Case 5¹—to a most wonderful extent. As a consequence of these properties, patients with compound fracture are raised very much

¹ The reference is to a remarkable case of compound fracture of the leg in a child where extensive necrosis of the tibia appeared to have actually commenced, but where the antiseptic treatment saved both life and limb.

measure of compulsory notification, the necessity for which and the merits of which have yet to be demonstrated. Dr. A. NEWSHOLME, the medical officer of health of Brighton, in a valuable paper showed it to be clear that a knowledge of the distribution of the condition is necessary before co-ordinated measures for its control can be undertaken, while the real utility of the notification of pulmonary tuberculosis depends upon the purposes to which the data thus collected are to be put and the facilities which obtain locally for the assistance and not the persecution of the patients. For instance, it would seem that in Brighton, where a large number of the patients notified are invited to spend a few weeks' holiday at the isolation hospital as the guests of the corporation, encouraging results, in so far as the actual number of cases notified are concerned, have been obtained; indeed, in this sense, voluntary notification at Brighton has been attended with greater success than compulsory notification at Sheffield. At the former place the visits of the sanitary staff are confined to the homes of the patients and are not extended, so at least we gather from Dr. NEWSHOLME'S observations, to the factories and workshops in which the patients work. The Cambridge discussion was a thoroughly interesting one and we were glad to be able to record at some length the remarks of Dr. J. H. C. DALTON, Dr. DUNCAN FORBES, Dr. L. HUMPHRY, Professor SIMS WOODHEAD, and Professor HOWARD MARSH. The gist of the debate was, perhaps, a little too optimistic with respect to voluntary notification since no reference was made to the places, and they are many, at which such notification has been practically a complete failure. Possibly, too, it may be found that the real value of notification, whether voluntary or compulsory, will be to bring to light early cases of the disease and by this means to reduce the death-rate by the arrest of the malady. But, as Professor HOWARD MARSH observed, the discussion showed that the difficulties surrounding voluntary notification are not so great as some persons have believed, and an extension of the system should tend materially to increase our knowledge as to the methods by which that portion of the disease which is caused by means other than infected milk is spread. The recent pronouncement by the Royal Commission on Tuberculosis has, however, raised issues of the greatest interest and moment, and it is now clear that pulmonary tuberculosis will not be eradicated by attention to the human source alone.

The paper read by Mr. EDWIN T. HALL before the Architectural Association was largely descriptive of existing sanatoriums and constituted a useful contribution to our knowledge of this side of the question. It would have been well had he not referred to the "advance" and "growth" of pulmonary tuberculosis—terms which must have conveyed to his audience the impression that the disease was on the increase, whereas, as was pointed out by Dr. H. T. BULSTROPE in the discussion, the disease has been steadily decreasing in England and Wales for very many years past. The most important parts of Mr. HALL'S paper, as also of the comments made by Dr. T. GLOVER LYON, were those which dealt with the cost of sanatoriums. As is well known, the cost of certain institutions erected within recent years in this country has been somewhere about £1000 per bed, which is an alarming and practically

prohibitive one if general provision for tuberculous cases is contemplated. It should, however, be borne in mind that the institutions to which these remarks mainly refer were erected by private munificence and that consequently they are not open to the criticisms which might perhaps be directed against them had they been provided out of local or State funds. If, too, permanent memorials are desired they cannot well take the shape of tents or huts, and the public should have every reason to be grateful for the provision which has gratuitously been placed at their disposal. Possibly we have tended in the past to be influenced unduly by the German type of building. The proposal, however, to erect a sanatorium at a cost (exclusive, presumably, of site, water-supply, and furnishing) of about £25 per bed, brings the provision of these institutions nearer practical realisation, and although it will probably be found that, when all payments have been met and a sufficient amount of land secured to enable the patients to be occupied thereon, this figure will be materially exceeded, it will be well if an opportunity can be afforded for erecting such an institution. But it may be desirable that, before any such scheme is actually embarked upon, a visit should be paid by the promoters to Benenden, in Kent, where a sanatorium is in course of erection and nearly completed, under the auspices of the National Association for the Establishment and Maintenance of Sanatoria for Workers suffering from Tuberculosis. The cost of this sanatorium, as was pointed out during the discussion on Mr. HALL'S paper, is somewhere about £100 per bed, and the project is deserving of every investigation in that it is an attempt to prove that sanatoriums once provided can be carried on by the workers themselves without any further appeal to the philanthropy of the public. There are, too, many other aspects of this scheme which should commend themselves to all serious students of the problem of tuberculosis. We have already suffered great disappointment from idle prophecies and ill-considered theories, and it is not too much to ask reformers to consider the mass of evidence under their hands to be sifted before they embark upon general counsels.

Innotations.

"Ne quid nimis."

HIGH ALTITUDES IN THE TREATMENT OF NERVOUS DISEASE.

WE have received a reprint of an article by Professor Nolda of St. Moritz on the value of high altitudes in the treatment of certain nervous diseases. A variety of observations have been made on the subject, including those of Erb, who wrote on "Winter Cures at High Altitudes," but few statistics have been forthcoming as to their value. Most of the Alpine stations with an altitude over 1300 metres, such as Arosa, Davos, Leysin, and Montana, derive the majority of their patients from sufferers with tuberculosis of the lungs, while St. Moritz receives also many sufferers from anaemia, chlorosis, and nervous conditions. Professor Nolda has observed 3000 patients of various nationalities suffering from nervous diseases and visiting St. Moritz. Those of Jewish origin predominate, but Slavs, notably Poles, and Romance nationalities, especially French, are also numerous. The next in number are Americans and Hungarians, while the Germanic races follow in the following

language of HUDIBRAS and which is affected by some modern medical writers. Such writers often deal with subjects which in their nature are difficult of comprehension by the lay mind and which therefore call for the most lucid exposition which the skilful employment of words of definite meaning can afford. It is largely, we believe, for the want of such exposition that the enormous practical results of modern medical science are still in great measure concealed from the apprehension of the public and that, save for occasional lip-service on special occasions, there is no real knowledge or recognition of what the medical schools, or the men proceeding from them, have accomplished even in quite recent years for the practical extension of the Empire and for the greater prosperity and greater safety of their fellow subjects.

In dealing with part of the question Dr. KEEN refers, in the first instance, to the victory of JENNER over small-pox; and his words appear to justify the belief that in America, as in Germany, the full fruits of that victory are secured and that they are not lost or imperilled, as with us, by the ignorant time-serving of politicians. He proceeds to the victory over yellow fever, by which the construction of the canal over the Isthmus of Panama has been rendered possible, and to that over diphtheria, by which the mortality from one of the most fatal of prevalent diseases has been reduced to the small percentage dependent upon neglected cases. In this enumeration it may be doubted whether he takes full account of the most splendid victory of all, that resulting from the general discovery of the agency of blood-sucking insects in the communication of disease and of the means by which, in due course of time, these insects may be destroyed. He does, indeed, couple the word malaria with yellow fever but the full meaning and the certain results of modern knowledge can scarcely be said to appear in their proper prominence upon his pages. The discoveries of MANSON and ROSS have pointed out the way to the effective opening of territories as large as Australia to the enterprise of merchants and colonists, have practically excluded "climate" from the difficulties to be overcome in tropical countries, and have substituted for it conditions which are controllable by the proper application of human agencies. The disappearance of the whole class of so-called "malarial" diseases from the countries infested by them, and the complete prevention of the terrible "sleeping sickness" and its analogues, are consequences now within measurable distance of achievement as results of medical education; and they are consequences at least as important to the human race as the discovery of America, or as the invention of steam locomotion either by land or sea. It will be a long time before the united energies of the whole tribe of politicians produce anything in the least degree comparable with them; and yet the bulk of the nation regards them not only without gratitude but without any conscious appreciation either of their magnitude or of their character. Quite recently the *Times* contained a letter from Professor RONALD ROSS describing the treatment received by Mr. HAFFKINE at the hands of the India Office, treatment only rendered possible by the existence of conditions which Professor ROSS vigorously describes. In India, in 1893, he tells us, both medical and

sanitary administration were in the hands, not of men of distinguished scientific ability, but of ordinary officials climbing upwards by seniority. The country lagged years behind other countries in the scientific study of disease. Discoveries made years previously in connexion with cholera, typhoid fever, malaria, filariasis, and dysentery were looked upon with easy scepticism or even contempt, no adequate public measures being taken to verify or to utilise them; and true scientific work was received with little encouragement or even with persecution. Of such treatment Mr. HAFFKINE has now been the latest example; and, as Professor ROSS declares, unless redress be speedily afforded, India and her rulers will stand convicted of indifference to science, stupidity, injustice, and gross ingratitude to one of their greatest benefactors. Nor, he tells us, has this been the only instance in which these qualities have been displayed towards distinguished but defenceless workers. It is manifest that their prevalence can only be explained on the hypothesis of a most suggestive ignorance at high quarters with regard to the nature of science and to its value in preserving the health and lives of the community.

The Control of Pulmonary Tuberculosis.

PERHAPS the most difficult administrative problem with which preventive medicine is face to face at the present time is that of the control of pulmonary tuberculosis, a disease which yearly claims such a substantial number of able-bodied adults whose labour and health are of far-reaching economic importance to the community. This difficulty is, no doubt, enhanced by the fact that there are constantly arising what may be regarded as false prophets who claim that by adopting the methods which they recommend the disease in question may be made to disappear in an astonishingly short space of time. Again, there are those who are prone to apply to the problem the same arguments and, except for vaccination, the same methods as are applied to small-pox, and who apparently hold the opinion that all those who suffer from pulmonary tuberculosis, even in its initial stages, should be separated from their friends until complete recovery or death. Obviously, having regard to the enormous prevalence of recognised and unrecognised tuberculosis, such a programme is impracticable and those who advocate it do not, we think, evince a due regard either for the teachings of epidemiology or the experience of administration.

But we cannot in this article discuss all the numerous proposals which have from time to time been presented for serious consideration, and we shall limit our references to the notification of the disease and the provision of sanatoriums, both of which may be regarded as within the limits of practicability and both of which have recently been the subject of useful papers and discussions, the former before the Cambridge Medical Society,¹ and the latter before the Architectural Association in London.² The debate at Cambridge was helpful, in that it accentuated the fact that a large amount of useful work may be carried out in connexion with the control of the disease without the extreme

¹ THE LANCET, March 16th, 1907, p. 736.
² THE LANCET, March 30th, 1907, p. 504.

waiting-rooms themselves, where the superannuated sofas—thanks to the overheated atmosphere diffused from ill-regulated *caloriferes*—give out again all that they have absorbed from relays of sitters, many of whom are the reverse of fanatical on the score of personal ablation. The buffets, too, at which a hasty meal may be snatched or a more leisurely repast consumed in expectation of a train 'in ritardo' are not always supplied with such food or drink as the invalid or even the healthy subject can safely indulge in—tinned meats or "preserved" vegetables or portable soups of uncertain date often entering into the menu. The same may be said of the wines and the mineral waters, not invariably an innocuous alternative to the so-called 'acqua potabile' of subsoil origin! The British press, professional and lay, to which Italy appeals for countenance in carrying through her much required railway reforms, has done much, and may do still more, in impressing upon the central authority at Rome the urgent need for making passenger traffic less fraught with discomfort and risk and less, by consequence, of a deterrent. There have been this season, it is said, fewer arrivals from the British Isles than Italy has known for many a day; but with the obstacles which she places in the path of her most welcome visitors, her press, headed by the Milanese journal, is more than justified in exclaiming '*Quid mirum!*'"

MILK-SUPPLY AND THE LONDON COUNTY COUNCIL.

ON the ground that many of the powers sought in the General Powers Bill, which stands for second reading in the House of Commons on April 11th, are controversial and would if retained delay the passage of the Bill the Parliamentary Committee has advised the Council to delete what are considered to be the contentious clauses. These include proposals relating to the sale of milk which were as follows: (1) to enable the Council to prohibit the sale of milk from any dairy situated within or without the county in which the medical officer suspects that cases of infectious disease within the county occurring in more than one sanitary district are attributable to the milk supplied from such dairy; (2) to enable the council to take samples of milk at railway stations and elsewhere in the county with the view of preventing the sale of milk unfit for human consumption; (3) to enable the council's medical officer to require dairymen to furnish lists of sources of milk and of their customers with a view of preventing the spread of infectious disease; and (4) to require dairymen to notify under penalty all cases of infectious disease among their servants and to prohibit any person suffering from an infectious disease from milking any animal, the milk of which is intended for consumption within the county. On the face of it, the decision of the Council to drop these clauses appears to be opposed directly to the canons of preventive medicine. Nothing is more certain than that contaminated milk is a very serious factor in the spread of infectious disease and therefore it is of the utmost importance that the public health should be jealously guarded by placing everything connected with the production and distribution of milk under an efficient system of control. It is, in fact, difficult to imagine any other clauses in the Bill which can relate to questions of greater importance. The Council's anxiety seems to be to get the Bill through the House this session, and the feeling apparently is that if the milk clauses are retained the chances of the Bill passing would be very remote owing to the opposition shown by all kinds of authorities. We are aware that county and municipal authorities have already large powers for dealing with the milk-supply, but it is obvious in the case of London that powers are wanted to deal with the milk at its source of

supply as well as at the distributing agencies. The Bill introduced by Mr. John Burns in the House of Commons a week ago does not relate to these questions, but merely seeks to sanction regulations for the supply of sterilised milk from municipal milk depôts without rendering the local authorities liable to surcharge by the official auditor.

AN IMPERIAL CONFERENCE ON HYGIENE AND TEMPERANCE.

IN order to stimulate general interest in the scientific teaching of hygiene and temperance as an integral basis of national education, and to bring before the country during the visit of the Colonial Premier trustworthy information as to what is done in various parts of the Empire, a committee, numbering among its members Sir Lauder Brunton, Sir Thomas Barlow, Mr. A. Pearce Gould, Sir Victor and Lady Horsley, Mr. W. McAdam Eccles, Surgeon-General G. J. H. Ivatt, Mr. C. H. Watts Parkinson, Mr. A. W. Mayo Robson, Dr. E. Claude Taylor, and Professor G. Sims Woodhead, has been formed to convene a Conference on the Teaching of Hygiene and Temperance in the Universities and Schools of the British Empire on St. George's Day, April 23rd. The conference has the approval of Lord Elgin, Secretary of State for the Colonies, who has promised to attend if his engagements at the Colonial Conference permit. Lord Strathcona and Sir John Gorst will respectively take the chair at the morning and afternoon sessions. Arrangements have been made for officially appointed educational experts to describe colonial systems of teaching the two subjects, while papers will also be read by leading continental *savants*. Further information and tickets of admission may be obtained from the honorary organising secretary, Miss St. John Wileman, 11, Chandos-street, Cavendish-square, London, W.

PRECIPITINS.

THAT scientific discoveries apparently most recondite and far removed from practical application may ultimately prove of great commercial or technical value might be demonstrated by innumerable examples. One such is seen in the application of the recently discovered precipitin reaction of Tschistovitch to medico-legal investigation. When the blood of one species of animal is injected into the body of an individual of another species it is found that the serum of the latter acquires the property of giving rise to a precipitate when added to a solution of the serum of the former or to a solution of any albuminous material derived from that species. By this means it is possible to identify, for example, bloodstains as human which by microscopical examination could only have been certainly ascertained to be of some mammalian origin. The reaction is indeed not absolutely specific, since blood from a nearly allied species—e.g., apes—may give a somewhat similar result, but it is not difficult to distinguish the two by quantitative tests. The precipitin reaction is now definitely recognised as a medico-legal test of great value in countries so diverse as Germany, Austria, the United States, Egypt, and Roumania. No instance of its employment in this country appears to be recorded. But the value of the reaction is not confined to this field. Its delicacy is such that it far surpasses the ordinary methods of proteid coagulation as a chemical test for these substances; it may be applied to detect adulteration in food materials, and has been employed by the biologist as a proof of a true group-relationship between animals of allied species. The interesting investigations of Professor D. A. Welsh and Dr. H. G. Chapman¹ have thrown a new light on the actual nature of the phenomenon of precipitation. They find that the substance precipitated is derived

¹ Welsh and Chapman: Proceedings of the Royal Society, B., vol. lxxviii., 1906.

order: Germans, Danes, Scandinavians, and English. The great majority of his patients were sufferers from neurasthenia, of which there were over 2000 cases. In those of recent origin due to anxiety, mental overwork, or following infectious diseases, alcoholism, and other intoxications, and traumatism lasting benefit is often derived from a stay of from four to eight weeks, but in older and more severe cases a stay of from four to six weeks in summer and a further stay in the winter are desirable. With regard to the effect of the high altitude on the individual symptoms, the headache and vertigo usually disappear within the first few days; the insomnia, however, often persists until the end of the period of acclimatisation, which is usually of from six to 12 days, but sometimes sleeplessness may go on for two or three weeks, which Professor Nolda does not regard as a contra-indication, but if the condition still persists after three weeks he sends such patients to lower levels. On the whole, he finds that 90 per cent. of neurasthenics with insomnia sleep better at high altitudes. The hypochondria associated with the disease usually becomes much less or disappears and Professor Nolda disagrees with the view of Krafft-Ebing, who regarded mental disturbance as a contra-indication. Mild degrees of cardiac neurosis, he finds, derive benefit from a mountain cure, but cases with dilatation or with marked arteriosclerosis should not be sent. Patients with migraine usually entirely lose their attacks from the day of arrival. Other visitors showing marked improvement are those with slight degrees of hysteria, melancholia, and epilepsy. Professor Nolda also finds that cases of spasmodic asthma of nervous origin derive much benefit, no less than 70 per cent. of them losing their attacks very shortly after arrival at St. Moritz, and in support of this he finds that the disease is absolutely unknown amongst the native-born inhabitants. It is a familiar fact that the Alpine health resorts owe a great deal of their vogue among those whose ordinary occupations are strenuous and exacting to the clear, rarefied atmosphere and to the exhilarating effects of the meteorological conditions found there, and it might *a priori* be expected that in conditions of moderate neurasthenia and the functional nervous, cardiac, and digestive derangements associated with it, such surroundings would be beneficial, but it should also be borne in mind that many such conditions are the result of overwork or over-stimulation, and that therefore enforced rest under as favourable conditions as possible is the rational form of treatment. It would seem therefore that high altitudes should be recommended in the first instance to mild cases or, as an after-care, in more severe conditions.

SENTIMENT AND HYGIENE.

It must be admitted that in many instances hygiene is directly opposed to sentiment and *vice versa*. The passing of the chalice or the loving cup from mouth to mouth is instinctively regarded as a process opposed to cleanly ideas, and medicine teaches how objectionable such a proceeding is and how it may easily hand on disease. But sentiment wins at every city dinner. Hygiene declines to agree with the sentiment that we must not dust an old bottle of port or claret covered with cobwebs and mould and removed from a cellar which must contain a deposit alive with, it may be, appalling bacteriological potentialities. Hygiene, again, would condemn the highly seasoned and oil-stained meerschaum or briar pipe, but sentiment says there is no pipe like it for a cool, well-flavoured, and pleasing smoke, besides which such a pipe has numberless associations, and the very sight of it recalls pleasant personal experiences. Hygiene dictates the removal of all so-called dirt films and the bringing to light of an exquisitely cleaned and smooth

surface whereon no bacteria can find lodgment; sentiment prefers the tone and dignity of deposit and loathes a brand new stone, brick, or tile. Hygiene would dispense with curtains and carpets and bid us live in rooms with walls and floors polished like a well-appointed dairy. To these things the sentiments of some people, at all events, naturally object. Hygiene has long attempted to banish the open fire, but sentiment has strongly, and so far successfully, resisted this attempt. Neither must there be smoke in the landscape if hygiene has its full sway, whatever art or sentiment may say. We cannot be found as advocates, however faint, of the smokiness of London, but the painters and etchers of less murky cities are never tired of pointing out the æsthetic possibilities of our capital with its blurred outlines and suggestive shadows. Hygiene would take away the jelly from the dietary because it is an excellent culture medium for micro-organisms; sentiment bids it stay. Instances could easily be multiplied. With hygiene there is no middle course. Its cry is sterilise, sterilise, scour, scour, but to sentiment sterilisation and scouring mean often a lost joy. How, then, can the strife between sentiment and hygiene be ended? Until knowledge is absolute it is impossible to say, for much that may be demanded in the name of hygiene now may be rescinded to-morrow because our sight is defective. Our consolation must be that in the great affairs of life hygiene does not necessarily make the world less beautiful, while the deference paid to well-founded sentiment increases with the improvement of our manners.

RAILWAY TRAVEL IN ITALY: ITS SANITARY DEFECTS.

"It is not only the vexatious unpunctuality, the defective accommodation, the frequent accidents due to inadequate personnel, that are evoking protests from the travelling public at home and abroad" (writes an Italian correspondent), "but the utter neglect of those sanitary observances and provisions which, always more or less in evidence in British, French, Belgian, Dutch, Swiss, and German railways, are conspicuously absent in those of Italy. Her most widely diffused journal—the *Secolo* of Milan—makes pointed reference to this shortcoming, beginning with the insufficient supply even of 'first aid' relief when one of the now too common collisions or 'deragliamenti' (derailments) occurs, the loss of time before the injured traveller receives professional assistance, and, when such is available, the lack of 'oggetti di medicazione' (surgical material), even of the means of transport from the scene of 'accident' to a place of shelter where adequate treatment is possible. In the strictly hygienic sphere, continues the *Secolo*, what has Italy done to make her passenger traffic safe or free from risk? Infective disease, most of all tuberculosis so frequently conveyed in the person of the phthisical patient, finds many a 'candidate' in the unsuspecting traveller, thrust at the eleventh hour into a carriage overcrowded, overheated, subjected to no disinfecting process, though it may have an hour or two before been occupied by the sufferer from variola, from scarlet fever, or from diphtheria. Resorting to as she is by so many people in all stages of lung disease in quest of sunshine and warmth, Italy ought to have a reserve of carriages specially set apart for such cases. There are the sleeping-car, the dining-car, and the carriage for *dames seules*. Why not the special car, and the carriage for the invalid? Such, it seems, is not to be had except at a prohibitive price; and so the healthy traveller has to take his chance beside a tuberculous subject or a diphtheritic *vis-à-vis*. The stations, again, in which the belated traveller has to spend weary hours are often the seat of every sanitary risk, from the impure water-supply and the evil-smelling latrines to the

waiting-rooms themselves, where the superannuated sofas—thanks to the overheated atmosphere diffused from ill-regulated *calorifères*—give out again all that they have absorbed from relays of sitters, many of whom are the reverse of fanatical on the score of personal ablution. The buffets, too, at which a hasty meal may be snatched or a more leisurely repast consumed in expectation of a train 'in ritardo' are not always supplied with such food or drink as the invalid or even the healthy subject can safely indulge in—tinned meats or "preserved" vegetables or portable soups of uncertain date often entering into the menu. The same may be said of the wines and the mineral waters, not invariably an innocuous alternative to the so-called 'acqua potabile' of subsoil origin! The British press, professional and lay, to which Italy appeals for countenance in carrying through her much required railway reforms, has done much, and may do still more, in impressing upon the central authority at Rome the urgent need for making passenger traffic less fraught with discomfort and risk and less, by consequence, of a deterrent. There have been this season, it is said, fewer arrivals from the British Isles than Italy has known for many a day; but with the obstacles which she places in the path of her most welcome visitors, her press, headed by the Milanese journal, is more than justified in exclaiming 'Quid mirum!'

MILK-SUPPLY AND THE LONDON COUNTY COUNCIL.

ON the ground that many of the powers sought in the General Powers Bill, which stands for second reading in the House of Commons on April 11th, are controversial and would if retained delay the passage of the Bill the Parliamentary Committee has advised the Council to delete what are considered to be the contentious clauses. These include proposals relating to the sale of milk which were as follows: (1) to enable the Council to prohibit the sale of milk from any dairy situated within or without the county in which the medical officer suspects that cases of infectious disease within the county occurring in more than one sanitary district are attributable to the milk supplied from such dairy; (2) to enable the council to take samples of milk at railway stations and elsewhere in the county with the view of preventing the sale of milk unfit for human consumption; (3) to enable the council's medical officer to require dairymen to furnish lists of sources of milk and of their customers with a view of preventing the spread of infectious disease; and (4) to require dairymen to notify under penalty all cases of infectious disease among their servants and to prohibit any person suffering from an infectious disease from milking any animal, the milk of which is intended for consumption within the county. On the face of it, the decision of the Council to drop these clauses appears to be opposed directly to the canons of preventive medicine. Nothing is more certain than that contaminated milk is a very serious factor in the spread of infectious disease and therefore it is of the utmost importance that the public health should be jealously guarded by placing everything connected with the production and distribution of milk under an efficient system of control. It is, in fact, difficult to imagine any other clauses in the Bill which can relate to questions of greater importance. The Council's anxiety seems to be to get the Bill through the House this session, and the feeling apparently is that if the milk clauses are retained the chances of the Bill passing would be very remote owing to the opposition shown by all kinds of authorities. We are aware that county and municipal authorities have already large powers for dealing with the milk-supply, but it is obvious in the case of London that powers are wanted to deal with the milk at its source of

supply as well as at the distributing agencies. The Bill introduced by Mr. John Burns in the House of Commons a week ago does not relate to these questions, but merely seeks to sanction regulations for the supply of sterilised milk from municipal milk depôts without rendering the local authorities liable to surcharge by the official auditor.

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mainly from the antiserum, not from the albuminous material ("homologous proteid") with which it reacts. The actual solid content of precipitating antiserum is increased as compared with the normal serum from an animal of the same species. At present it is impossible to calculate the quantities of serum and homologous proteid which take part in the reaction by any simple chemical equation, but the observers just quoted see no reason to doubt that a definite chemical reaction does occur.

MEDICAL REFEREES UNDER THE NEW WORKMEN'S COMPENSATION ACT.

THE development of the scope of the Workmen's Compensation Act, 1906, which comes into force on July 1st next, by which it is estimated that 6,000,000 workers will come under its provisions who were not affected by the Act of 1897, has caused us again to review carefully the Act in the interest of the medical profession. We have on several occasions pointed out that the question of the regulations to be made by the Secretary of State for the Home Department is one of the greatest importance, but the question of the appointment of medical referees is, we venture to think, one of certainly not less moment. The medical referees under the new Act will be called upon to decide between the conflicting views of medical practitioners, to give opinions in obscure and difficult surgical cases, and their decisions are to be final; they are therefore to act as judges, from whose decisions there is no appeal. In these circumstances it is perfectly clear that the practitioners selected for these posts must be of sufficient recognised standing to possess the confidence of their medical confreres in the several districts. Medical men will willingly meet in consultation and place their considered opinions before a medical referee for final judgment and award where the medical referee enjoys a high professional position and reputation, but these qualifications are necessary if the decisions of the referee are to be accepted as satisfactory solutions of points in dispute. We trust that the Secretary of State will, in the appointment of medical referees under the Act, meet the wishes and requirements of the profession, so that the medical regulations may work smoothly and without friction.

DEATHS IN PUBLIC INSTITUTIONS

THE recently issued report of the Registrar-General calls attention to the fact that during the year 1905 no fewer than 91,597, or 17.6 per cent., of the deaths registered in England and Wales occurred in public institutions, including workhouses and workhouse infirmaries, hospitals, and public lunatic asylums. It is, moreover, pointed out that the average percentage of these institution deaths in the ten preceding years 1895-1904 did not exceed 14.6. The increase in the proportion of deaths in each of the three classes of institutions has, indeed, been marked and constant during the past 30 years. In 1875 the proportion of deaths registered in public institutions did not exceed 8.8 per cent., which was but half the percentage in 1905. It must, however, be borne in mind that the number of these public institutions in which deaths are recorded has more than doubled during the 30 years. The separate workhouse establishments have increased from 715 in 1875 to 816 in 1905; hospitals and infirmaries from 582 to 1833; and public lunatic asylums from 83 to 136. The proportion of deaths recorded in workhouse establishments increased from 5.6 per cent. in 1875 to 9.4 in 1905; the percentage of deaths in hospitals during the 30 years increased from 2.3 to 6.3, and in public lunatic asylums from 0.9 to 1.9. The number of hospitals in England and Wales has, it appears, more than trebled during the 30 years under notice, owing mainly

to the marked increase in the number of cottage and isolation hospitals during that period. The fact noted in the Registrar-General's report that 32,899 deaths were registered during 1905 in the 1833 hospitals included in his list affords an entirely inadequate indication of the constantly increasing benefit which these charitable institutions confer on the public through the self-denying and honorary services rendered by their surgical and medical staffs. It seems impossible to doubt that the steady increase of hospital accommodation and service is at least one of the factors in the persistent improvement in public health during the past 30 years.

SPARTEINE SULPHATE IN POST-OPERATIVE SUPPRESSION OF URINE.

IN the *Medical Record* of Jan. 19th the value of sparteine sulphate in the prevention and the treatment of post-operative suppression of urine is recorded by Dr. Stuart McGuire. Suppression of urine after an operation is found in cases where nephritis pre-existed owing to sepsis or cholamia. As it does not develop until 24 or 36 hours after the operation it would appear that it is not due to shock. A patient operated on for retention of urine or jaundice occasionally does well for two or three days and then suddenly passes no more urine, becomes listless, restless, and then develops a stupor, rapidly deepening into a coma, and ultimately dies with all the symptoms characteristic of uræmia. Dr. McGuire has a record of six cases in which sparteine sulphate was the means of saving the patient's life. The drug increases the blood pressure, makes the pulse slower and stronger, and acts as a powerful diuretic. Doses of from one to two grains are given hypodermically and are repeated every three to six hours. The action is manifest in 30 minutes after administration and lasts for from four to six hours. Its employment should not be delayed until suppression of urine occurs, since it is a prophylactic as well as a curative agent. Dr. McGuire prefers sparteine sulphate to the drugs of the digitalis type owing to its rapidity of action and the efficiency of the results. It is noteworthy that the dose recommended is large as compared with the doses usually given—viz., one-tenth of a grain. Dr. McGuire failed to obtain good results with the usual remedies for suppression of urine, including the administration of water by the mouth and rectum and under the skin, strychnine and nitro-glycerine, calomel and saline purgatives, hot packs, vapour baths, and counter-irritants.

EUGENICS AND DESCENT.

Mr. Brudenell Carter, in the current number of the *Cornhill Magazine*, writes a suggestive commentary upon the endeavour of Mr. Francis Galton to establish an ordered knowledge of the conditions of parentage such as might tend towards the improvement of future generations of men, that being a sufficiently near definition of the science of "Eugenics." Mr. Carter's light but learned essay will hardly be regarded by Mr. Galton's followers as encouraging, for he evidently believes that we know as yet so little, at any rate so little for certain, of the influences of heredity that we are not in a position to say what is or what is not an atavistic result, or where or when a "throwback" will occur. It is evident that to bring about a progressive improvement of the human race by a system of selective marriages would imply a total remodelling of our social theories and procedures, and before embarking upon such a revolution we have a right to ask those who press it upon us how far they can predict any surety of results to be obtained by selective mating. Taking into consideration the way that the world now lives, it is beyond the power of prophecy to foretell that the children of a good or successful man will display the qualities or virtues which their parents have displayed.

Modern civilisation has produced so many complications, the rise and fall of commercial fortunes is so much more rapid, the commingling of classes is so much more general and intimate, that the parental influence whether moral or social has not the force that it formerly had. Physically the advocate of selective breeding is upon strong ground, for the whole world joins with the medical profession in condemning the union of the physically unfit. But the whole world also knows that we must not look to the heroes of muscular achievement as the ideal progenitors of a sane and well-balanced stock. We refer our readers to Mr. Carter's interesting article in which, writing from something of this point of view, he shows that before any method of scientific race production can be considered by the legislature it will at least be necessary, to quote his words, "that the laws of inheritance should be as firmly established as those of physics, and that the consequences produced by violations of them should have been brought home to successive generations by the hard teachings of experience."

THE INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

It is announced that the Fourteenth International Congress of Hygiene and Demography will be held in Berlin from Sept. 23rd to 29th. The meetings will not continue longer than till 2 P.M. each day in order that the afternoons may be devoted to visiting the numerous hygienic institutions of Berlin and its environs. There are more than a hundred such establishments which can be visited in this way, some of them without any restrictions and some by specially conducted parties. In order that the members of the congress may be able to select those in which they happen to feel most interest a "Hygienic Guide" will be issued containing short descriptions of the various institutes in three languages. Dr. Ellsberger, privy councillor in the Department of Public Worship and Education, is the president of the local committee. The general secretary of the congress is Dr. Nietner, Eichhornstrasse 9, Berlin 9 W.

BRIGHT SUNSHINE.

DURING the last fortnight of last month the brilliance of the weather was extraordinary, as will be gauged from the following figures:—

Stations.	Number of hours.	Difference from average.
Aberdeen	160	+ 42
Scarborough	113	*
Harrogate	119	"
Blackpool	110	+ 55
Llandudno	116	+ 60
Torquay	136	+ 63
Bournemouth	134	*
Brighton	111	+ 44
Eastbourne	128	+ 62
Hastings	123	- 51
Folkestone	120	*
Margate	128	+ 63
Clacton	114	*
Lowestoft	121	*
Bath	136	*
London	90	+ 63

* No trustworthy average.

Such a general absence of cloud as is here indicated has not been experienced at the same time of year during the present generation and an excellent example is furnished of what the British climate would often be in early spring if anti-

cyclones, and not cyclones, were the prevailing weather systems. On the coast fog and mist were practically non-existent except for a brief time about sunrise, and it was only in London that that unwelcome and belated visitor exercised any appreciable effect on the number of hours of sunshine. Had the atmosphere in the metropolis been as free from smoke and dust as it was in the country there is every reason to suppose that in spite of the almost stagnant air during the latter part of the period, which in the actual circumstances rendered the fog possible, London would have fared nearly as well as did the resorts on the coast. As it was, the sunshine in London (Westminster) for the whole month—152 hours—was much higher than any experienced during March since the automatic records commenced in 1881. While there can scarcely be a doubt as to the healthy influence of the abnormal sunshine it is questionable if the absence of rain which invariably accompanies anticyclonic weather is an unmixed blessing. London and several other districts had no more than half the usual amount of rain during last month, and what is, perhaps, more serious still, the quantity that has fallen since Jan. 1st in the metropolitan area and many other localities in the south and east of England has been only about 50 per cent. of the ordinary amount.

CELLULITIS AND MYOSITIS OF THE ABDOMINAL WALL SIMULATING INTRA-ABDOMINAL DISEASE.

In the *Journal of the American Medical Association* of March 2nd Dr. J. M. Hitzrot has pointed out the close resemblance which may exist between inflammatory conditions of the abdominal wall and intra-abdominal disease—a subject which has received little attention. He relates the following case. A youth, aged 18 years, was admitted into hospital complaining of pain in the right side of the abdomen. He ate a heavy meal eight days before and awoke next morning with pain in the abdomen, at first diffused but later becoming localised on the right side. It was cramp-like and occurred in paroxysms. It disappeared for about three days, leaving only a dull ache in the right side. On the fourth day it returned in great severity to the right side, which gradually grew tender. At the onset the patient vomited and the vomiting recurred at intervals but was never distressing. The bowels were constipated but acted freely to medication. On examination the face was flushed, the pulse was 104, and the temperature was 103.6° F. The respiratory movements were limited above the umbilicus and were absent below it. The abdomen was slightly distended and everywhere slightly tender. In the right iliac region was a hard, readily defined, very tender mass, extending from the anterior border of the rectus well into the flank and from the level of the umbilicus to an inch from Poupart's ligament. In this area there was marked muscular rigidity. Gentle percussion over the mass gave a tympanitic note. Acute appendicitis with abscess was diagnosed. An incision was made over the mass through the external oblique muscle. A small quantity of sero-sanguineous, slightly purulent fluid was found on the internal oblique muscle, which was cedematous and rather indurated. On cutting through it considerable cedema and induration were found in the subperitoneal tissue and the peritoneum seemed swollen and cedematous. The peritoneal cavity was opened and the intestines and appendix were found to be normal. As the appendix was very long it was removed. The peritoneum was carefully closed. The muscular and fascial layers were closely approximated, a drain was inserted at each angle of the wound down to the peritoneum, and the wound in the skin was closed with silk. A reddish grumous discharge of pus and muscle cells took place for about 12 days and the wound broke open. The discharge then

gradually ceased and the wound rapidly granulated. Recovery was uneventful. From the wound at the time of operation the staphylococcus pyogenes aureus was obtained in pure culture. The indiscretion in diet, the abdominal pain, at first generalised and then localised on the right side, the accompanying vomiting and constipation, the subsidence of the pain after catharsis and return in greater severity, the fever, rapid pulse, and tender hard mass in the region of the appendix, all seemed to point to disease of that organ. The literature of such conditions of the abdominal wall is scanty. Hiller has reported the case of a woman, aged 23 years, who complained of occasional pain in the region of the gall-bladder for three and a half years.¹ For two months the pain had been more severe and the patient noticed a tumour which had gradually enlarged. On examination a smooth, somewhat moveable, easily palpable tumour of the size of a goose's egg was felt in the region of the gall-bladder, two fingers' breadth below the costal margin. It seemed to have a thin pedicle leading up under the costal margin and did not seem to be adherent to the abdominal wall. An operation for cholecystitis was performed but an abscess of the right rectus muscle infiltrating the adjacent muscles was found. No connexion with the peritoneum or ribs could be found. Allison has recorded a case of abscess of the abdominal wall simulating malignant disease of the transverse colon in a coloured girl, aged 18 years.² The region of the umbilicus was tender and showed a swelling which resembled malignant growth. On operation a tuberculous abscess was found between the rectus sheath and the peritoneum.

INFANT MORTALITY AND MILK IN THE PHILIPPINE ISLANDS.

A New York correspondent writes: "The annual report of the Bureau of Health of the Philippine Islands, from July 1st, 1905, to June 30th, 1906, has just been issued in the United States. This is the only Bureau of Health under the American Government and much excellent work has been performed in Manila and in other parts of the Philippine Islands by it and by the health boards which preceded it. Some three years ago the bureau began the systematic education of the public in matters pertaining to the care of infants. A committee of native physicians prepared a special bulletin and distributed it among the people. The bulletin contained the usual propaganda. Particular emphasis was placed on the value of proper feeding, and it was shown that mother's milk is the natural food for infants and that the next best substitute is cow's milk. Since the issue of the bulletin the consumption of milk in Manila has increased 500 per cent., but, alas, this has had no effect in checking infant mortality. The fault has been soon found to be in the lack of care exercised with regard to the vessels and receptacles in which milk is kept and the failure to take the precautions necessary to keep the milk fresh. Contamination also at the period of milking must be taken into consideration. Nearly 95 per cent. of the milk used is obtained from the carabao which is by nature a dirty animal. A sanitary code which it is hoped will become law soon provides that all milk-dealers in the Philippines shall register at the Bureau of Health and that all vessels or receptacles used by them to contain milk shall be made of smooth impervious material which is capable of being thoroughly sterilised, and provided with suitable covers. The code also provides against adulteration by insuring that all milk sold or offered for sale shall be at all times subject to examination and analysis by the Bureau of Health and

that diseased milch animals may be summarily condemned and destroyed. It is anticipated that there will be difficulty in getting the code transformed into law and that even then regulations will not easily be preserved intact. But in the end the health of the infants will surely be benefited."

THE CONSUMPTION OF ALCOHOLIC BEVERAGES.

A RETURN presented to Parliament by the Board of Trade gives some interesting particulars with regard to the consumption of alcoholic beverages in the year 1905. It is stated that in the United Kingdom the consumption of wine has been falling continuously since 1899 and in 1905 amounted to only a little more than a quarter gallon (0.27 gallon) per head. The average for the period 1901-05 is a little higher, being 0.32 gallon. The consumption of beer in this country shows some fluctuation. In 1891 the consumption of beer per head of the population amounted to 30.2 gallons, from which point it fell yearly until in 1894 it was 29.5 gallons. From 1894 it rose steadily until it reached 32.6 gallons in 1899, since which year it has again steadily declined, and in 1905 it amounted to not more than 27.7 gallons. In Belgium the consumption of beer per head of the population in 1905 was 40.8 gallons, and in Germany 26.3. During 15 years the consumption of spirits per head of the population in this country has followed nearly the same course as the consumption of beer, having been low (0.97 proof gallon) in 1894, from which point it increased yearly to 1.09 gallons in 1899 and to 1.11 gallons in 1900. It has since decreased each year to a total of 0.91 gallon in 1905. It is difficult to attach any exact meaning to these figures, but the common impression is that the amounts consumed vary directly with the spending power of the public. So long as wines of the light kinds are sold at an unreasonably high price so will the demand for ardent spirits, and especially whisky, be maintained, for whisky and soda water provide a stimulant which is cheaper than wine, and people do not concern themselves so much as to the æsthetic qualities of wines as they used to do, while the average purse is not so long as it used to be.

INTRA-ORBITAL INJECTIONS OF CYANIDE OF MERCURY IN SYMPATHETIC OPHTHALMIA.

A METHOD of treatment of sympathetic ophthalmia, which is claimed by the proposer, Dr. G. Valois, to have been practised successfully by him in several cases, has been published in Professor Galezowski's *Revue d'Ophthalmologie* (No. 1, 1907). One of the cases recorded is that of a child, aged seven years, who in playing with a knife inflicted on himself a severe penetrating wound of the cornea. Dr. Valois saw the patient on the evening of the same day, when there were blood in the anterior chamber and a large hernia of the iris. An iridectomy was performed and a part of the blood was removed. The case went on well for eight days, when suddenly the intra-ocular tension diminished, a zone of redness appeared surrounding the cornea, and pain was felt in the globe. Soon after the opposite eye became affected. The sclerotic reddened, the cornea presented a fine descemitis, and the iris ceased to respond to light. Enucleation of the injured eye was at once practised and 24 hours later all the symptoms in the sympathising eye were relieved. Ten days afterwards, when the patient was about to be discharged from the hospital as convalescent, a fresh attack of inflammation with descemitis supervened, large exudates in the form of a triangle appeared on the posterior surface of the cornea, and the iris could not be dilated with atropine. The eye was manifestly in great danger. Dr. Valois therefore promptly injected deeply two drops of a 1 per cent. solution of cyanide of mercury into the orbit of the enucleated eye. On the following

¹ Beiträge zur Klinischen Chirurgie, 1899, p. 826.

² Medical News, 1891, xxv., p. 217.

day the redness had diminished. Two days subsequently a second similar injection was made and it was observed that whilst the redness still diminished the desceinitis persisted. Ten days were now allowed to elapse, at the end of which time ten drops of the cyanide solution were injected. Four days after redness had disappeared and the subsequent progress of the case was in all respects satisfactory. An objection to this mode of treatment is the extreme pain caused by the injection.

EPIDEMIC CEREBRO-SPINAL FEVER.

SINCE our last issue there has been no special event to record in connexion with the epidemic of cerebro-spinal fever beyond the occurrence of sporadic cases in localities hitherto unaffected. In London a case has been removed from Shoreditch to the Eastern Hospital of the Asylums Board. Cases have been diagnosed at Hutton in Essex and at Tipton in Staffordshire, and fatal cases have occurred at Salford and at Ripley, near Derby. In Edinburgh seven cases have been notified as presenting suspicious features; four of these have been removed to a hospital, four patients have died, and 14 remain under observation. In Glasgow the conditions show no alteration. There has been an extension of the disease in Aberdeenshire. The first case in this county was mentioned in our issue of March 23rd, p. 826, as occurring in the Cluny district, and a niece of this patient has since been attacked at Kintore. A fatal case has occurred in Stirling. In Belfast the public health committee has decided to make no daily statement as to the progress of the epidemic but in future to give only a weekly return of the number of cases and the deaths that have occurred each week. Since the commencement of the outbreak in this city there have been 228 cases with 136 deaths.

THE REGISTRATION OF PLUMBERS.

AN interesting leaflet has reached us in reference to this subject, being a reprint of a discussion on the matter which has recently been taking place in the columns of the *Liverpool Daily Post*. Mr. W. D. Caröe, the Master of the Worshipful Company of Plumbers, points out that the propriety and utility of a system of registration of plumbers were first publicly debated in Liverpool, when the British Medical Association held its congress there in 1833, while in the following year, when the International Health Congress was held in London, the whole question of the means of insuring the qualification and responsibility of plumbers and the efficiency of their work in its sanitary relation was considered by a great gathering of plumbers, architects, and sanitary authorities. It was then seen that inferior work and appliances constituted in a great measure the cause of the falling into disuse of the apprenticeship system and the increase of untrained men in the ranks both of employers and employed. The education and registration of the plumber followed and at the present time we are happy to note that 14,000 plumbers have been enrolled upon the register. Much of the success of the Worshipful Company of Plumbers in this matter is no doubt due to the fact that the Company exists solely for the benefit of the public and the advancement of craftsmanship and that it is in no way concerned with trading or trade profits as such. The work of the Company would be easier and its benefits more widely spread if the public could be induced in their own interests to give employment wherever possible to registered plumbers only. The avoidance of structural defects in the dwelling-house is one of the most important factors in domestic hygiene, and the general health of the community is not a little dependent upon the way in which the plumber carries out his work. The concluding editorial remarks of the *Liverpool Daily Post* sum up the

situation exactly: "Really competent men would be certain to welcome a compulsory registration test. Incompetent men ought either to be compelled to make themselves competent or to be by law forbidden to practise."

A SESSIONAL meeting of the Royal Sanitary Institute will be held at the Parkes Museum on Tuesday, April 9th, at 8 P.M., when a discussion will take place on the Aim and Scope of Women's Work in Relation to Public Health. The discussion will be opened by Dr. H. Meredith Richards, medical officer of health of Croydon. General discussion is invited and Colonel J. Lane Nottter, R.A.M.O., chairman of the council of the institute, will preside.

THE spring meeting of the South-Eastern division of the Medico-Psychological Association will be held, by the courtesy of Dr. F. R. P. Taylor, at the East Sussex County Asylum, Hellingly, on Wednesday, April 17th, commencing at 12 noon.

A TELEGRAM from the Governor of Hong-Kong received at the Colonial Office on March 25th states that there were 3 cases of plague reported during the week ending March 23rd and 3 deaths from the disease.

THE RÔLE OF THE BLOOD PLASMA IN DISEASE.

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VI.¹

THERAPEUTICAL DEDUCTIONS.

WE have seen what a large part the plasma plays in shaping the destinies of the organism: in determining the various phases of evolution, in promoting senile decay, and in setting up morbid processes. As regards the latter it is no exaggeration to say that the rôle of the plasma in the genesis of disease is all-predominating, and that the future of pathology and therapeutics is essentially bound up in this subtly complex fluid.

That the majority of the diseases which the physician is called upon to treat are plasmic in origin is made manifest by a glance at the appended list of disorders which are admittedly induced through the plasma. The classification adopted, though obviously not a logical one, suffices nevertheless for our purpose.

1. All the bacterially induced diseases, such as the exanthemata and allied affections—e.g., scarlet fever, measles, small-pox, typhus fever, typhoid fever, influenza, rheumatic fever, mumps, diphtheria, and cholera; such disorders as pneumonia, cerebro-spinal fever, infantile paralysis, acute ascending paralysis; a multitude of unnamed febriculae, including "common colds"; the various tuberculous affections—e.g., phthisis pulmonalis, tuberculous meningitis, tuberculous kidney; gonorrhoea and syphilis in its multitudinous manifestations.

2. All inflammatory affections, with the exception of those due to direct irritation from without (as may happen, for example, in gastritis, bronchitis, and dermatitis).

3. Diseases due to the introduction of poisons from without—e.g., alcohol, opium, tobacco, tea, lead, arsenic, and mercury.

4. Gout and those numerous allied affections grouped under the term "rheumatic," such as muscular rheumatism and fibrositis—e.g., lumbago.

5. Numerous non-gouty affections of the joints, such as pyæmic and syphilitic arthritis, rheumatoid arthritis, chronic rheumatism, and many allied arthritides, impossible at present to classify.

6. The various hormonio disorders—e.g., Graves's disease, myxœdema, Addison's disease, and acromegaly.

¹ Articles I., II., III., IV., and V. were published in THE LANCET of Feb. 2nd (p. 313), 9th (p. 375), and 23rd (p. 535), and March 16th (p. 754) and 23rd (p. 827), 1907, respectively.

7. Spasmodic asthma, megrim, and diabetes.
8. Infantilism, delayed or premature puberty, and premature senility.
9. Such well-known affections of the blood as purpura, scurvy, chlorosis, pernicious anemia, and leucocythæmia.
10. All the so-called "primary" degenerative affections of the nervous system, with the possible exception of such diseases as Friedreich's and those which are excited by excessive functioning; most functional nervous disorders, including insanity, megrim, neuralgia, headache, and those multitudinous minor nervous disturbances to which almost all civilised human beings are occasionally liable.
11. Practically all the organic diseases of the cardio-vascular system other than the congenital and those due to muscular strain. As instances of heart disease caused through the plasma may be mentioned the endocarditis, myocarditis, and pericarditis of rheumatic fever, the endocarditis of influenza and the exanthemata, the pericarditis of Bright's disease, and the fatty degeneration of the myocardium resulting from chronic alcoholism. How large a part the plasma may take in causing cardio-vascular disease is further shown by the phenomena of chronic Bright's disease.
12. Most diseases of the lungs, bronchi, and plasma. Consider the frequent involvement of these structures in the specific fevers, in gout, and Bright's disease; the frequency of bronchitis in improperly fed children; and the large part which tuberculosis plays in pulmonary and pleural affections.

Seeing, then, how dominating is the rôle of the plasma in disease, it follows that in every case which comes before him the physician should pay due regard to the condition of that fluid. Generally he will be safe in postulating some plasmic defect, and his chief concern should be to discover in what that defect consists, and having done this, to correct it. He should argue: "If I can bring about a normal condition of the plasma, I can make my patient well." Doubtless it is not possible to effect a complete cure when there is grave structural change; nevertheless it is remarkable to what extent even serious degenerative changes can be recovered from, provided a healthy state of the plasma is established. Consider, for example, how completely the patient can be cured of grave alcoholic neuritis if only he can be made to abandon his drinking habits.

The proposition "healthy plasma implies health" is in the main accurate. Exceptions may occur, for example, in such a disease as facial neuralgia resulting from a lesion of the Gasserian ganglion; but cases of this kind are comparatively rare and the physician may rest assured that he will seldom fail to cure his patients if he can establish a perfectly healthy condition of the plasma.

While assigning to the plasma this prominent rôle in disease I am not unmindful of the part played by the nervous system in pathogenesis, nor of the good which may be achieved through it. We should ever be careful to remove any reflex irritation, such as eye strain, that may be present, and to get all the good we can by mental treatment, be it through education, change of scene, suggestion, or what not. Yet even then, and when all is said and done, it will be found that it is largely through the plasma that the good effect is achieved.

MEANS OF CORRECTING THE PLASMA.

In every case of disease in which we believe the plasma to be abnormal the first question to ask ourselves is: What is the nature of the defect? Does it pertain to its nutrients, hormones, enzymes, or excreta, and if so, what is its precise character? Unhappily, we can but rarely answer this question with any degree of precision, though in the correct answer to it lies the key to the diagnosis and the treatment of most non-surgical diseases. I do not propose to enter into the various methods at our disposal for discovering plasmic defects here—that would be altogether beyond the scope of these papers. I must content myself with briefly indicating the different ways of correcting them when found. They may be grouped under the following heads: (1) methods directed to the digestive system; (2) methods directed to the excretory organs; (3) methods directed to the destruction of bacteria, or the neutralisation of their products; and (4) methods directed to the correction of defects in respect of hormones and enzymes.

Methods directed to the digestive system.—In our endeavour to bring about a healthy state of the plasma we shall find

that it is through the digestive system that we can generally work most effectually. This is because digestion plays a preponderating part in determining the composition of the plasma, for disorders of it lead not only to the impoverishment but (what is of much greater pathological import) to the poisoning of the plasma, and also because the digestive system, owing to its large bulk and the complexity of its functions, but still more to its wanton abuse, is very apt to be thrown out of gear; so much so, indeed, that a sound digestion is but seldom met with among the civilised, the majority of whom suffer in greater or less degree from indigestion toxæmia—a condition responsible for much ill health among us moderns. Be it remembered that sound digestion generally means sound plasma and thus sound health, while defective digestion always implies unsound plasma and consequently imperfect health. This dependence of sound health upon sound digestion has long been recognised. Among the Chinese our "How do you do?" is rendered by "How is your stomach?"

We shall the better realise the prominent part played by the digestive system in determining the composition of the plasma if we reflect that of the sum total of material agencies operating upon the organism from without—constituting, that is, its material environment—food occupies the first place; it is from the food that the tissues are built up, and it is from the food, together with oxygen, that the energy of the vital machine is derived. The conversion of this crude food into a form suitable for absorption and assimilation is a function of the first importance, one consuming a large share of the total energy expended by the organism, and requiring the constant activity of the most bulky system of organs in the body. This capacious system includes not only the liver and the pancreas, but some 30 feet of tubing furnished with many millions of glands, and it contains on an average no less than one half the total blood mass. Nor must it be forgotten that the function of the digestive glands does not end with digestion; they also furnish enzymes and hormones which, entering the blood, play a necessary part in nutrition.

Here I would point out that it is essentially through the digestive system that climate benefits health. In most diseases it may be said that the patient does best where his digestion is best. No doubt other factors come into play, especially in such affections as bronchitis and rheumatism, in which the good effect of climate is largely produced by the direct influence of the atmosphere upon the skin and mucous membrane. Nevertheless, it is essentially the digestive factor that we have to rely on in the climatic treatment of disease. It will be found, for example, that the benefit which a tuberculous child derives from a stay at Margate is in direct proportion to the improvement which takes place in the character of his motions.

It is imperative that the physician should realise how large a part the establishment of normal digestion plays in treatment. Not until he does will he be able to secure a full measure of therapeutic success, no matter with what branch of medicine he may decide to identify himself. For this reason the study of dietetics and indigestion should occupy a prominent place in the student's curriculum, and throughout the whole of his subsequent career be kept constantly in view. Nothing more forcibly shows the evils of ultra-specialism than the casual way in which these subjects are treated by many physicians. In whatever direction he specialises a physician must at least learn the best that is known of the diagnosis and treatment of digestive disorders.

Let me here cite an incident which gives point to these remarks. Fully imbued with the truth I have just sought to emphasise, a physician of my acquaintance has for some time past been devoting himself to the study of diet, and in this connexion he not long since made an examination of the jaws and teeth of that splendid collection of skulls contained in the museum of the Royal College of Surgeons. Now this greatly concerned an old friend of his who, having docketed him neurologist, declared that he was gravely jeopardising his professional success by not sticking to his neurological last, that his conduct in thus straying beyond his own proper field was strangely heterodox, not to say eccentric, for (thus ran the argument) what in the name of common sense can teeth have to do with nerves? My friend contends, not, I think, without reason, that in point of fact there is a very close connexion between the two, and he is satisfied that his excursions into the realms of dietetics and

microbiology have in no small degree enhanced his efficiency as a practical physician, and not the least so among those of his patients who suffer from nervous maladies.

Methods directed to the excretory organs.—When the blood contains poisons an attempt may be made to get rid of them by promoting excretion, and from the earliest days of medicine eliminants in the shape of purgatives, diaphoretics, diuretics, and emetics have been used for this purpose. With the exception of the first of these, however, it cannot be said that they are of much help in purifying the blood and even purgatives act rather by preventing the absorption than by promoting the elimination of poisons. Diaphoretics are of little value as blood purifiers. A "cold" can sometimes be stayed off by "getting the skin to act"—e.g., by wrapping the patient up in blankets or putting him in a warm bath; and the Turkish bath is occasionally of therapeutic service, though not so useful as the natural diaphoresis provoked by exercise. In uræmia diaphoretics are practically valueless, while as for such time-honoured practices as giving ammonium acetate in febrile states, few would contend that they can have any appreciable effect in ridding the blood of poisons. Nor can it be said that diuretics are any more valuable for this purpose, except in so far as they act by stimulating a failing heart and thus removing dropsical accumulations.

And just as we cannot get much help from eliminants in relieving toxæmia, so, on the other hand, it is only exceptionally that any marked degree of toxæmia is attributable to defective elimination of normal excreta, except, perhaps, in the case of constipation. The fact is, such excreta are rapidly run out of the blood and only tend to accumulate seriously when there is grave organic disease of the heart, lungs, or kidneys. In short, toxæmia results from the absorption of poisons from without, or from the undue production of poisons within, rather than from failure in the eliminating organs; and its treatment therefore should consist rather in the prevention of such absorption and such undue formation, or in treatment calculated to neutralise the poisons present, not in attempts to promote their elimination.

Methods of coping with bacteria and their products.—We now know that the human organism has special methods of its own for striking at pathogenic bacteria and their products, methods which have been steadily evolving from the very beginning of animal life. No branch of therapeutics holds out greater promise than that which is based on these natural methods. Treatment of this kind, rendered possible by the labours of such men as Pasteur, Behring, Koch, and Wright, is eminently scientific and rational. Before their time the treatment of bacterially-induced diseases was for the most part empirical. It is true that abscesses have long been treated by rational surgical means and that the treatment of typhoid fever by cautious dieting and of hyperpyrexia by the application of cold may be regarded as genuinely rational; but speaking generally, it must be conceded that, prior to the advent of the new system, the treatment of microbial diseases was essentially empirical, and very poor at that. In the case of such affections as pneumonia, diphtheria, and the exanthemata, our treatment, so far as any good has come of it, has essentially consisted, not in worrying the patient by fussy interference, but in leaving him severely alone and trusting to careful nursing. While we have been hugging ourselves with the belief that we have "pulled him through" by a specious litle of treatment, it is Nature who has all the time been doing stern battle with the malignant foe. And how ineffectual and stupid our worrying applications to the diphtheric throat now seem in the light of the modern serum treatment! How pathetically puerile our snickering treatment of pneumonia (on which whole libraries of treatises have been written), when we learn that at the crisis the opsonic index of the blood leaps upwards, in token that the great strategist Nature has completed her plans for the final phagocytic onslaught, which is to annihilate the pneumococci and thus remove the essential cause of the disease!

We have still a great deal to learn on the subject of immunity. So far as our present knowledge goes the means adopted by the host for coping with bacteria would appear to fall under two heads—those adapted (1) to destroy the bacteria; and (2) to neutralise the poisons which they

which engulf and digest them or by means of chemical substances. These latter are of several kinds and include the lysins which actually dissolve the bacteria (as happens, for instance, in typhoid fever and cholera), and the opsonins which so affect the bacteria as to render them an easy prey to the phagocytes.

2. The bacterial poisons are neutralised by the antitoxins, substances which have been administered with great success in diphtheria, tetanus, and botulism. These poisons, allied as they are to the foodstuffs, are capable of being linked on to the molecules of the living protoplasm, such assimilative union interfering with the normal vital activities of the cells. Now the antitoxins combine with the bacterial poisons and thus prevent the latter from entering into union with the cell protoplasm, thus giving time for the process of bacterial destruction to be carried through.

The treatment of bacterial diseases by the application of nature's own method consists for the most part in the administration of antitoxins and of substances calculated to increase the opsonic power of the blood. For this latter method we are indebted to the classic researches of Wright and Douglas. In order that this treatment may be successful the quantity of the substance administered has to be carefully regulated in relation to the opsonic index. By due attention to this particular Wright, Bulloch, and others have been able to obtain striking results in local tuberculosis, as well as in acne, furunculosis, and syphilis.

When we reflect what brilliant results have in so short a time been achieved by this method of treatment, may we not confidently anticipate a splendid future for it? Treatment by drugs, dating back though it does some thousands of years, has with a few exceptions yielded but barren results. It was hoped that great things would come from a study of their physiological action and that a reign of rational, as distinguished from empirical, drug treatment had by it been inaugurated; but, alas, such hopes have not been realised. While many useful drugs will doubtless be discovered in the future the treatment by drugs seems destined long to remain essentially empirical. At last, however, a method of treatment has been discovered which is in the truest sense of the term scientific and rational, based as it is on the very method nature herself employs.

Methods directed to the correction of defects in respect of hormones and enzymes.—Whenever disease is due to a hormonal or enzymic defect the treatment obviously consists in correcting that defect. To do this we must first discover its exact nature, and this is seldom possible in the present state of our knowledge. We know that myxœdema is due to deficient thyroid action and are able to cure the affection by the administration of thyroid extract. Certain cases of infantilism, again, are apparently due to some defect in the pancreas and can be greatly benefited, as Byrom Bramwell has shown, by means of an extract of this gland. On the other hand, though there are good reasons for concluding that Graves's disease, Addison's disease, and acromegaly are due to perverted hormonal function of definite tissues, the treatment of these diseases by the administration of an extract of the affected tissue has hitherto proved disappointing. Similarly, while evidence seems to point to the conclusion that pancreatic diabetes results from the absence from the blood of a pancreatic enzyme, no satisfactory treatment of that disease has yet been discovered. But although at present we can do but little for this (probably large) class of disorders, we may reasonably hope for greater success as our knowledge of their pathology becomes more accurate.

Conclusion.—The object of these papers has been to emphasise the great importance, from the point of view of treatment, of fixing the attention on the plasma. The whole art of healing consists in acting directly on brain and nerves (as by education, "suggestion," the removal of peripheral irritation) and in correcting a faulty plasma—neither more nor less—and we may sum it up in the aphorisms, "Tercè la mind and the nerves; correct the plasma." There is no form of medical treatment but is embraced by one or other of these injunctions, and of the two the second is much the more important. Had we a Temple of Healing over one of its doorways the words, *Nervus atque viscerum cura*, might fittingly be inscribed, but over the main portal in letters of gold should be placed the admonition—

Corrige Plasma.

² It is scarcely necessary to say that it is impossible to express these aphorisms in classical Latin, which has no word either for the "nerves" or the blood "plasma."

BRITISH MEDICAL BENEVOLENT FUND.

At the March meeting of the managing committee of this fund 22 applications for assistance were received and some amounting to £254 voted in relief to 21 of the cases. The deaths of three annuitants were reported and vacancies so created were filled from the list of selected candidates. Mr. E. Parker Young was re-elected chairman of the committee for the ensuing year.

An abstract of the cases relieved is appended:—

Widow, aged 49 years, of L.R.C.P., L.R.C.S. Edin., who practised in London. Quite unprovided for at husband's death three years ago and is unable to obtain regular employment on account of ill-health and a deformity. No children. Relieved three times, £22. Recommended by Mrs. Coulson. Voted £14, £2 immediately and £12 in monthly instalments.

Daughter, aged 68 years, of late L.S.A., who practised in Monmouthshire. For 36 years has earned a living as governess, companion, &c., but her health is now breaking up. Recommended by Dr. Miles Milley and Mrs. Louisa Anderson. Voted £12 in 12 instalments.

M.B. Lond., aged 70 years. Has practised for 40 years but is now quite incapacitated. No income; children only just self-supporting. Recommended by Sir John Tweedy and Dr. F. T. Roberts (Vice-Presidents). Voted £20 in one sum.

Daughter, aged 68 years, of late M.R.C.S., who practised in Yorkshire. Has maintained herself as a governess for many years but is now quite broken down in health and dependent on a small weekly allowance from a charity. Recommended by Dr. Hector M. Robinson, honorary local secretary, and by Mrs. Braithwaite. Voted £12 in 12 instalments.

Widow, aged 60 years, of L.R.C.P. Irel., who practised in Cheshire. Quite unprovided for at death of husband a few months ago and has recently undergone a severe operation. Recommended by Mr. J. Taylor. Voted £12 in 12 instalments.

Daughter, aged 62 years, of late M.R.C.S., who practised for many years in London. Since mother's death has been living on a small legacy which is now exhausted. Health very feeble. Recommended by Mr. Reginald Harrison, Vice-President. Voted £12 in 12 instalments.

Daughter, aged 47 years, of late M.R.C.S., L.S.A., who practised in Essex. Is an epileptic and practically incapacitated by the results of burns. Recommended by Dr. Walter Rosser, honorary local secretary. Voted £12 in 12 instalments.

Widow, aged 48 years, of L.R.C.P. Edin., M.R.C.S. Eng., who practised in Herefordshire and whose savings were exhausted by a long illness ending in death. For several years applicant has kept a boarding house which she is now compelled to give up on account of ill-health. No income. Five children, of whom only two are able to give a little help and two are quite dependent. Relieved four times, £60. Recommended by Surgeon-Lieutenant-Colonel W. B. O. Deebila. Voted £12 in 12 instalments.

Daughter, aged 51 years, of late L.R.C.P. Edin., L.S.A., who practised in Lancashire. No income; is allowed a few shillings a week by a friend. Used to be a dressmaker but lost her situation when her firm dissolved a few years ago and since then has been unable to obtain regular employment. Relieved twice £20. Recommended by Dr. Alfred Godson. Voted £10 in 10 instalments.

Widow, aged 57 years, of L.S.A., who practised in Suffolk. Only income £8 a year. Lets lodgings but has had her rooms empty all the winter. Five children; only one able to give a little help and two still dependent. Relieved five times, £60. Recommended by Dr. W. S. A. Griffith. Voted £10 in ten instalments.

Widow, aged 62 years, of M.D. O.M. Glasg., who practised in Cheshire. No income; practically dependent upon this fund and a few shillings a week given by the Ladies' Working Guild. Relieved seven times, £24. Recommended by Miss Farquhar. Voted £10 in ten instalments.

Daughter, aged 60 years, of L.R.C.P. Edin., L.S.A., who practised in London. Used to support herself by taking boarders but for the last few years has been in very bad health and is now dependent on two sisters who have to maintain themselves. Relieved twice, £16. Recommended by Sir Anderson Critchett, Vice-President. Voted £10.

Widow, aged 57 years, of L.R.C.P., L.R.C.S. Irel., who practised in London. Applicant was well provided for at her husband's death 13 years ago but soon lost everything through a fraudulent solicitor. Endeavours to maintain herself as a companion but during the past year has undergone four operations and is now in a very feeble state of health. Relieved twice, £20. Recommended by Messrs. W. and A. Gilbey. Voted £10 in one sum.

Widow, aged 68 years, of M.R.C.S., L.S.A., who practised in Somersetshire. For 20 years after husband's death applicant maintained herself as a cook-housekeeper but her health is now broken down. Relieved once, £12. Recommended by Mr. J. Gould. Voted £12 in 12 instalments.

Daughter, aged 55 years, of late M.R.C.S., L.S.A., who practised in London and Birmingham. No income; endeavours to support herself and an invalid sister by needlework. Recommended by Dr. J. E. Nevins, honorary local secretary. Voted £12 in 12 instalments.

Daughter, aged 57 years, of late M.R.C.S., who practised in Gloucestershire and was an annuitant of this fund. Is given a home in return for services but receives no salary. Relieved five times, £24. Recommended by Mr. O. H. Fowler. Voted £12 in 12 instalments.

Widow, aged 49 years, of L.R.C.P. Edin., L.S.A., who practised in Cumberland. Quite unprovided for at husband's death four years ago. Health indifferent. Five children, barely self-supporting. Relieved once, £10. Recommended by Dr. G. H. Hume. Voted £10 in two instalments.

L.R.C.P. Edin., M.R.C.S. Eng., aged 60 years, who practises in Surrey. For the last three years has been incapacitated by hemiplegia and consequently earnings average less than £1 a week. Seven children, the youngest being three years old, and only one self-supporting. Relieved four times, £27. Recommended by Deputy-Surgeon-General E. McKellar. Voted £18 in 12 instalments.

Widow, aged 63 years, of L.R.C.P. Edin., L.S.A., who practised in Glasgow. No income; allowed £10 a year by a charity. Has endeavoured to support herself for some years by taking boarders, but is obliged to give up on account of ill-health. Applicant's only daughter, a teacher, has been ill for the last four or five months, and it has been necessary to sell some of the furniture to meet unavoidable expenses. Relieved eight times, £26. Recommended by Sir Patrick Heron Watson and by Dr. Joseph Bell (honorary local secretary). Voted £12 in 12 instalments.

Widow, aged 46 years, of M.R.C.S., L.S.A., who practised in county Durham. No income; endeavours to support herself by sewing. Health indifferent; two children—a son just self-supporting and a daughter, a school girl. Relieved five times, £47. Recommended by Mr. Henry Power and by Dr. W. B. Winston. Voted £12 in 12 instalments.

Daughter, aged 51 years, of late M.R.C.S., L.S.A., who practised in London. No income; is allowed a few shillings a week by a sister; health too indifferent for regular employment but does needlework when able. Relieved nine times, £101. Recommended by Mr. W. Bramley Taylor. Voted £12 in 12 instalments.

THE SOCIAL AND PHILANTHROPIC SIDE OF A GERMAN CHEMICAL FACTORY.

In the social life of Germany much importance attaches to the various systems and organizations which have for their object the promotion of the welfare of the working classes. The principal ones have been made the subject of special legislation and are binding on all persons who come within the scope of their definitions, whilst others depend on voluntary effort or are the result of mutual understandings between employers and employed. The compulsory institutions of this kind are represented mainly by the State-controlled systems of insuring working people against sickness, accident, and other circumstances conducive to bodily infirmity, whilst the benefit clubs and other philanthropic schemes of several great industrial undertakings come under the second heading. Manufactures of various kinds in which chemistry plays a leading part exist in Germany on an immense scale, one of the leading businesses being that carried on at the colour works known as Die Farbwerke vorm. Meister Lucius und Brüning at Hoechst on the river Main, not far from Frankfurt in South Germany. The magnitude of this company's operations may be understood from a brief statement recently issued by it showing that in 1906 the manufacturing department employed 5000 workmen, 200 foremen, 190 chemists, and 60 technological experts, whilst the trading department had a staff of 340. The State-controlled system of insurance of working people against illness, of course, operates in this factory as in every part of Germany since June, 1883, but the firm had before that date put a similar scheme in practice and the modifications required by the new law were comparatively unimportant. The letters contributed to THE LANCET by our Berlin correspondent have frequently explained that of the funds for the State-controlled insurance against illness two-thirds are collected from the workers and one-third is added by the employers. Many other means were adopted by the firm for the benefit of their employees and recently a small volume, about half of which consisted of architectural plans and elevations, was published, showing what had been accomplished in this direction, arranged under the following heads:—Insurance against accident and illness (die Batriebskrankenkasse); the Emperor William and Empress Augusta Fund for invalid workmen, widows, and orphans (die Kaiser Wilhelm- und Augustastiftung); the foremen's pension fund (die Aufseher-Pensionskasse); the savings bank (die Sparkasse); the general aid (Unterstützungsfonds); baths, various mess-rooms (Speiseanstalten); general shop (Kaufhaus); workmen's dwellings; men's dormitories (Schlafäle); the school of domestic economy; the maternity hospital; music, instrumental and vocal; the library; the convalescent home; the homes for pensioned workmen (Arbeiterheim); and the pension fund of the staff (Beamten-Pensionskasse). As a selection from the above it may here be sufficient to give a few words of explanation with respect to (1) sick pay and the care of patients; (2) the Emperor William and Empress Augusta fund; (3) the pension fund of the staff; (4) workmen's dwellings; and (5) the maternity hospital.

1. Sick pay and the care of patients.—As regards sick pay, it may be remarked that the average wages of a skilled workman are 4 marks per day and the normal sick pay is 60 per cent. of the wages, when the latter do not exceed 4 marks, but in cases of exceptional necessity or accident without contributory negligence, the firm may pay full

are: (1) to provide pensions for men past work, as well as for their widows and children; (2) to lend sums up to 3000 marks at 4 per cent. interest and 2 per cent. redemption for the purchase of real estate (*Immobilien*); and (3) to lend sums up to 100 marks in cases of great necessity. The members of this fund are about 2000 in number; they pay no subscriptions but must have had five years' continuous service with the company.

3. *The pension fund of the staff.*—*Beamten-Pensionskasse* means the pension fund of what may be called in English the salaried staff (*Beamte*) as distinguished from the wage-earners. Membership of this fund is compulsory on all of this class who are not already members of the Emperor William and Empress Augusta Fund or the foremen's pension fund. It was founded in 1884 with a capital sum of 30,000 marks and its assets in 1906 were 2,015,000 marks.

4. *Workmen's dwellings.*—The erection of workmen's dwellings was commenced in the year 1875; in 1899 they numbered 380; in 1903 there were 536; and in 1906 there were 50 for salaried officials (*Beamte*) and 700 for foremen and workmen. These dwellings, built on the company's land, remain the property of the company in all circumstances, but the company encourages and assists workmen to acquire or build residences of their own in the neighbourhood (see Fig. 1). The house to the front and left side in the picture is for four families and cost 19,800 marks to build; each family has six rooms. The other is also for four families, each having three rooms. The rent of the company's dwellings varies from 2 marks 30 pfennig per week for a house of two rooms, kitchen, cellar, outhouse, and garden, to 4 marks 20 pfennig per week for one of five rooms, kitchen, cellar, outhouse, and garden. Most of the dwellings are semi-detached (*Doppelhäuser*), but some are detached (*Einzelhäuser*); others are divided into four, and others stand in rows. Repairs and necessary renewals are done by the company.

5. *The Maternity Hospital.*—This hospital (see Fig. 2) was opened in 1900, partly with a view to relieve the workmen's households from the inconvenience of confinements taking place at home, and more especially to prevent the mothers from leaving their beds and returning to domestic duties too soon. No charge is made to the patients. If help is required in the husband's house the company pays two-thirds of the expense incurred. In the hospital there are six rooms with two beds each, three rooms with one bed each, two lying-in rooms, and three bathrooms. The hospital is under the general supervision and control of the Government district medical officer (*Königlicher Kreisarzt*) in Hoeschst; the actual working staff is composed of a Red Cross sister from Wiesbaden, a deputy sister, and two midwives. The hospital is said to be well patronised (*vorübergehend schon voll besetzt*) by the workmen's wives, although the actual number of patients is not given.

From the above summary it will be seen that the persons employed in this factory enjoy a number of advantages unobtainable apart from a large and profitable business, the heads of which are disposed to do as much as possible for the welfare of their subordinates.

MEDICINE AND THE LAW.

An Unregistered Person practising Dentistry: the Alleged Attitude of the Home Office.

At Cockermouth recently James Evan Jordan was convicted and fined 1s. at the instance of the London and Counties Medical Protection Society for using titles implying that he was registered under the Dentists Act, 1878, or was specially qualified to practise dentistry. The titles used were "D.S., U.S.A., the American Dentist," which were upon a brass door-plate, and an advertisement in the *West Cumberland Times* contained matter to the same effect. The solicitor appearing for the defendant admitted the above to be facts and also that the defendant was not registered and had no qualification to be so, but stated that he was "a member of the Rhode Island Association and that he would be properly qualified in America." The fine of 1s. inflicted might appear to be light but for a circumstance narrated by the defendant's solicitor which will account to some extent for the attitude of the bench and which, if accurately described in the report of his speech in

the *West Cumberland Times*, must be characterised as remarkable. It had been suggested that the defendant had deceived the Cumberland county council but "the facts as regards that were these: seven or eight years ago Mr. Jordan was appointed dentist to the industrial school at Cockermouth. Some kind professional friends of his (he could not help thinking that these professional friends were the people who were really bringing them there to-day) wrote to the committee of the industrial school and informed them that Mr. Jordan was an unregistered dentist, and therefore not a fit person to hold the post of dentist to the school. The matter was referred to Mr. C. B. Hodgson, Carlisle, and from him to the Home Office. The Home Office were fully informed of the circumstances and they said that if the work was done by Mr. Jordan to the satisfaction of the committee the appointment was perfectly good and right." We should like to see copies of the correspondence alluded to before according absolute belief to every detail of a statement which amounts to this: that the Home Office would endorse the appointment, say, of a blacksmith as dentist to operate on the unhappy inmates of an industrial school, provided that the blacksmith drew teeth and otherwise attended to his patients to the satisfaction of the committee! If the statement made represents accurately the official opinion we should desire to refer the Home Office and the council in question to the whole of the legislation of the years which have gone by since the passing of the Medical Act, 1858, and of the Dentists Act, 1878. As far as we are aware, no recognition has ever been accorded to the appointment of any person to fulfil the functions of a medical man or dentist by any Act of Parliament except with the stipulation that the appointed person shall be a practitioner registered according to the law, but a mistake may have been made. We should be glad to be informed of the exact grounds upon which the defending solicitor in the case in question was able to claim the official recognition of the Home Office for the appointment of an unregistered person to practise dentistry upon the inmates of an industrial school, subject only to the test that the committee should be satisfied.

The Overlying and Accidental Burning of Children.

The Bill which has for its object the prevention of those unnecessary deaths of children which occur through their being left alone in rooms with unguarded fires, was commented on in THE LANCET of March 16th, p. 760, and about 1600 cases occur to illustrate the need for it in every year. One, however, which was investigated at an inquest at Hackney recently affords so good an instance of the kind of mother whose care for her offspring requires to be stimulated by law that it is worth referring to. The deceased was a child, aged three years, and his mother in giving evidence said that she went out shopping leaving him with another child, aged two years, in the back kitchen. There was an unguarded fire in the front room and he appears to have gone in there and set his clothing alight, with the result that he died from the consequent burns. "He was up to everything and she (his mother) had had to beat him hundreds of time." A mother whose only idea of training and protecting her child was to beat him can hardly complain if her management of her family is interfered with to some extent by law, and if she is compelled to purchase a fireguard the fact that she can afford to rent two rooms suggests that the purchase of such an article of a cheap but effective kind might be within her powers. Had the Bill referred to become law the mother in the case described might have been convicted of manslaughter.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8544 births and 5168 deaths were registered during the week ending March 23rd. The annual rate of mortality, which had been equal to 18·4, 18·2, and 17·8 per 1000 in the three preceding weeks, further declined to 16·8 in the week under notice. During the first 12 weeks of the current quarter the death-rate in these towns averaged 19·1 per 1000, the rate during the same period in London being 19·3. The lowest death-rates in the 76 towns during the week were 9·1 in Willesden, 9·8 in Burton-on-Trent, 9·9 in Newcastle-on-Tyne, and 10·3 in

Handsworth; the rates in the other towns ranged upwards to 25.5 in Hastings, 25.9 in St. Helens, 27.7 in Middlesbrough, and 29.4 in West Bromwich. The 5156 deaths in the 78 towns showed a further decline of 320 from the numbers returned in recent weeks, and included 469 which were referred to the principal epidemic diseases, against 470 and 465 in the two preceding weeks; of these, 182 resulted from measles, 114 from whooping-cough, 59 from diphtheria, 49 from diarrhoea, 39 from scarlet fever, 26 from "fever" (principally enteric), and not one from small-pox. The deaths from these epidemic diseases were equal to an annual rate of 1.5 per 1000 in the 78 towns, the rate from the same diseases being 1.1 in London. No death from any of these epidemic diseases was registered in Norwich, Plymouth, Southampton, Swansea, or in 11 other of the 78 towns; the annual rate therefrom, however, ranged upwards to 3.9 in Smethwick, 4.4 in Birkenhead, 7.3 in St. Helens, and 8.3 in West Bromwich. The 182 fatal cases of measles showed a further decline of 17 from the numbers returned in recent weeks, but caused an annual rate of 3.1 in Smethwick, 3.4 in East Ham, 3.5 in Birkenhead, 6.8 in St. Helens and in West Bromwich. The 114 deaths from whooping-cough were equal to the number in the previous week, the highest annual rates therefrom being 1.9 in Tynemouth, 2.1 in Willesden, and 3.1 in East Ham. The 59 deaths referred to diphtheria also showed a further slight decline, but were proportionally most excessive in Walthamstow, Halifax, and West Bromwich. Neither scarlet fever nor "fever" showed marked prevalence in any of the 76 towns. Diarrhoea caused the greatest fatality in Devonport and Burnley. No case of small-pox has been under treatment in the Metropolitan Asylums Hospitals since the end of June last. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had steadily declined in the 12 preceding weeks from 3846 to 2826, further fell to 2734 in the week under notice; 312 new cases of this disease were admitted to these hospitals during the week, against 308 and 327 in the two previous weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 432, 405, and 403 in the three preceding weeks, further declined to 353 in the week under notice, but exceeded the corrected average number in the corresponding week of the last five years by 15. The 22 deaths referred to influenza in London were four below the corrected average. The causes of 56, or 1.1 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Sheffield, Bristol, West Ham, Newcastle-on-Tyne, and in 51 other of the 76 towns; the proportion of uncertified deaths, however, again showed a marked excess in Birmingham, Liverpool, Preston, Sunderland, and South Shields.

In 76 of the largest English towns 8117 births and 5450 deaths were registered during the week ending March 30th. The annual rate of mortality, which had been equal to 17.8 and 16.8 per 1000 in the two preceding weeks, rose again to 17.7 per 1000 during the week under notice. During the past quarter the death-rate in these towns has averaged 19.0 per 1000; the rate in London during the same period being 19.2. The lowest death-rates last week in the 76 towns were 8.0 in Willesden, 8.4 in Reading, 9.0 in King's Norton, 9.3 in Hastings, 10.5 in York, and 10.8 in Derby; in the other towns the rates ranged upwards to 24.6 in Swansea, 25.6 in Handley, 26.2 in Bolton, 27.1 in St. Helens, and 29.5 in Birkenhead. The 5450 deaths in the 76 towns showed an increase of 254 over the number in the preceding week, and included 559 which were referred to the principal epidemic diseases, against 465 and 469 in the two preceding weeks; of these, 233 resulted from measles, 175 from whooping-cough, 61 from diphtheria, 37 from diarrhoea, 33 from scarlet fever, 20 from "fever" (principally enteric), and none from small-pox. The deaths from these epidemic diseases were equal to an annual rate of 1.8 per 1000 in the 76 towns; the rate from the same diseases being 1.9 per 1000 in London. No death from any of these epidemic diseases was registered in Leicester, Burnley, Huddersfield, or in five other of the 76 towns; the annual rates ranged upwards to 5.5 in West Hartlepool, 5.7 in East Ham, 6.2 in St. Helens, and 11.0 in Birkenhead. The 233 fatal cases of measles showed a marked increase upon the number in the preceding week, and caused an annual death-rate of 3.8

in East Ham, 4.5 in West Bromwich, 5.6 in St. Helens, and 8.8 in Birkenhead. The 175 deaths from whooping-cough also showed an increase, the highest annual rates last week being 1.7 in Tottenham, in Leyton, and in Walthamstow, and 3.2 in Swansea. The 61 deaths from diphtheria were slightly in excess of the number in the preceding week, the greatest proportional mortality from this disease being recorded in Aston Manor, Coventry, and Wigan. The deaths from scarlet fever, from enteric fever, and from diarrhoea were below the average numbers in recent weeks, and were not excessive in any of the 76 towns. No case of small-pox has been under treatment in the Metropolitan Asylums Hospitals since June last. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had continuously declined in the 13 preceding weeks from 3846 to 2734, had further fallen to 2637 at the end of last week; 330 new cases of this disease were admitted to these hospitals during the week, against 327 and 312 in the two previous weeks. The deaths in London referred to pneumonia and other diseases of the respiratory system, which had been 405, 403, and 353 in the three preceding weeks, were 354 during the week under notice, and were 31 above the corrected average number in the corresponding week of the five previous years. The 24 deaths from influenza in London were two above the corrected average. The causes of 43, or 0.8 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London, West Ham, Portsmouth, Bristol, Leicester, Nottingham, Salford, Bradford, Newcastle-on-Tyne, and in 47 other of the 76 towns; the proportion of uncertified deaths, however, showed a marked excess in Liverpool, Birmingham, Sheffield, West Bromwich, Coventry, Warrington, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 20.6 and 20.5 per 1000 in the two preceding weeks, rose again to 20.6 in the week ending March 23rd, and exceeded the mean rate in the 78 English towns by 3.8. The rates in the eight Scotch towns ranged from 14.9 and 16.5 in Aberdeen and Perth, to 20.1 in Dundee and 24.1 in Glasgow. The 715 deaths in the eight towns showed an increase of three upon the number in the previous week, and included 102 which were referred to the principal epidemic diseases, against 112 and 100 in the two preceding weeks. These 102 deaths were equal to an annual rate of 2.9 per 1000, which exceeded by 1.4 the rate from the same diseases in the 78 English towns; they included 48 which were referred to "fever," 33 to whooping-cough, 11 to diarrhoea, six to diphtheria, four to measles, and not one to small-pox or scarlet fever. The deaths referred to "fever," which had been 52 and 43 in the two previous weeks, rose again to 48 during the week and included 38 in Glasgow, five in Edinburgh, three in Leith, and two in Paisley; 33 of the 38 deaths from "fever" in Glasgow, four of the five in Edinburgh, and all those recorded in Leith and Paisley were certified as cerebro-spinal meningitis. The 33 fatal cases of whooping-cough corresponded with the number in the previous week, and included 30 in Glasgow and two in Edinburgh. Of the 11 deaths attributed to diarrhoea, three occurred in Edinburgh and two each in Glasgow, Aberdeen, and Leith. Four of the six fatal cases of diphtheria were returned in Glasgow; and measles caused two deaths both in Glasgow and in Edinburgh. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 149 and 155 in the two preceding weeks, declined to 147 in the week under notice, but exceeded the number in the corresponding week of last year by 23. The causes of 18, or 2.5 per cent., of the deaths registered during the week in the eight towns were not certified or not stated; the percentage of uncertified deaths in the 76 English towns during the same week did not exceed 1.1.

The annual rate of mortality in eight of the principal Scotch towns, which had been 20.5 and 20.6 per 1000 in the two preceding weeks, declined again to 20.3 in the week ending March 30th, but exceeded by 2.6 per 1000 the mean rate in the 78 large English towns. The rates in the eight Scotch towns ranged from 15.6 in Leith and 16.1 in Aberdeen to 21.2 in Paisley and in Greenock, and 22.1 in Glasgow. The 706 deaths in the eight towns showed a decrease of nine from the number in the preceding week,

and included 107 which were referred to the principal epidemic diseases, against 100 and 102 in the two preceding weeks. These 107 deaths were equal to an annual rate of 3.1 per 1000, which exceeded by 1.3 per 1000 the rate from the principal epidemic diseases in the 76 English towns; they included 39 which were referred to "fever," 34 to whooping-cough, 19 to diarrhoea, seven to measles, six to diphtheria, and two to scarlet fever, but not any to small-pox. The deaths referred to "fever," which had been 43 and 48 in the two preceding weeks, declined again to 39 last week, and included 31 in Glasgow, four in Edinburgh, three in Paisley, and one in Leith; all these 39 deaths, with the exception of one in Paisley, were certified as cerebro-spinal meningitis. The deaths from whooping-cough, which had been 33 in each of the two preceding weeks, rose last week to 34, of which 26 occurred in Glasgow, three in Edinburgh, and two in Aberdeen. The fatal cases of diarrhoea, which had been 13 and 11 in the two preceding weeks, rose again to 19 last week, and included nine in Glasgow, three in Edinburgh, three in Aberdeen, and two in Paisley. Of the seven deaths from measles, four occurred in Glasgow and two in Edinburgh; and three of the six deaths from diphtheria were registered in Glasgow. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 155 and 147 in the two preceding weeks, declined to 123 during the week under notice but were 20 in excess of the number in the corresponding week of last year. The causes of 21, or 3 per cent., of the deaths registered during the week in the eight towns were not certified or not stated; the percentage of uncertified deaths in the 76 English towns during the same week did not exceed 0.8.

HEALTH OF DUBLIN.

The annual death-rate in Dublin, which had been equal to 28.6, 25.2, and 24.9 per 1000 in the three preceding weeks, further declined to 22.3 in the week ending March 23rd. During the first 12 weeks of the current quarter the death-rate in the city averaged 27.5 per 1000; the mean rate during the same period did not exceed 19.3 in London and 19.7 in Edinburgh. The 167 deaths of Dublin residents registered during the week under notice showed a further decline of 20 from the numbers in recent weeks, and included 12 which were referred to the principal epidemic diseases, against ten and 16 in the two previous weeks. These 12 deaths were equal to an annual rate of 1.6 per 1000, and included seven from whooping-cough, three from measles, one each from diphtheria and diarrhoea and not one either from scarlet fever, "fever," or small-pox. The fatal cases of whooping-cough exceeded the number in the previous week, while those of measles and diarrhoea showed a decline. Two deaths were also referred to cerebro-spinal fever. The deaths in the city included 27 of infants under one year of age and 35 of persons aged upwards of 60 years, showing a marked decline from the numbers in the previous week. Four deaths from violence and five inquest cases were registered; and 67, or 40.1 per cent., of the deaths registered during the week occurred in public institutions. The causes of all but one of the deaths in the city were duly certified; the percentage of uncertified deaths in the week under notice was 3.5 in Edinburgh and 0.1 in London. The 167 deaths registered in Belfast during the week ending March 23rd included 14 certified as due to cerebro-spinal meningitis or cerebro-spinal fever.

The annual death-rate in Dublin, which had been equal to 25.2, 24.9, and 22.3 per 1000 in the three preceding weeks, rose again to 24.3 per 1000 in the week ending March 30th. During the past quarter the death-rate has averaged 27.2 per 1000, the mean rate during the same period being 19.2 in London and 19.6 in Edinburgh. The 182 deaths of Dublin residents registered during the week under notice showed an increase of 15 over the number in the preceding week; and included 12 which were referred to the principal epidemic diseases, against 16 and 12 in the two preceding weeks. These 12 deaths were equal to an annual rate of 1.6 per 1000, and included four from measles, four from whooping-cough, two from "fever," and one each from diphtheria and diarrhoea, but not any from either small-pox or scarlet fever. The fatal cases of measles slightly exceeded the number in the previous week, while those of whooping-cough showed a decrease. The deaths from all causes included 26 of children under one year of age and 44

of persons aged upwards of 60 years, the latter being nine in excess of the corresponding number in the preceding week. Five deaths from violence and two inquest cases were registered; and 70, or 38.5 per cent., of the deaths registered during the week occurred in public institutions. The causes of three of the deaths were not certified; in London no uncertified death was registered last week and in Edinburgh only one.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: W. M. Craig to Haslar Hospital; G. A. Waters to the *Excellent*, for the *Revenge*; F. A. Brice to the *President*, for three months' course at West London Hospital; F. J. Lilly to the *President*, for three months' course at Greenwich Hospital; and D'Arcy Harvey to the *Argonaut*, on commissioning. Surgeons: G. M. O. Richards to Haslar Hospital, P. T. Sutcliffe to the *Exmouth*, and W. P. Hingston to the *Vivid*.

ROYAL ARMY MEDICAL CORPS.

Captain Frederick F. Carroll is seconded for service with the Egyptian army (dated March 19th, 1907).

ROYAL ARMY MEDICAL CORPS IN INDIA.

Lieutenant-Colonel J. R. Forrest is appointed to command the Station Hospital at Delhi, vice Major Tibbias transferred. Major J. Hennessy to command the Station Hospital at Poonamallee and Major N. Tyacke to the command of the Station Hospital at Dalhousie. Captain L. W. Harrison is appointed to the medical charge of the Headquarters Staff and Establishments, Northern Command, Murree, vice Captain R. S. H. Fuhr, D.S.O. Lieutenant J. Campbell is appointed to the charge of the 8th Divisional Laboratory. Captain E. B. Knox sailed for England on duty with troops by the hospital ship *Plassy* on March 6th. Captain G. H. J. Brown has passed in lower standard Burmese. Leave out of India to the following officers has been granted: Lieutenant-Colonel F. W. G. Hall, from May 28th to Dec. 28th; Captain E. B. Knox is granted eight months combined leave out of India from March 6th; Major F. McDowell is granted seven months from April 1st to Oct. 31st. Lieutenant-Colonel R. E. Molesworth has been permitted to retire from the service from March 6th. Major M. Boyle has been transferred from Meerut to Bareilly for duty in the station hospital.

VOLUNTEER CORPS.

Rifle: 1st Volunteer Battalion the Royal Sussex Regiment: Alfred Heathcote Copeman to be Surgeon-Lieutenant (dated Feb. 23rd, 1907). 2nd Volunteer Battalion the Royal Sussex Regiment: Surgeon-Captain John Elsdale Molson, from the 2nd Volunteer Battalion the Essex Regiment, to be Surgeon-Captain (dated Feb. 12th, 1907).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The Sussex and Kent Bearer Company: Lieutenant-Colonel J. Turtan (Brigade-Surgeon Lieutenant-Colonel, Senior Medical Officer, Sussex and Kent Volunteer Infantry Brigade) is granted the honorary rank of Colonel (dated Feb. 18th, 1907).

THE MILITIA SYSTEM.

Lord Wemyss sends us a letter protesting against Mr. Haldane's suggested alterations in our military system which Lord Wemyss thinks has satisfied all Statesmen and soldiers in the past, and is so well suited to our insular position. To substitute a so-called "Territorial Army," the letter continues, resting on nothing but hope, patriotic self-sacrifice, and speculation, will not be acquiesced in by responsible, and the same men who will insist on the Militia being left out of the War Minister's scheme. Our existing military system, Lord Wemyss goes on to say, if put in force, will fully satisfy all our military requirements without increase of cost.

The War Office has approved of the payment of bounties to Militia-men of the Royal Army Medical Corps, of two classes: (a) to those who attend the prescribed training, to be termed training bounty; (b) to those who do not attend the training, to be termed non-training bounty.

DEATHS IN THE SERVICES.

Surgeon-Colonel John McConaghey, I.M.S. (retired), at

residence, Exmouth (Devon), on March 25th, in his fifty-ninth year. The deceased officer, who graduated M.D., Ch. of the Royal University of Ireland in 1871, entered the Bengal department of the Indian Medical Service in March, 1872, and became surgeon-colonel in June, 1902. He retired in 1905 and took up his residence at Exmouth. Deputy Inspector-General W. J. Baird, R.N. (retired), lately, at Brighton. He was assistant surgeon of the *Leander* the Black Sea throughout the Crimean war and was "lent" various ships during the cholera epidemic of 1854; he landed attend to the wounded after the battle of Alma and served in the Naval Brigades at Eupatoria and before Sebastopol (Crimean and Turkish medal, Sebastopol clasp); served with a 1st Battalion of Royal Marines during the Chinese war 57-59 and was acting surgeon of the *Assistance* while used a hospital ship off Canton; present at the attack of the *Aras* near the White Blend Mountains, and at the capture of the bridge and village of Sheek-ling; was landed in medical charge of Marines during the attack on the Peiho forts, specially mentioned in despatches (China medal, *Aras* clasp); surgeon of the *Spitfire* in the West Indies during the epidemic of yellow fever, 1861; served in the *Aras* on the West Coast of Africa throughout the Ashantee war, 1873-74, was present at the destruction of Elmina and several villages on the coast, and medical officer of health at Cape Coast Castle (Ashantee medal).

ARMY SANITATION.

A correspondent writing in the *Times* of April 3rd says: "The statistics of mortality due to disease in the South African war, when compared with the losses more recently suffered by the Japanese from the same causes, demonstrated clearly that in the matter of sanitation there was in the British army considerable room for improvement. It is, therefore, satisfactory to find that the matter has been thoroughly taken in hand by the Army Council and a series of regulations issued, which should bear good fruit in our future campaigns. Under the direction of authority, a manual of sanitation has been prepared the contents of which the combatant officer will not only have to be acquainted with, but will have to submit to have his knowledge therein tested by examination. . . . On the outbreak of war there will be formed for service in the field a committee, consisting of a combatant field officer as president, with a field officer R.E. and a field officer R.A.M.C. as members. This committee will act under the orders of the general officer commanding-in-chief, and its duties will be to ascertain that sanitary appliances and materials of all kinds required for the army are forthcoming, and that an adequate reserve is maintained."

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The March number of this journal is a very good one. We would particularly call attention to the very interesting paper on Recent Researches into the Epidemiology of Malta Fever, by Colonel David Bruce, C.B., F.R.S., which was read before the Epidemiological Society on Feb. 15th last. It is a brief and, at the same time, exhaustive and practical exposition of all that is known in regard to this disease.

Revised regulations regarding the Indian Medical Service have now been issued.

Correspondence.

"And aliam partem."

THE WATER-SUPPLY OF CAIRO.

To the Editors of THE LANCET.

SIR,—My attention has been drawn to a letter in THE LANCET of Jan. 26th, p. 251, over the signature of Mr. John M. Robertson, M.P., which deals in part with the question of the Cairo water-supply and more particularly as regards the quality of the water supplied by the company to the town of Cairo. I much regret I had not the opportunity of meeting the writer during his short visit to this country, as I should have been only too happy to have given him all the information in my power as regards the Cairo water-supply and so have saved him the annoyance of finding he had been misinformed by someone who evidently has no knowledge of the existing state of affairs. The remarks he makes would, to a great extent, have been

correct three or four years ago, at which time the town was supplied with water taken direct from the Nile and filtered through sand filters, when the water was of poor quality as regards purity, especially during low Nile, and as regards clearness during the high Nile.

In 1903 the question of improving the supply was seriously taken in hand and experiments were made with a view to finding a pure source. The borings made by the water company showed that there existed an underground stream, and the tests which were made showed that underground water taken from deep bore holes was of great purity, both chemically and bacteriologically, and since then the whole supply has been remodelled and a completely new pumping station has been erected taking the water from deep bore wells, about 200 feet deep. The water is of exceptional purity and is always clear as crystal on its arrival at the surface. The whole of Cairo's drinking and domestic supply is now pumped from these wells, and Nile water is only used for road-watering and gardens. Even for this purpose the Nile water-supply will, however, be entirely superseded by well water in the course of about 12 months from date, when all the wells are completed. In his letter Mr. Robertson says that in the police schools the drinking water is very carefully filtered. This is possibly the case, but it is quite unnecessary and, as a matter of fact, I understand that the Government officials and experts contend that the water taken direct from the company's mains is so pure that it is only liable to be deteriorated by manipulation, such as filtering or boiling, unless great care is taken as to the cleaning of the vessels employed. Again, not only is the drinking water of the town not "officially recognised to be bad," but the water now being supplied has been officially accepted by the Government as of pure and excellent quality for domestic purposes. This can easily be proved by applying to the authorities. Again, it is not discoloured at high Nile, but is of the same clearness all the year round.

As you will see from the above statements, which can be verified by application to the local authorities, his letter gives quite a false impression of the existing state of the Cairo water-supply, and in fairness to my company I shall be much obliged if you will publish this letter in THE LANCET at the first opportunity.

I am, Sirs, yours faithfully,

ASTLEY P. FRIEND,
Manager, Cairo Water Company.

Cairo, March 21st, 1907.

GRADUATED LABOUR IN SANATORIUMS.

To the Editors of THE LANCET.

SIRS.—Naturally enough, when one reads remarks by Dr. T. D. Lister and Mr. O. H. Garland and Dr. M. S. Paterson,¹ one pays respectful attention to the conclusions come to by those well qualified to judge as to what really is the best thing to be done for the working-class consumptive. Recent work has been useful especially in clearing the subject of after-treatment of those preconceptions which had led to what Sir R. Douglas Powell calls "airy and unpractical advice." But one sees in one or two appreciations of such inquiries a certain note of enthusiasm as to the heavy nature of "the work which may be expected of public sanatorium patients, and with such beneficial results, according to these authors, that it seems a natural inference that the better off should surely be given a chance of participation as well. For it is, of course, a fact that at nearly all private sanatoriums anything in the nature of hard exercise is forbidden even for the most robust patients.

Now let me from experience gained by residence in two public and four private sanatoriums try to point out a reason or two why it is likely that the teaching of the latter as to exercise is the correct one so far as absolute therapeutic value goes. I think that they should give pause to the enthusiasms just noticed. In the first place, if the private patient is forbidden violent exercise it is with no idea of pleasing him, for the average upper middle-class patient, whether male or female, often wishes nothing so much as to continue some favourite game or sport. When he leaves—and his state then if his condition has allowed walking exercise is by no means "soft"—he often breaks rules as to exercise laid down for him and, as many sanatorium physicians seem to think, has to return as a more or less direct consequence of this, and I cannot

¹ THE LANCET, March 9th (p. 577) and 23rd (p. 525), 1907.

suppose that the suddenness of indulgence in unaccustomed exercise is the main factor in the breakdown. One has seen made the most cautious and persevering attempts to resume some favourite exercise with quite unsatisfactory results. Then there is this point, that the private sanatorium physician has a much harder therapeutic task and gains thereby a more detailed insight into treatment. If a man comes to one because he is not getting on as quickly as he would like (and the laity have remarkably exacting views as to this) in a hut in his grounds, it is very obviously more difficult to improve his condition than it is that of an artisan from the town. Couple with this the fact that it is very hard to judge of the effect of the treatment in phthisis, especially in improving cases. If a patient gets on well while digging unbroken ground it by no means follows that he would not do better with gentle uphill walking. Let us not forget the natural intermissions of the disease or the fact that the test of an alternation of current types of treatment is one which is never deliberately applied and which only occurs occasionally and by chance. The few instances of it which I have seen have not left me with much opinion of the absolute therapeutic value of the plan of working the consumptive sound. And as to the advisability of treating patients to the best advantage, let German statistics as to final results speak. Finally, the traditions of treatment are at private sanatoriums much longer; their physicians have fewer patients and can study them more closely, the patients themselves stop longer, and return (if they need to) much more frequently for further treatment. Opportunities of observation are therefore, on the whole, much greater, for two cases observed thoroughly and at length teach one more than a rapid succession of 20. If, then, with these advantages for judging private sanatoriums pronounce against hard exercise, is it wise to be enthusiastic over physical feats by consumptives, especially if one remember the poor physique they often show?

Now, in saying all this one does not wish in the least to ram one's conclusions down anyone's throat. It is easy enough to see that under our present unfortunate social conditions the great thing is to procure the main essentials of the treatment for as many as possible of the consumptive proletariat and to prolong the working life of each as much as one can. In presence of these two objects, especially of the latter, minor therapeutic details must go by the board. But in the hard task of striking the balance of considerations one will not be at all helped (to avoid the serious errors which beset one) by the state of lay opinion likely to be promoted by sentimental preconceptions which look on the treatment of early phthisis in the working classes as muscle culture plus straight talks against loafing. If such enthusiasms be not checked, sanatorium treatment of the working man may come for a time to suffer somewhat as (with due apologies to Professor Armstrong and the Heuristic method) primary education did at Dotheboys Hall.

I am, Sirs, yours faithfully,

W. C. RIVERS.

Crossley Sanatorium, Frodsham, March 23rd, 1907.

•IDIOPATHIC (MICROBIC) CYANOSIS.

To the Editors of THE LANCET.

SIRS,—Under ordinary circumstances the letter published in your issue of March 9th of Dr. Samuel West and Dr. T. Wood Clarke would not call for any notice, but as my friend Dr. Carstairs G. Douglas has made a real addition to our knowledge it would be unjust to him to pass by any attempt to belittle its value without protest. Put briefly, as the result of a long series of chemical and bacteriological observations on the patient whose case was fully described in our paper, Dr. Douglas found that the blood revealed the presence of methæmoglobin; that the blood, saliva, and feces contained nitrites; that the feces had no power of converting ox blood into methæmoglobin; that these facts raised the suspicion of a hæmatogenous formation of methæmoglobin; and that very careful investigations proved that the blood contained the bacillus coli or a very closely allied organism. With these results, as far as one case can go, we are absolutely satisfied. One positive observation is of more value than countless negative statements. We, desire, however, to obtain further opportunities of research in other patients. In this hope we made the statement: "It seems to us very desirable that these observations should not

be taken as final and if opportunity presents itself it will be repeated, especially those of a bacteriological nature." Surely Dr. West and Dr. Clarke are able to appreciate the difference between a desire for further observations on a more extended series of cases and a doubt the correctness of our results! In making this remark there is no intention to impugn the good faith of your correspondents. They simply appear to be victims of a tendency towards "terminological inexactitude." That this is probable the state of their minds may be gathered from the fact that in spite of their perusal of the Dutch literature on the subject, in which, with an imitation which may be regarded as the sincerest flattery, they have faithfully followed in the footsteps, they nevertheless make the statement that "suggest the term 'microbic cyanosis' to take the place of methæmoglobinæmia." We disclaim this intention inasmuch as methæmoglobinæmia is only one form of that complex known as cyanosis—true and false. The term idiopathic cyanosis, it may be added, is bad, not only because the word idiopathic is archaic, but because it has been applied to polycythæmia with splenomegaly, which has recently been thoroughly discussed.

In conclusion, let me add that although the remarks made by Dr. West and Dr. Clarke on the careful observations of Dr. Douglas certainly require correction, it was a matter of interest to me that a case of sulph-hæmoglobinæmia had been observed in this country. It is to be hoped that the authors will have further opportunities of investigating the condition so that they may be able to add something to the observations of Dr. A. A. Hijmans van der Bergh and Meijer-vro Gutterink.

I am, Sirs, yours faithfully,

Edinburgh, March 26th, 1907.

G. A. GIBSON.

* * We have retained the term "idiopathic" in the heading because former letters on the subject have borne this title—ED. L.

THE USE OF ALCOHOLIC BEVERAGES

To the Editors of THE LANCET.

SIRS,—It is difficult to fathom the objects of the prominent clamour on the alcohol question, which appears in your columns under this title, signed by 16 eminent members of the medical profession. It may be that they consider themselves the oracles of the medical profession whose opinion should be received with unreasoning credulity by the brethren. It may be very gratifying to each of them to say "I am Sir Oracle, and, when I open my lips, let no dog bark!" On the other hand, it may be that they just wish to let the public know that they are still alive and have not succumbed to the baneful influence of alcohol. Whatever the motive force I should like to remind them that we are now in the twentieth century and oracular statements are no value whatever. If their "statement represents the opinion of the leading clinical teachers as well as of the great majority of medical practitioners," then the necessity for their manifesto does not exist and it becomes a most blatant advertisement. If, on the other hand, it be the zeal for the public weal which forces them into print, surely it is their duty to let the medical profession and the public know the reasons for the faith which is in them. If they have got one scintilla of evidence in support of their statements by all means let us have it. I am pleased to say that I know the majority of the signatories (I have nothing to say against their temperance), and I know most of their writings, but I do not know one of them who has ever done any experimental work of any value either on the use or abuse of alcohol. It is true that Mr. Jonathan Hutchinson has shown that it is an excellent mouth wash in cases of operation on the tongue, but he did not produce any comparative evidence as to whether it was better or worse than many other antiseptic mouth washes.

In many cases it may be truly described as life preserving, owing to its power to sustain cardiac and nervous energy, while protecting the wasting nitrogenous tissue. Surely we are here on safe ground. I can scarcely think that 16 eminent men would make such a statement unless they knew what they were talking about. I have written on Alcoholic Asthenia and on the Therapeutic Uses of Alcohol, and I am extremely anxious to get reliable information as to its power to sustain cardiac and nervous energy. It won't do to tell me that they have seen severe cases of typhoid fever or pneumonia cured by brandy, because many

such cases get well in spite of treatment. I want some experimental evidence to prove this supposed tonic effect on the heart and nervous system. Among the signatories are no pharmacologists and one physiologist, and they ought to be able to settle this vexed question; for one of them it ought to be as simple to settle the physiological action of alcohol as of adrenalin.

I take a little alcohol myself when I have nothing better to do, because I like it, and I prescribe it as a sedative, an antispasmodic, and to paralyse the vaso-motor system, much in the same way as I order nitroglycerine. As a matter of fact, I have had two glasses of champagne while writing his letter in order to mollify my opinion of this pernicious manifesto which I candidly think savours strongly—not of champagne but—of impertinence in presuming to dictate to the medical profession as to the value of alcohol. To-day some shrewd business men asked, How many cases of Scotch whisky did this manifesto represent? I resented the suggestion, but the signatories have only got themselves to thank if the public put a commercial value on their document.

I am, Sirs, yours faithfully,
JAMES BARR.
Liverpool, March 30th, 1907.

To the Editors of THE LANCET.

SIRS,—The manifesto on the subject of alcohol published in your columns is gratifying in one sense, because it seems to show that temperance views are becoming so prevalent that a counterblast is thought to be necessary. But it is difficult to imagine what good it will do, or why medical men should thus champion the liquor interest. The first part of the statement is not a matter of much concern to the temperance party. It refers exclusively to the use of alcohol as a remedy in disease. Now, alcohol may be all that they say it is, and a great deal more, and yet be most undesirable as a daily beverage. In fact, the more powerful it is as a drug the more it should be avoided as an article of diet. On the other hand, the less one is accustomed to it the greater effect it will have when (if ever) it is required.

Those who have had the desire, the courage, and the opportunity to put the non-alcoholic treatment of disease to a sufficient test have, without known exception, been astonished at the success they have experienced. The results at the London Temperance Hospital, showing a mortality lower than that of most other general hospitals, would be impossible if alcohol were so necessary as the manifesto seems to imply. We maintain that whatever benefit can be derived from alcohol can be obtained by other methods or other drugs without the disadvantages which often accompany its use. Such a powerful drug as they allege it to be must necessarily be powerful for evil in certain cases, if for good in others. It has probably destroyed far more lives than it has saved. But if it is to be used as a drug it should be dispensed as such, in a pure form, in an exact dose for a definite time, and, if possible, without the patient's knowledge. Given thus it would do far less harm than it does now as usually prescribed, and temperance reformers would no more object to it than they do to the medicinal use of opium or arsenic.

But, leaving this side of the question, which is really a matter for medical discussion only, there is very little to worry about. We are only favoured with a statement that these gentlemen believe "that the universal belief of civilised mankind that the moderate use of alcoholic beverages is for adults usually beneficial is amply justified." As a matter of fact this belief is not universal, since millions believe alcohol to be injurious. Again, the belief of other millions that it is beneficial does not prove it to be so. For the great majority of those who take it take a good deal more than these gentlemen would admit to be "a moderate quantity" and yet believe that it does them good. They do not tell us what is the limit of moderate use. "Belief of benefit" would justify opium smoking, opium eating, and other harmful indulgences, with regard to which we may presume that all these gentlemen are total abstainers. These habits can only be justified by their results, and more evidence can be produced of the evil results of acquiring the alcohol habit (which is almost without exception "moderate" at first) than any newspaper would care to print. The matter has really been settled by the experience of those life assurance societies which insure abstainers and non-abstainers in separate departments. All such have found that the use of alcohol shortens the average duration of life. In the largest of these offices the experience covers about 40 years, has been of the same character

every year, and shows that of every 100 expected deaths of non-abstainers about 97 occur, while of every 100 of abstainers only 72 occur. If it had been the other way round we might have listened respectfully to the dicta of these leaders of the medical profession, but in the circumstances we think otherwise and consider ourselves amply justified in avoiding so potent a cause of disease and death. One wonders where the benefit comes in, for wherever any fair comparison of large bodies of men has been possible, whether as to health, work, endurance, or vitality, the advantage has been on the side of the abstainer. The evidence of the feelings is no criterion whatever, as the judgment is perverted. Any nation will be healthier, wealthier, and wiser by total abstinence and prohibition. Not that all will be on the same level, any more than in the case of individuals, because there are many other things affecting the result. At any rate, no sane doctor will assert that alcohol is necessary for healthy persons; being superfluous such a drug is not likely to be harmless.—I am, Sirs, yours faithfully,

J. J. RIDGE,
Honorary Secretary, British Medical Temperance Association.
Barnfield, March 30th, 1907.

To the Editors of THE LANCET.

SIRS,—It is with much gratification that I have read the courageous manifesto on the above subject in your last issue—courageous, because the profession appears to have been hypnotised into silence of late years by the temperance enthusiasts and to have lacked the courage to express publicly its views on the alcohol question. Very properly you point out the enormous importance to the profession and public alike of this epoch-making confession of faith on the part of a distinguished and representative body of scientists. The teetotal enthusiasts have held the field too long unchallenged by the acknowledged leaders of the profession and we may well hope that at last prejudice will have to give place to dispassionate and unprejudiced inquiry into the real facts of the case. Possibly under the influence of this sadly needed stimulant the profession will now shake off its lethargy and take some steps to repair the damage that it must always sustain in the eyes of the public when it leaves the apparent settlement of subjects of so great importance as that under consideration to the generally more pushful and enthusiastic minority.

I am, Sirs, yours faithfully,
A. H. COPEMAN, M.D. Dub., &c.
Brighton, March 30th, 1907.

To the Editors of THE LANCET.

SIRS,—Everyone must recognise the high standing in their profession of the gentlemen who sign the manifesto in favour of alcohol. The question of its therapeutic value is after all one which must be decided by medical men themselves, and doubtless there is a large number of the profession who hold that alcohol has such a value. The manifesto is so loosely worded that it does not appear on the face of it whether it is alcohol as a drug pure and simple to be administered by medical men and in the ordinary form of medicine that is intended or whether it is the prescription of ordinary alcoholic liquors that is recommended. If it is the latter the first thing that should be done is to fix some standard of quality. As a chemist I know the extremely various constituents of the different alcoholic liquors in common use and to give a general recommendation, such as that which appears over the names of these gentlemen, seems to me to be a departure from those accurate preparations of medicine which one imagines takes place in the dispensing room. No one can object to the medical man using alcohol in the preparation of a medicine just as he might use strychnine or opium, but everyone can very properly object to the medical man telling his patient to go to the wine merchant or the public house for his physic. The fact that alcohol may be of value in the abnormal conditions of the sick body does not in the least degree show that it has any value to the healthy body. The opinion is expressed that the majority of men can use alcoholic liquors in moderate quantity without harm. The manifesto would have been more convincing if something in the shape of data had been given in support of the opinion. Why not bring forward new information controverting the experience of the life assurance societies? Why not show that the marvellous decrease in the consumption of alcohol in the general hospitals and infirmaries during the past 30

years has been a mistake? Why not bring evidence to show that the alcoholic patient is a better one than the non-alcoholic? And why not give a scientific definition of what is meant by the abuse of alcohol?

I am, Sirs, yours faithfully,

April 2nd, 1907.

WALTER N. EDWARDS.

To the Editors of THE LANCET.

SIRS,—I observe that in THE LANCET of to-day's date a statement on alcohol is published to which my name has been attached without an addition which I had made a necessary condition to this being done.

The addition is that of the word *many* before the word "adults" in the second last paragraph, a paragraph which deals with the use of alcohol as an article of diet, as distinguished from its use as a therapeutic agent. I am informed that this word was actually inserted in the proof before authority was given to add my name to the statement.

The condition of my consent was therefore that the part of the paragraph referred to should read, "..... the moderate use of alcoholic beverages is, for '*many*' adults, usually beneficial," &c. I am, Sirs, yours faithfully,

Edinburgh, March 30th, 1907.

THOMAS R. FRASER.

* * The error was not made by us.—ED. L.

THE TRANSMISSION OF PLAGUE.

To the Editors of THE LANCET.

SIRS,—The report in the *Journal of Hygiene* from the Plague Commission in India has established very conclusively the fact that the flea is the most important factor in the transmission of plague from rat to man. This report confirms the theory first formulated by Simond and afterwards further elaborated and demonstrated by Elkington, Thompson, and Tidswell. Elkington's paper, published in the *Australasian Medical Gazette* for August, 1903, can be said to have first scientifically shown the transmission of plague from rat to rat by means of the flea. The reports on the Sydney outbreaks 1900-1904 are valuable records of a systematic research by epidemiological methods into the etiology of plague and constitute a most valuable collection of data in connexion with the disease. Elkington's paper and the Sydney reports can claim to have scientifically proved the connexion of rats and fleas with the recurrence of plague in man, and we think that these workers have not received that recognition that their results deserve.

Our object in writing this letter is to show that the splendid opportunity of studying outbreaks of plague on a large scale in a European community has not been lost and that scientific work of a high character in connexion with the disease has been carried out in Australia. We would also like to point out that while imperial honours, as is only right, have frequently been conferred on the medical officers of the various smaller colonies, those of the great self-governing States have hitherto been almost entirely ignored, though much valuable work, often of world-wide importance, has been done by such officers.

In conclusion, it is hardly necessary for us to say that, working as we do in a far-distant part of the Australian Commonwealth, we have no direct connexion with the three investigators above mentioned, though profiting much by their researches, and as a natural delicacy has prevented them from laying claim to the credit which is their due, we who are able to estimate the merit of their work have considered it right to take this opportunity of making it known.

We remain, Sirs, yours faithfully,

T. L. ANDERSON, M.D. Melb.,

Special Medical Officer, Fremantle, W.A.

J. BURTON OLELAND, M.D. Syd.,

Government Pathologist, Perth, W.A.

Public Health Department, Central Board of Health,
Perth, W.A., Feb. 23rd, 1907.

THE PRODUCTION OF THE HOT CROSS BUN.

To the Editors of THE LANCET.

SIRS,—Attention has been called in the lay press this Easter tide to the conditions of production of hot cross buns. One's first inclination is to attribute the outcry to the requirements of journalism during recess, but there can be

no doubt that there is serious reason for the protests which have appeared. I have been told by an absolutely reliable and highly expert authority that in 80 per cent. of bake houses the additional work entailed is well nigh intolerable. The custom of the trade is on the Wednesday in Holy Week to work all night baking bread for Thursday and Friday and then, without rest, to begin making the hot cross buns for Friday. This is done, of course, in batches, each batch requiring the nicest attention and close watching. The temperature of the bakehouses averages 90° F. and the atmosphere is rendered additionally trying by the steam from the buns and the fumes of the furnace ash. Often the bakers work from 30 to 36 hours without sleep immediately after the extra bread-making entailed by Good Friday, and it is no unusual thing for the men to drop off to sleep whilst at work, in spite of every effort to keep awake. During this period, too, the shop assistants have to be on duty to remove the buns from the baking sheets, to store them in the shop or place them in bags for delivery, but of course this duty cannot be compared to the strenuous work of the bakehouse. It requires little imagination to foresee the state of exhaustion of the regular and journeyman baker when Good Friday arrives, after so many hours of labour at such a temperature, labour, too, demanding the most unremitting care and almost the master-touch. Though Cross has replaced Crescent the hot cross bun is the direct descendant of the cakes offered to the Queen of Heaven and comes originally from the Phœnician worship of Astoreth. Still, that is no reason why in the twentieth century we should encourage our good friends the bakers, even voluntarily, "to pass their sons through the fire" to the Moloch of fashion.—I am, Sirs, yours faithfully,

J. ALISON GLOVER, M.D. Cantab., D.P.H.

Highbury, March 31st, 1907.

THE UNIVERSITY OF LONDON SENATORIAL ELECTION.

To the Editors of THE LANCET.

SIRS,—I must take exception to the hysterical heading of Dr. E. H. Starling's letter in the *British Medical Journal* of March 30th. There is no "threatened disintegration of the University of London" but there is a strong desire on the part of many of its graduates that the radical changes initiated since its reconstitution should cease in order that its high position, obtained by a steady process of evolution during a long term of years, may not be lost. It is to give these graduates an opportunity of expressing their desire I have consented to nomination for the vacancy on the Senate in May next. We recognise in Sir Thomas Barlow one of the parents of the concentration scheme at South Kensington, which now stands condemned by the vote of the Medical Faculty on March 19th, when Dr. H. A. Caley and Dr. L. E. Hill defeated Dr. J. R. Bradford and Dr. J. K. Fowler, the former representatives on the Senate. Dr. Starling states, "The suggestion as to the lowering of the standard of the degrees is devoid of foundation." How does he reconcile this statement with the following official statistics? At the intermediate medical examinations for the quinquennial period 1892 to 1896 45.2 per cent. of the candidates were rejected; from 1897 to 1901 40 per cent.; and from 1902 to 1906 30 per cent. At the 1906 examinations only 27.2 per cent. failed to pass. Then, again, at the M.D. examinations. In 1906 only eight candidates in 60 failed and in December, 1905, but three in 20 were rejected, whereas in July of that year 12 failed out of 31. In July, 1906, 14 presented themselves in medicine and 13 passed, and last December 17 entered and 15 passed. In midwifery and diseases of women six presented themselves in December, 1906, and five passed; and in July of that year 11 entered and ten passed.

I am, Sirs, yours faithfully,

London, April 1st, 1907. ERNEST W. WHITE.

THE ALLEGED INCREASE OF INSANITY

To the Editors of THE LANCET.

SIRS,—In Dr. G. H. Savage's Lumleian lecture which is published in THE LANCET of March 30th, p. 855, it is stated in connexion with the subject of general paralysis of the insane: "In the last report general paralysis is stated to be increasing more rapidly in Edinburgh than in Glasgow. This seems hard to explain, but I am inclined to think that more careful clinical examination in Edinburgh may account

for the fact." Dr. Savage is, of course, quite entitled to think as he pleases, but when he puts his thought into speech or print and throws what is apparently a slur on the methods of clinical examination in Glasgow he should give reasons to show what has led to his belief. Is it not the fact that the recognition of general paralysis is more difficult than at first sight appears? that, in other words, more careful clinical examination is required to say what is not general paralysis than what is? Is Dr. Savage prepared to point out any pathognomonic sign of general paralysis? Does he believe that the bacillus paralyticus of Ford-Robertson is the cause of the disease and the presence of that organism pathognomonic?

As one who has taken a great practical interest in the study of this particular question, I still am of opinion that there is no pathognomonic sign of general paralysis of the insane and that it is a disease which is often liable to be confounded with cases of cerebral syphilis, saturnine poisoning, psychasthenic, alcoholic, and other forms of the insanities. In this particular asylum, which is the largest in Scotland, and one of the number serving Glasgow district, the method of examining all newly admitted cases is such that no patient is allowed out of bed until an accurate report of his bodily and mental condition has been made. When the admitting physician is in any difficulty it is invariably the custom for him to consult with the other medical officers, all of whom have had varied experience in general hospitals before they became asylum physicians. I will be glad to hear through you on what grounds, if any, Dr. Savage has based his belief regarding the inferior clinical methods pursued at Glasgow as compared with Edinburgh.

I am, Sirs, yours faithfully,

HAMILTON C. MARR.

Medical Superintendent, Glasgow District Asylum,
March 30th, 1907. Woodlee, Leith.

THE BIRMINGHAM GENERAL HOSPITAL.

To the Editors of THE LANCET.

SIRS,—Your Birmingham correspondent has either been misinformed or has expressed himself in a misleading manner when he writes that at the General Hospital "steps are being taken to form a plan for the treatment of the more simple cases as dispensary or club patients," which might be taken to mean that the hospital is contemplating the establishment of a dependent dispensary or club. No such proposal has been made but a report of a committee is under consideration which proposes to get rid of that class of patient which can be adequately treated by existing dispensaries or clubs, after rendering these applicants merely such first aid as may be urgently required. I am sending you a marked copy of the *Birmingham Daily Post*, which contains the speech of the chairman of the board upon which, presumably, your correspondent founded his remarks.

I am, Sirs, yours faithfully,

ROBERT SAUNDY.

March 25th, 1907.

THE POLLUTION OF WATER-COURSES.

To the Editors of THE LANCET.

SIRS,—Some of your readers may be able to advise me in the following circumstances. I am resident on my own property on the banks of the river Blackwater, more than one mile below the town of Witham, Essex. This town has recently provided for itself a new water-supply, a new railway station is in course of erection, numerous houses are being built, and, though our rates vie with those of Poplar, the beautiful surrounding country renders it a desirable place of residence. A system of sewerage, with an adequate farm, seems to be efficiently worked; but in the town itself is a hell-mongery with a number of tanks, in which hides and animals' feet are soaked with lime. The contents of these tanks are discharged by simply lifting a sluice every week into the Braintree stream, an affluent of the Blackwater. Two larger tanks are discharged at night, for very obvious reasons. This mass of unspeakable filth passes through a portion of the town, carrying with it quantities of fish, dead and dying. Even at my property the smell is at times abominable; and the agitation of the water in any way produces a mass of seething foam like soap-suds. As the owner of one mile of river bank I have always been ready to permit the free use of it by anglers, who a few years ago called it the best piece of

roach fishing in England; but as I write numerous fine fish lie dead near my garden, and the anglers' occupation will soon be gone.

I have seen pedestrians drink from the river in front of my house, so clear is it at times, and yet the Witham folks wonder why they have cases of diphtheria in the town and why there have been outbreaks of typhoid fever.

I am, Sirs, yours faithfully,

G. W. GRAHAM, M.D. Lond., M.R.C.P. Lond.

Witham, Essex, March 30th, 1907.

THE RIDEAL-WALKER COEFFICIENT.

To the Editors of THE LANCET.

SIRS,—We ask a few lines of your space to state that it has been found necessary to substitute the term "Rideal-Walker Coefficient" for that originally introduced by us—viz., "Carboic Acid Coefficient."

The necessity for adhering strictly to the *modus operandi* prescribed in our test has been strongly emphasised in the last two or three years since we published our method, and that this caution is necessary is shown by the fact that many disinfectants are advertised as having a certain "carboic acid coefficient" when the figure given has obviously been obtained by methods having little or nothing in common with the test as described in the journal of the Royal Sanitary Institute,¹ thus introducing confusion and robbing the term of the value it originally possessed. Much of the success of our method is due to the fact that we provide for the postulant and control being tested not only at the same time but at the same time. As the resistance of the test organism, even when subcultured from the same stock, varies from day to day it is unfair and misleading to offer a "coefficient" obtained by testing the postulant on one occasion and the phenol control on another. Similarly, when the "thread," "garnet," or any modification of the Rideal-Walker test has been employed information that such a method has been used should accompany the "coefficient" and the latter should certainly never be advertised without this information.

It is therefore most desirable that bacteriologists when reporting on the germicidal value of a disinfectant should specify precisely the method employed. Great discredit has been thrown on the Rideal-Walker test by the publication of results obtained by the worker modifying the technique—sometimes to a very large extent—without notifying the modification, and many of the discrepancies referred to by critics are directly attributable to this fact.

We are, Sirs, yours faithfully,

SAMUEL RIDEAL,

J. T. AINSLIE WALKER.

April 2nd, 1907.

MEDICAL TREATMENT OF SCHOOL CHILDREN.

To the Editors of THE LANCET.

SIRS,—Mr. R. W. Rea has introduced into Parliament a Bill "to make provision for vacation schools and for the medical inspection and treatment of school children." This Bill has passed its second reading and was referred to the Standing Committee on Trade. There it was said that "existing organisations, whether philanthropic or charitable, should be made use of as far as possible and thus save the ratepayers' pockets." It was pointed out (*à propos* to the organisation of games) that in the London schools alone there were 2600 departments, that a responsible person could hardly be paid less than £100 a year, and thus an expense of £250,000 a year would be incurred; a clause was therefore added to the effect that the local education authority may encourage and assist voluntary agencies and associate with itself their representatives. The Government itself has introduced a Bill which contains practically Mr. Rea's Bill with the added clause. The Bills, therefore, include medical treatment. Mr. Jowett, M.P., would go further and wishes that the children should not only be treated but cured. He asked the Minister for Education what machinery by inspection or otherwise there was to be for insuring efficiency in the medical measures carried out; Mr. McKenna replied that the matter was receiving his careful attention; it would be well if it also received the careful attention of the medical profession.

When a charitable organisation is used to save the pockets

of the ratepayers the ratepayers become the objects of the charity; many ratepayers are rich people who have no wish to be the objects of charity; others, again, are corporations. In matters medical the voluntary organisations are the voluntary hospitals; at present the objects of their charity are not the ratepayers but the sick poor. The passing of these Bills might, however, legalise or enforce the change. The association of the education committees with the voluntary hospitals may so reduce the income of the profession as to injure not only it but the public for whom it exists. In your columns last week was an advertisement by an ophthalmic hospital for a refraction assistant. He is to be paid £25 a year and his lunch for two mornings a week. If we assume that the work will take three-quarters of his day and allow £15 for the annual value of lunch the whole time of a refraction assistant is worth £115 a year; the governors of the hospital might possibly say that they are not underpaying our profession because the remuneration is only intended as an honorarium, the real reward being the experience which will enable the assistant in a year or so to earn guineas in private practice; but the elementary schools are open to all classes of the community and in fact contain 96 per cent. of the children; thus the remaining 4 per cent. are to maintain the refractionists which one hospital alone is to turn out at the rate of three a year; moreover, if the assistant is only to hold his post till he has learnt his work 96 per cent. of the children will be treated by an imperfectly trained practitioner and there will be much need for Mr. Jowett's inspection. If the assistance education committees give to voluntary hospitals is to be of a pecuniary character in many cases a contract will be made, but with hospitals which already charge out-patients it will only be necessary to send round a batch of children in charge of a teacher provided with the proper amount of pence. If, in addition to refraction, throat, ear, and tubercle assistants are appointed, and to find and sort the defective children there be appointed a lady school medical officer, at a salary for her whole time of, as has been proposed, £100 a year, without lunch, without annual increments, and without pension, then the income of the profession will be reduced and very possibly its usefulness curtailed.

Sir John Gorat in his "Children of the Nation" says: "Every municipality has under the Public Health Acts, as the sanitary authority, the most ample and unrestricted power to provide hospitals for the sick, for the use of the inhabitants of their district. They can either build them or rent them or enter into a contract with the managers of an existing hospital to pay for patients sent by the municipality." If this is so all that is necessary is to empower the Central Government to compel unwilling local authorities to exercise their dormant powers. It is said that this Government Bill contains only non-contentious clauses; so far as medical inspection is concerned this may be correct; the subject has already been inquired into by a committee and no wide differences of opinion brought to light; but with respect to medical treatment at the cost of the rates or by a private practitioner or by a voluntary hospital the clause is only non-contentious because its purport is not realised; the Committee on Medical Inspection just referred to very properly abstained from expressing any opinion on medical treatment; the Minister responsible says he does not know what the cost would be; no one knows that the cost would not exceed the highest possible yield of the rates. Further, the principle of the clause threatens the independent existence of the medical profession and is based on a socialism that has yet to be shown to be workable. The best course, as it seems to me, would be to pass medical inspection and to refer medical treatment to a Royal Commission.

I am, Sirs, yours faithfully,
J. S.

March 27th, 1907.

MEDICAL PRACTITIONERS AND THE MIDWIVES ACT.—At a meeting of medical practitioners of Deptford, Greenwich, and Charlton, held at the Parochial Hall, East Greenwich, on March 28th, it was unanimously resolved that in the event of assistance being required by a midwife under the recent Act, the nearest available practitioner ought to be called, and that the fee should be paid by the guardians on a joint certificate, signed by the medical man and the midwife, stating the reasons why such assistance was necessary. It was further resolved that copies of this resolution should be sent to the guardians and Mr. Hamilton Benn and Lord Alexander Thynne.

THE DISPENSARY QUESTION AT COVENTRY.

(FROM A CORRESPONDENT.)

COVENTRY Provident Dispensary and its relations with the medical staff of the institution is not a new subject in the professional journals¹; but now that within the past fortnight the resignations of five out of the seven medical men have been accepted a new turn has been given to affairs; and seeing that the lay committee must at once endeavour to fill the vacancies which will actually exist in June the profession in general will watch with curiosity whether the committee is successful in its efforts.

It is some dozen years since public attention began to be called to the conditions under which the Coventry Dispensary was conducted and from time to time some small reforms were carried out, under pressure from the medical staff, acted upon by professional men outside. In April last year the Coventry division of the British Medical Association passed a resolution deprecating connexion with any provident dispensary managed on lines fundamentally different to those laid down by the Association, and following on this action the dispensary staff addressed a letter to the committee asking for large alterations—a wage-limit for membership; every medical man in the district to be allowed to act for the dispensary; and the committee of management to consist of the whole staff, the chairman of the Coventry division of the British Medical Association, and an equal number of lay members. There were also requirements as to disposal of income and the collection of weekly payments of members. Briefly, it was proposed to make fundamental changes in the administration and such as would give the profession a controlling power. The committee expressed its willingness to meet the staff on some points, but the concessions were "so valueless," wrote Dr. W. J. Pickup, Dr. T. A. Hird, Dr. W. W. Fenton, and Mr. W. E. Heal, "that it is impossible for us to accept them." These concessions were not to become operative till the dispensary was removed from the professional "black list."

On March 9th Dr. Pickup, Dr. Hird, Dr. Fenton, Mr. Heal, and Mr. A. J. Arch tendered their resignations, leaving Mr. D. I. McVeagh and Dr. J. A. London in office without their positions being respectively disturbed. On the 21st the committee called the members of the dispensary together and St. Mary's Hall was crowded. A long statement, prepared by the committee, was read and it was stated that in the three years ending March of last year Dr. Pickup received a total of £1653 from the dispensary by way of fees; Dr. Hird, £2435; Dr. Fenton, £1322; and Mr. Heal, £853. The great difficulty in bringing about an amicable settlement (the committee further stated) was the uncertainty as to proposals being regarded as likely to last for any length of time. They could not yield upon the points in dispute without sacrificing the independence of the institution and giving away the interests of the members. One of the demands of the medical men was that they should have the right to sell their dispensary practices. The committee says that there is nothing in the fundamental principles of the British Medical Association to warrant this demand. The answer made on behalf of the five medical men to the point is that the Association rules governing contract work simply relate to the lines upon which medical men should conduct these practices. Such practices are their own to do what they like with them and there was, therefore, no need for rules to be drawn up that they should nominate their successors or sell their practices. But the claim of the dispensary committee was that the practices were not the medical men's but the committee's, and the latter claimed the right to give the medical men three months' notice and give other men the practices. The staff say they have an asset in the practices, for one reason because they have to make sacrifices in working them—e.g., they cannot carry on private clubs nor hold any other public appointments.

So the dispute remains, and in accordance with the tenor of the resolution passed at the meeting the medical staff's resignations have been accepted. Matters will probably rest much as they now are for another few weeks, during which Dr. Pickup, Dr. Hird, Dr. Fenton, Mr. Heal, and Mr. Arch will decide in what form they will

¹ Vide THE LANCET, June 12th (p. 1637) and 19th (p. 1703), 1897, and Nov. 4th (p. 1250), 1899.

continue contract practice and the dispensary committee will be making efforts to fill the impending vacancies, though whether it will need five new men is doubtful, for if the seceding medical men carry with them any large number of present patients the future dispensary staff will not need to consist of as many medical men as it has hitherto. There will still be a medical service under some or all of the five practitioners in one form or another. It will be remembered that one of the recommendations of the Medico-Political Committee's report of July, 1905, was that contract practice should be in the hands of some organised local body representative of the profession; that it should be open to every practitioner in the district to take part in the work should he desire to do so and conform to the regulations of the profession; that the details of administration should be under the direct control of a purely medical committee representing both those that do and those that do not take part in contract work. It is also insisted in the report "that to render professional co-operation as complete as possible the divisions should endeavour to secure the inclusion of every practitioner in their membership."

While there is already a public medical service in Coventry—started several years ago, when dispensary matters were then being acutely discussed—it is the intention of the medical men who are leaving the dispensary to set up a service of their own. It is also understood that the rules under which the work is to be carried on will be submitted to the Coventry division of the British Medical Association, but if does not seem to be contemplated either to form one service "open to every practitioner in the district to take part in the work" or to place the control in the hands of any local body representative of the profession. It is worth while to mention that there are already in Coventry three or four private medical clubs, and the new service will apparently be an extension of this form of contract practice.

The general conditions under which the seceding medical staff will work after leaving the dispensary have been made known in a joint circular which has been issued to those members of the dispensary whom these particular members of the medical staff have been in the habit of attending. They propose to charge the same fees as are charged at the dispensary; each medical man will see patients at his own house, and in order to meet the convenience of members and to distribute the work more evenly they propose to see patients both morning and afternoon; while with regard to any clubs attached to the dispensary which might wish to continue under their care, they propose to see members every evening instead of as at present one evening per week. A house is being fitted up as a dispensary. These conditions should make for a better state of things than that which has prevailed in the institution. The medical men now receive 2s. 2d. per patient per year, and it will be at once apparent as a matter of arithmetic that to earn the larger sums stated above several thousand patients must be dealt with in the course of a single year. No official statement is made as to the number of members in the dispensary, but it is known to be, including club patients, well up to 22,000. Such a number takes out a large slice of the population to be estimated when a medical man may be contemplating buying a practice or starting a practice in Coventry. Moreover, it may be assumed that the club men are followed to their own medical attendants by members of their respective families.

There was much discussion at the dispensary meeting on the question whether the future dispensary staff would be able to secure consultations, keeping in mind the circumstances in which they will have gone to Coventry. It would seem that the dispensary committee is expecting to join the Friendly Societies Medical Association, and a speaker at the meeting stated that he had been informed by the secretary of the association that there was no difficulty now in obtaining consultations. With regard to the Midlands this is not so certain, for it is no secret that all through the efforts made to obtain reform in Coventry the co-operation of the Birmingham branch has been assured. It has been given out with an air of authority that the dispensary committee can secure the services of a sufficient number of medical men to carry on the work after the departure of Dr. Pickup, Dr. Hird, Dr. Fenton, Mr. Heal, and Mr. Arch. Any practitioner who contemplates taking such appointment will do well to become conversant with the facts of the case. The struggle going on is being watched with keen interest by the profession at large on the one hand, and by dispensary committees up and down the country on the other.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Local Hospital Reports.

At or about this period of the year the annual reports of the majority of the hospitals are being presented and it is the time when we can estimate most readily the amount of work that the hospitals are doing, its type, its cost, and the support which is being given by the general public. In previous communications I have drawn attention to the fact that continually increasing work must of necessity be associated with the continued increase of population, but unfortunately it is not associated with a corresponding increase of monetary support. The General Hospital is perhaps an exception, its income for the past year exceeding the expenditure, but even in its case the ominous statement was made that the amount received from subscriptions had fallen off. The reports of the Queen's Hospital, the Hospital for Sick Children, the Birmingham and Midlands Women's Hospital, and the Birmingham Skin Hospital all record increased work, excess of expenditure over income, and either diminution or inadequate increase in the amount of subscriptions. It would scarcely serve any good purpose at the present moment to analyse the causes which produce these results, but those more particularly concerned should note that the unsatisfactory position of subscriptions to hospitals is coincident with what is spoken of as a prosperous period. To pass to more detail, the General Hospital and the Hospital for Sick Children have been considered on previous occasions. The Queen's Hospital reports an income of £10,584, or £475 less than in the previous year, and an expenditure of £11,755. During the year 2307 in-patients and 34,213 out-patients were treated, making a total of 36,520, or 3235 more than in the preceding 12 months. The increase in the number of patients is very considerable and is no doubt partly due to the new service of trams which takes patients to the doors of the hospital. A very satisfactory point in the report of this hospital is contained in the statement that in spite of the great increase of cases the expenditure has been slightly reduced. Progress is being made in connexion with the erection of new buildings. For this purpose a sum of £22,124 has been promised, of which £17,177 have already been paid into the bank. It is found, however, that the greatly increasing pressure in the out-patient department will necessitate an extension of the scheme and an additional sum of £12,000 will be required. The record of the Women's Hospital, except so far as finances are concerned, is particularly good. Both in-patients and out-patients have increased in numbers; 728 operations were performed, or 238 more than in 1905, and amongst these were 391 cases of abdominal section, with an extremely low death-rate of 2.3 per cent. It is true that the death-rate is not quite so low as in the previous year, when it was 2.1 per cent., but it is very satisfactory and is far below the average. In the Skin Hospital the in-patients increased by 16 and the out-patients by 272, as compared with 1905. The expenditure was £173 more than in 1905 and the receipts were £37 less, the total excess of expenditure over income amounting to £235.

Proposed Sanatorium for Consumptives.

Two years ago the council instructed the health committee to consider the sanatorium treatment of pulmonary tuberculosis. The committee proceeded carefully and thoroughly into the matter; it has obtained a large amount of information and at an early meeting of the council it will recommend that active steps should be taken. The medical officer of health, Dr. J. Robertson, strongly urges that a municipal sanatorium should be provided for the double purpose of dealing with curable cases and educating the people with regard to the proper means of fighting the disease, and the committee will propose that the council should purchase an estate on the Leckhampton Hill, about three and a half miles from Cheltenham. The mansion which stands on the estate could be utilised for administrative purposes, the grounds are admirably situated, they lie 600 feet above sea level, and there is plenty of room for the erection of the necessary buildings. The estate includes not only the mansion and the surrounding 58 acres of ground but also a farm of 320 acres with a farmhouse and 12 workmen's cottages. The mansion and the surrounding 58 acres

would have been quite sufficient for the purpose in view, but it cannot be obtained alone, for the estate is to be sold as it stands. Possibly if the council determines to buy it it may prove eventually to be a good investment, though, the present return from the rental of the farm and cottages is not great.

An Instructive Exhibition.

In the National Trades Exhibition which is being held in the Bingley Hall a most instructive section is devoted to "sweated industries." The work is monotonous and sufficiently depressing as it is done in the comparatively large space devoted to it at the exhibition, but that is not its chief defect, for looked at from a medical point of view it suggests great possibilities of danger and disaster, when it is remembered that much of the work is done in the workers' own homes amidst what must be in many cases most insanitary surroundings. It matters not whether we who buy pay much or little, the danger is there, though it may be greater the less we pay; but how many of us ever inquire whether the things we use were made in a healthy workroom or amidst such surroundings as a worker can secure who can only earn from 16s. to 18s. a week after working from 10 to 12 hours a day? The danger of infection with diseases we would avoid lies in the clothes we and our wives and children wear, the hooks, the safety pin, and buttons with which we fasten the clothes; in our artificial flowers, in our umbrella bands, in the embroidery on ladies' slippers, in the pill boxes we sometimes use, in the metal boxes which are more frequently in our hands, and even the Bibles we read, for their pages may have been folded under insanitary conditions, at the rate of 1d. per 100 sheets. Looked at from a purely sanitary point of view it is quite clear that manufacturers should not be allowed to give out work to be done in the workers' homes, and we must be prepared to face the fact that the stopping of such home-done work will make still harder the lot of some of those whose lives are at present almost unbearable and that we shall have to pay a little more for our necessities.

Reafforestation.

The transformation of the ugly heaps of refuse and pit mounds which abound around Birmingham into tree-clad country is proceeding not very rapidly perhaps but still steadily and satisfactorily, and no one can doubt that the final result will be an increase in the physical and mental health of the surrounding population. The experimental stage has been passed and the Midland Reafforestation Society is continually gaining adherents. On March 23rd at a public meeting held in the Wolverhampton town hall a new local branch was formed, one of its objects being the reclamation of the at present hideous ground which lies between Wolverhampton and Birmingham. Speaking at the meeting Sir Oliver Lodge gave some interesting details of the work. He stated that the cost of planting was £5 per acre for large plots and a little more for small areas, and he pointed out that the association was not seeking for profit and could not expect any for 15 years, but after 20 years the profit on the planting would probably amount to 2½ per cent. compound interest from the time of planting. The long time which must elapse before any return is gained is one of the main difficulties which stands in the way of the association and retards most useful work.

April 2nd.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Consumption Hospital: Tuberculin in Pulmonary Tuberculosis.

THE annual report of the Liverpool Consumption Hospital contains the announcement that "the committee, acting on the advice of their medical board, have thought it their duty to equip a laboratory and appoint a pathologist in order that the patients of the institution may reap the full advantage of recent advances in medical science. These advances point to the possibility of estimating from hour to hour the patient's resistance to the tubercle bacillus and of raising or lowering this resistance at will." The medical board, in its report, states that there are at present 30 patients under treatment and that the results so far are distinctly encouraging. It emphasises the fact that the treatment is still in the experimental stage but adds, "Should the treatment ultimately prove successful, it must undoubtedly

revolutionise the treatment of consumption among the working class, as it would appear to render it possible to treat a working man without depriving his family of their livelihood." Whether this attempt of the Liverpool Consumption Hospital be successful or not, it will be agreed that it should be made and it is right to wish it every success. The benefit derived from the use of tuberculin in cases of surgical tuberculosis being well known, why should it not also succeed in pulmonary phthisis? So far only partial success has attended its administration. The question arises, Is a different tuberculin required in the latter case, or has it yet to be learnt when to give it and in what doses? These facts can only be obtained by experience, slowly acquired with the help of a well-equipped laboratory. Certainly no effort should be spared to acquire that knowledge. Anyone with practical experience of the treatment of pulmonary tuberculosis amongst the poorer classes must admit that in their case the sanatorium treatment is not satisfactory, for a simple reason that, to them, it becomes impossible. A patient cannot be maintained in a sanatorium for less than 30s. a week or thereabouts. This amount must be low by the individual or by philanthropic agency. Obviously only a favoured few can find so much. Nor is this a whilst under treatment in the sanatorium the patient ear nothing and his family is compelled to go "on the parish." The knowledge of this dread fact deters many from going to the sanatorium until the last possible moment, when it becomes too late. Whatever its absolute merits may consist in, the sanatorium is practically closed to the poorer classes for purely economic reasons. The solution of the problem may possibly be found in the use of some such vaccine as tuberculin.

Mr. Arthur J. Evans.

Mr. Arthur Evans, the medical officer of the steamer *Port Kingston*, who distinguished himself in connexion with the Jamaican disaster, had the honour of being presented to the Prince and Princess of Wales at Knowsley by the Earl of Derby on the evening of the Grand National day. His Royal Highness warmly congratulated Mr. Evans on his arduous and humane work during the great disaster and spent a long time in inquiring of him the particulars of the catastrophe. Mr. Evans was also introduced to Lord Roberts, who recognised in him a member of the medical staff who served with him in the South African war.

April 2nd.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Typhoid Fever at Pontypool.

DURING the epidemic of typhoid fever which prevailed in Pontypool and the adjoining districts in the autumn of 1906 there occurred in Pontypool 169 cases and 12 terminated fatally. Commenting upon the outbreak in his annual report the medical officer of health (Mr. S. B. Mason) states that he found that the water company had been supplying water from a well the water of which was alleged to be impure and that the iron pipes leading from the well were laid alongside a brook which received the sewage from several houses and from a slaughter-house. In flood time the pipes were covered with water, so that there was the possibility of secondary pollution. The Pontypool district council is advised by its medical officer of health to provide an isolation hospital, a steam disinfecter, a dust destructor, and a public slaughter-house, and to consider the desirability of providing a common lodging-house and efficient sewerage for the district.

Compensation for Tuberculous Cattle purchased by Butchers.

Some four years ago a form of mutual insurance was established in the Cardiff and Newport districts for the payment of compensation to butchers who at the public auctions purchased cattle which were subsequently found to be tuberculous and were destroyed. The contributions to the fund by the farmers, auctioneers, and butchers were very small and although only two-thirds of the value of the animal was paid to the purchaser the scheme has been found to work well. It is to be regretted therefore that the Newport butchers are desirous of withdrawing from the fund. They assert, as a reason for

value of a tuberculous carcass should be paid to the purchaser by the State.

The Sewerage of Bath.

The Somerset county council has for some time been endeavouring to persuade the corporation of Bath and the sanitary authorities of the adjoining districts to take steps to purify the sewage which at present is discharged untreated into the river Avon. The county council has been extremely patient and has postponed enforcing its powers under the Rivers Pollution Acts in the expectation that voluntary action would be taken by the sanitary authorities concerned. As this expectation was not fulfilled the county council decided to take definite action with the result that the corporation of Bath has at length admitted that the time has arrived when the future disposal of the city sewage should be dealt with. It is not, however, in any hurry to give practical effect to this opinion, and having regard to the enormous cost involved in carrying out any sewerage scheme, and to the uncertainty existing as to the best system to be adopted, it requests the county council to defer taking proceedings until the report of the Commission now sitting has been presented to Parliament. Some 12 years ago a very comprehensive scheme was considered by the corporation and was only abandoned on account of the great cost involved. Since then suburban Bath has increased to a considerable extent and many of the suburbs are outside the city boundaries. It would appear, therefore, desirable that a joint scheme should now be promoted by the Bath corporation and the neighbouring authorities.

Bristol Eye Hospital.

The ninety-sixth annual meeting of the subscribers of the Bristol Eye Hospital was held on March 27th under the presidency of the high sheriff (Mr. H. Daniel). The medical report stated that during 1906 the in-patients admitted numbered 454 and 6805 out-patients were treated, compared with 500 in-patients and 6250 out-patients in 1905. The financial statement showed that there was an unfavourable balance of £259.

April 2nd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Proposed Testimonial to Professor J. G. McKendrick.

On the initiative of the business committee of the general council of the University of Glasgow it has been resolved to take steps to recognise in some appropriate manner, on the occasion of his retirement from the chair of physiology in the University of Glasgow, the long and distinguished services of Professor J. G. McKendrick as a scientific and public man and to give expression to the personal esteem in which he is held by his many friends throughout the country. The form of recognition will to some extent depend on the amount subscribed, but it is thought that the first object to be aimed at should be the presentation to Professor McKendrick of his portrait or bust by an eminent artist. It is understood that it would be specially gratifying to him if in addition it were possible to furnish, or assist in furnishing, a laboratory for experimental psychology in the new physiological buildings of the University of Glasgow. Experimental psychology, which deals with the practical examination of mental processes, lies between physiology and psychology and has always attracted a large part of Professor McKendrick's time and attention. So convinced is he of its importance that at his suggestion two rooms have been set apart for this subject in the new University buildings. Both in America and on the continent, and more recently in most of the universities at home, experimental psychology is fully established as a recognised study, and great progress has been made in the experimental examination of many phenomena connected with the interaction of body and mind. Further, in recent years the study of the characteristics and development of the mind in early life has come to be regarded as an important branch of the science of education, and there can be little doubt that the principles and methods of experimental psychology will soon form part of the training of teachers. For these purposes many costly and special appliances are necessary. It seems likely that the committee which has

charge of the scheme will be able to carry it through successfully, as the first list of subscriptions amounts to nearly £500.

Glasgow Hospital Sunday Fund.

The total income for the year from churches and Sunday schools, including donations and bank interest, amounted to £5079 3s. 1d., showing an increase of £248 8s. 2d. The sum set aside for distribution is £4830, and this will be allocated as follows: Royal Infirmary (580 beds), £2205 16s. 6d.; Western Infirmary (469 beds), £1783 13s. 7d.; and Victoria Infirmary (221 beds), £840 9s. 11d. One wonders a little at the precision which docks the Victoria Infirmary of one penny to present it to the Western Infirmary, but the Fund is to be congratulated on its work.

New Hospital in Skye.

Last week there was opened a cottage hospital recently erected at Uig on the Congested Districts Board's estate by the trustees of the late Mr. John Martin. The hospital has a fine situation on rising ground, overlooking the bay, and has a southern exposure. It consists of two wings providing two wards with three beds in each, with all necessary accommodation for matron and staff. The building has cost £1200 and Mr. James Coats, jun., of Paisley has generously furnished the hospital with a complete set of surgical instruments and appliances and also a fully equipped dispensary cabinet.

April 2nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Public Health of Dublin.

THE last fortnightly meeting of the public health committee was held in the municipal buildings on March 26th. Sir Charles Cameron reported that the death-rate for the two weeks ending March 23rd from all causes in the city was 25.9 per 1000 persons living, the mean death-rate in the corresponding period of the previous ten years being 31.9. In the Dublin registration area the general death-rate was 23.8 per 1000. Sir Charles Cameron reported that since March 6th three cases of epidemic cerebro-spinal fever had been returned, none of them in any house from which any previous case had been notified. In reference to a letter from the Dublin Cow-keepers' Association, transmitting a resolution passed by that body on the subject of boracic acid as a preservative of milk sent into the city from country districts, the committee passed a resolution as follows:—

The public health committee warn parents against the use of any milk containing boracic acid as likely to be injurious to health.

Royal Victoria Hospital, Belfast.

At the annual meeting on March 26th it was reported that during the past year there had been 3280 intern and 27,626 extern patients. Of the medical staff, Sir W. Whitla, Mr. A. B. Mitchell, and Mr. R. Campbell retired in rotation during the year, but were re-elected unanimously. The total income from all sources was £14,875 8s. 3d., while the expenditure has amounted to £15,253 1s. 6d. The sum of £10,136 19s. 1d. was added to the invested endowment fund during the past year.

April 2nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Complete Dislocation of the Metatarsus Outwardly and of the First Cuneiform Bone.

On March 13th M. Walther read a paper on behalf of M. Soubotich of Belgrade who had had in his care a man, aged 50 years, presenting a curious little surgical injury. This patient, while going downstairs backwards in order to avoid falling, made a brisk movement of rotation. The front part of the left foot, however, did not follow the rest of the body in this movement and remained fixed. The patient developed outward dislocation of the metatarsus with rotation of the first cuneiform bone. A first attempt at reduction failed and failure was also the result of a second attempt made under chloroform. M. Soubotich then prescribed rest, massage,

and gentle movements. At the end of 15 days the patient began to walk and little by little the foot recovered all its functions, until 14 months after the accident, despite a little weakening of the plantar arch, the patient can use his foot naturally and without pain. M. Walther, in the course of reading the paper, exhibited some radiographs which he had taken himself of dislocation of the metatarsal bones outwards together with fractures of the cuboid bone. One of these cases occurred in a woman who walked well notwithstanding that she had had no treatment.

The International Exhibition of Urban Hygiene at Lyons.

An International Exhibition of Urban Hygiene will be held at Lyons from May 12th to 29th. It will coincide with various other meetings, among which is the visit of various British municipalities. The exhibition will be divided into 11 sections—viz., Dwellings, Drinking-water, Sewers, Highways, Buildings and Watercourses (*Voirie*), Municipal Buildings as a Whole, Schools, Infant Life Protection, Hospitals, Disinfection, General Sanitation of Towns, and the Fight against Prominent Social Evils (*Grands fléaux sociaux*). The exhibition is willing to receive anything which in any way is connected with urban hygiene. No charge will be made for exhibits or for floor space, but water, gas, or electricity consumed by any exhibitor will have to be paid for by him. Any information concerning the exhibition may be obtained by writing to Professor Jules Courmont, Laboratoire d'Hygiène, Faculté de Médecine, Quai Claude Bernard, Lyon.

Municipal Aid for Medical Education.

On the recommendation of M. Chautard the following sums have been allotted by the Municipality of Paris to medical education: to the Municipal Chair of Clinical Gynaecology, 15,400 francs; to the Municipal Chair of Clinical Surgery in Children, 15,400 francs; to the Municipal Chair of Biological Chemistry at the École de Pharmacie, 12,000 francs; for bursaries at the Faculty of Medicine, 5000 francs; for the Library of the Medical School, 2000 francs; for M. Obarran, Laboratory of Experimental Medicine, 2500 francs; to the Physiological Station at Parc des Princes, 7000 francs; to the School of Anthropology, 9000 francs; and to the Pasteur Institute, 12,000 francs.

Gunshot Wound of the Lung.

At a meeting of the Society of Surgery held on March 13th M. Burnier gave an account of this case in his own name and in that of his interne. The patient was a man, aged 36 years, who had received two bullets from a revolver in the præcordial region. The interne proceeded to operate as the case was very urgent. A flap of the whole thickness of the chest wall was turned up, which included the second, third, fourth, and fifth ribs, and dark-coloured blood was seen in the pleural cavity. One of the bullets was found under the visceral pleura and was extracted. The lung, which was wounded in four places, was sutured and the pleural cavity dried out with compresses. Drainage was made at the posterior and lower portion of the pleural cavity and the patient made a steady recovery.

Gunshot Wound of the Kidney.

At a meeting of the Surgical Society held on March 27th M. Walther read an account of the above case on behalf of M. Duval, a naval surgeon. At the operation the whole of the lower half of the kidney was found to be smashed and hæmorrhage was very abundant. A lumbar nephrectomy was performed and four days later signs were observed in the wound of an intestinal fistula. The fistula, however, closed spontaneously after a little time. It seemed likely that the colon had been bruised by the ball with the result that the wall of the bowel sloughed and so gave rise to a fistula.

April 2nd.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Cerebro-spinal Meningitis.

In its wide diffusion this malady has not spared Italy, where, particularly in great commercial and industrial centres like Milan, it is still claiming many victims, young, adult, and elderly. In an interesting lecture before a post-graduate audience Dr. Edoardo Bonardi, professor of special pathology in the University of Pavia, seems to have thrown fresh light on the disease or, at any rate,

to have started a theory already fruitful in instructive controversy. In the case of a boy presenting the "quadro classico" (classical picture) of cerebro-spinal meningitis he drew attention to two important features—one of them clinical, the other bacteriological. Coincidentally in the little patient with the cerebro-spinal meningitis there existed a "croupal pleuro-pneumonia of the right side," and the bacteriological examination of the "cephalo-rachidian liquid, extracted by lumbar puncture," yielded in the dry preparations, as in the cultures, the "diplococcus capsulatus of Tolamon-Fränkel"—the identical pathogenic germ of croupal pneumonia. Professor Bonardi concluded, therefore, that the case was one of "cerebro-spinal meningitis metapneumonia," differentiating it from the epidemic cerebro-spinal meningitis as "meningococcus intracellularis meningitidis," a form clinically more serious as being more malignant. Some of his colleagues objected that "there is no difference between the diplococcus capsulatus" and the "meningococcus intracellularis." To which Professor Bonardi replied that that view is rather out of date and not generally accepted and referred his critics to the recent monographs of Jüger and Marchal, the former of whom, dealing with the morphology of the meningococcus intracellularis, approximates it to the "gonococcus" and the "staphylococci," asserting that it has nothing in common with the "diplococcus pneumonius." Marchal, moreover, analysing 513 cases of cerebro-spinal meningitis bacteriologically dealt with, puts 69.2 per cent. *en rapport* with the meningococcus of Weichselbaum and 28.8 per cent. with the "diplococcus capsulatus" of pneumonia, "which two micro-organisms," continued Professor Bonardi, "are usually distinguished with a rapid (dry) examination of the cephalo-rachidian liquid, comporting themselves frequently in an opposite manner with the method of Gram. Now," adds Professor Bonardi, "the relation between the meningococcus and the gonococcus sustained by Jüger is confirmed by sero-diagnosis—the one micro-organism and the other being agglutinated by the same (immunised) serum of the boy patient now convalescent from cerebro-spinal meningitis. As for the possibility of contagion, concludes Professor Bonardi, in cerebro-spinal meningitis "it undoubtedly exists. No one denies nowadays the contagiousness of typhoid or of croupal pneumonia, although in our hospitals patients yielding these infections are to be found associated with others in a common ward! Let the patients from cerebro-spinal meningitis, therefore, be isolated but equally so let those suffering from pneumonia, keeping in mind that the channels of contagion, numerous and in the main indirect, remain hidden for relatively long periods of incubation."

"Salviamo i Bambini Poveri."

"Let us save the poor children" is an appeal made to the Government by Professor Luigi Concetti, Director of the *Pediatric Clinique* in Rome. Malaria, he urges, is, in the Italian communes, the chief enemy of infancy, either carrying them off after a brief illness or rendering them anæmic, or lowering their resisting power to all the more prevalent maladies, while inflicting often irremediable mischief on the digestive apparatus. Quinine, invaluable as a prophylactic or as a cure in malaria-affected children, is repugnant to them from its taste, nor even when that is disguised in wafers or tablets or lozenges is it easily swallowed. Preparations like "enquinina" or "aristo-quinina" (common enough in Italy) are too dear to be within the reach of the poor. Moreover, nearly all the above-named forms in which the drug is exhibited are found to have their objectionable qualities, causing in children diarrhoea, cardiac trouble, drowsiness, and, in the long run, asthenia. The tannate of quinine, being insoluble and not bitter, has for the last ten years been most generally administered. Not only was it well tolerated, but by reason of the tannic acid it corrected the diarrhoea so often resulting in malaria and caused no nervous disturbance. However, it was given up because it was "insoluble." That objection no longer exists. Like many foods and many drugs which are insoluble in water, it is easily reduced to the liquid state by the gastric and intestinal juices and so gets readily absorbed and passes into the system. Quite lately the *Laboratoria del Chinino di Stato* (State Laboratory of Quinine) has devised a preparation which removes all difficulty in exhibiting the salt and by incorporating the tannate with cocoa and sugar it has produced a "cioccolato-lattino" (a chocolate bon-bon) which children take readily

and even eagerly. The State is now appealed to on the score of economy, so as to cheapen the bon-bons down to the purchasing power of the very poor; and it is confidently expected that its response will be such as to leave no commune, however indigent, without access to a remedy efficacious beyond all others in combating the national scourge.

March 30th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Centenary of the Operateurinstitute.

THE centenary of the foundation of the Operateurinstitute or school for surgeons in Vienna, which was established by the Emperor Francis I. on the suggestion of Dr. Kern, was celebrated, together with the eightieth anniversary of the birthday of Lord Lister, by a special meeting of the Gesellschaft der Aerzte. The institute has during the century of its existence been a very important means of instruction for surgeons. It was attached to the two surgical clinics of the University of Vienna in 1863, but was previously under the immediate control of the professor of surgery for the time being and the expenses incurred in the instruction of the surgeons were till that time paid by the Emperor. The growth of the institute and the importance of its influence on the present generation of surgeons may be judged from the facts that in 1863 there were 56 operations performed, whilst in 1899 the number was 712, and all the modern achievements of surgery attained in Austria are due to the pupils of the Operateurinstitute. Professor Billroth was the only head of this school who had not been also a pupil of it. An address was delivered in honour of Lord Lister, whose discoveries had revolutionised surgery and had thereby profoundly influenced the institute. There was also a reception of former and present pupils of the school, who comprise several professors, *privat-docenten* and directors of hospitals, along with of other surgeons.

Influenza in Austria-Hungary.

Influenza has again been epidemic this year in Central Europe, especially in Austria, and the death-rate was high, whilst the incidence of morbidity was increased by fully 20 per cent. As a rule the complications were of a mild type and involved mostly the ear and the gastro-intestinal tract, whilst the primary attack was almost invariably localised in the upper air passages. The rapid changes in the weather, which especially in the months of January and February caused differences of temperature ranging from 18° to 20° C. in six or eight hours, were very favourable to the development of catarrhal diseases, amongst which influenza had a foremost position. During the last few years influenza has been made one of the notifiable infectious maladies, but many practitioners have shown much laxity in conforming to the regulation. The official statistics therefore report only a slight increase of influenza, whilst the complications, which were undoubtedly of a post-influenzal nature, are not shown in these statistics. The sudden changes of the weather also had an unfavourable effect on the mortality amongst infants. The number of hours of sunshine was reduced by 20 per cent. in comparison with the average for the last 50 years, so that the antiseptic power of the sun's rays had less opportunity of making itself felt.

Pseudo-Hermaphroditismus Masculinus.

At a recent meeting of the Gesellschaft der Aerzte Dr. Halm showed two sisters each with the same malformation. The elder one, who was 20 years of age, sought medical advice on account of the non-appearance of menstruation. It was found that she presented a series of masculine characteristics, such as a well-developed larynx, absence of mammae, an exuberant growth of hair on all parts of the body, and a masculine arrangement of the pubic hair. As regards the genital organs the clitoris was very large, imperforate, and covered with a large prepuce, and the vagina was a short closed canal hardly admitting one finger. No trace of a rectum. In the right labium there was a hard nodule of the shape of a testicle, which Dr. Halm believed to be a testicle. She had been brought up as a girl, but had never felt herself drawn to the other sex. The younger sister, who was 13 years old, showed similar conditions, the only difference being that in the labia she had two

of the nodules resembling testicles. The family history was unimportant except that the grandfathers of the parents were brothers. The father of the girls asked to have the two testicles of the younger girl removed, whilst the elder girl suffered from time to time from pains in her testicle, so that the question arose whether this operation, which might be called castration, was justified. The existence of these malformations naturally gave rise to some difficulty in the selection of an occupation for the girls.

Ulceration of the Skin after Diagnostic Application of the X Rays.

It is not often that a single cautious application of the x rays for the purpose of ascertaining the presence of metallic objects in the human body leads to grave consequences. Such a case, however, was shown by Professor Lang at the same meeting of the Gesellschaft der Aerzte. The patient was a man who had been suspected of having swallowed several rusty nails when in a psychopathic condition. The results of the examination by the x rays were negative, but 12 days afterwards the skin which had been exposed to the rays became inflamed and after two more weeks an ulcer formed. This ulcer showed no tendency to heal and after the lapse of a year covered an area of about 20 square centimetres. An operation was then performed in which the skin of the neighbourhood was also removed and the deep layer of the fascia and even fibres of the muscles were excised. The final result was a defect of about 80 square centimetres, which was covered by the Thiersch method. At the present time, one year after the operation, the scar tissue extended to about 100 square centimetres, was of excellent quality, and was freely movable, without any fixation to the muscles. Professor Lang laid special stress on the necessity of deferring surgical interference in such cases until the degenerative process had ceased.

March 27th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

A National Endowment for the Improvement of Social Conditions.

AMONG the bequests which possessors of great wealth in the United States are making for the benefit of the people of the whole country the most striking is that of the widow of the late Mr. Russell Sage. Mr. Sage was a banker, who began life as a country lad, of humble origin, but who developed remarkable talents for business in whatever position he was placed. He came to New York after a successful career in a country town, having a very moderate fortune at his command. During the 50 years of his financial operations in this city he accumulated a fortune of upwards of \$80,000,000, which he left at the disposal of his widow, a lady of education and refinement, without heirs. Her first considerable gift of this immense estate is \$10,000,000 to create a "Russell Sage Foundation," the object of which is stated to be "the improvement of social and living conditions in the United States." The means to that end will include research, publication, education, the establishment and maintenance of charitable and beneficial activities, agencies, and institutions, and the aid of any such activities, agencies, and institutions already established. It is an interesting fact that the endowment of great national beneficence in this country by men of large wealth had its origin in the gift of Mr. George Peabody of London soon after our Civil war, to endow an organization for the promotion of education in the Southern States. This was followed by the Carnegie foundation of \$10,000,000 in aid of educational institutions, and, finally, by the Rockefeller Foundation of \$32,000,000 for specific lines of national education and philanthropy. The "Russell Sage Foundation" is the first contribution by a single person of wealth towards the national betterment of the social and living conditions of the people.

Honours conferred on a Physician.

The Congress of the United States has passed a special Act, authorising the President to appoint Lieutenant and Assistant Surgeon James Carroll, U.S. Army, a Surgeon with the rank of Major. The President promptly complied. Dr. Carroll's special claim to the honour conferred upon him is due to his voluntary submission while with the army in Cuba to test in his own person the effect of the bite of a mosquito infected with yellow fever. The test was made on

August 27th, 1900; on August 31st, four days after the bite, he was taken sick and sniffered a severe attack of the fever; he was confined strictly to bed until Sept. 13th and convalesced slowly, leaving Onba on Oct. 9th on sick leave. Dr. Carroll was born in England in 1854 and came to the United States by the way of Canada and soon after enlisted in the army. He studied medicine while serving in the army, and on graduation, took a course of graduate work in pathology and bacteriology at Johns Hopkins Hospital. In 1893 he again entered the army service and became associated with Dr. Walter Reed and subsequently was detailed with Dr. Reed to study infectious diseases in the island of Cuba. It was in the course of these investigations that he submitted to the test of the infected mosquito. On returning from Cuba Dr. Carroll devoted his time to the study of the mosquito and was again detailed to continue investigations in Cuba. During this period he succeeded in procuring six more experimental cases of yellow fever, all of which recovered. In 1903 he demonstrated that the supposed protozoan parasites reported to have been found in yellow-fever infected mosquitoes were ordinary yeast cells. In the course of his work it was shown that the supposed cause of yellow fever described by Professor Sanarelli was closely related to the hog-cholera bacillus.

State of Legislation on Osteopathy.

The disciples of osteopathy show a persistency in their efforts to secure a legal standing and recognition worthy of a better cause. On Jan. 1st, 1907, 29 States had adopted some provision for the licensing of osteopaths. Of these, 11 had adopted amendments to the Medical Practice Act authorising existing State boards to examine and to license osteopaths. Three States have added an osteopath to the State board. In 11 States special osteopathic examining boards have been established. In three States osteopaths are exempt from the operation of medical practice laws. In one State they are allowed to pursue their calling after registration in the office of the county clerk. There are 20 States in which no osteopathic legislation has been secured, but in 12 osteopathic Bills are pending and in seven efforts are being made to amend existing Acts relating to osteopathy. It appears on close examination that all these efforts to secure legislation in so many States emanate from one central source, thus showing that the demand for the recognition of osteopathy by legislation is not among the people but has its origin and support in a single central organisation.

Council on Pharmacy and Chemistry of the American Medical Association.

The investigations by this council of the various advertised remedies are revealing the most astonishing frauds perpetrated upon the public by the manufacturers of these preparations. The most popular of these preparations are found to contain large quantities of alcohol. In a test case recently brought by the Commissioner of Excise it was decided that one of the most popular and widely advertised of these cure-all remedies was a beverage, instead of a medicine, owing to the fact that it contained 27 per cent. of alcohol and a small percentage of solids, not drugs. The justice proposed the following questions to the jury for decision—viz., 1. Is the preparation contained in the five bottles, produced by the plaintiff, consisting of water, alcohol, and certain drugs, a proper remedy for the cure of Bright's disease, acute catarrh, chronic catarrh, diseases of the mucous membranes? 2. Was the quantity of alcohol, 26 or 27 per cent., contained in the preparation necessary to hold the drugs actually put therein in solution? 3. Was the quantity of drugs contained in one bottle of the alcohol, diluted with water, sufficient in amount in tablespoonful doses, three or four times a day, to produce any appreciable remedial effect? The jury answered the three questions in the negative. The decision was that the preparation is not a remedy for any disease but that it is so much a liquor that the sale should require a liquor tax certificate. Bright's disease and consumption being the diseases now most feared by the public most of these nostrums are advertised to cure kidney and lung diseases. One of the most famous of the kidney cures, whose manufacturer is now a multi-millionaire, was found to consist of ordinary white sugar alone.

A Suicide Bureau.

The Salvation Army has established in New York what is to be known as a "suicide bureau." The object of the managers is to give good advice and, where needed, to give

material aid to those whose desperate circumstances have driven them to contemplate self-destruction. That such organisation will be of great service is proved by the fact that 18 persons applied on the first day.

March 26th.

Obituary.

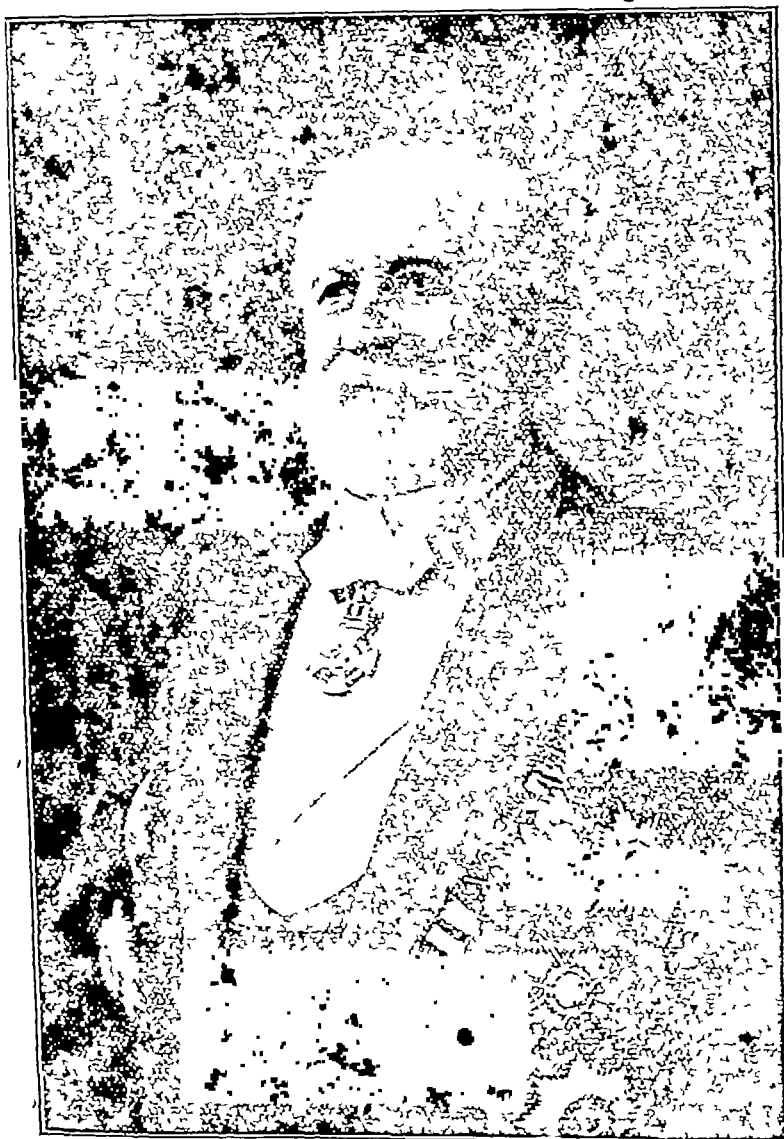
HIS EXCELLENCY ERNST VON BERGMANN.

PROFESSOR OF SURGERY IN THE UNIVERSITY OF DRESDEN

The medical profession in general, and that of German in particular, has sustained a heavy loss by the death of His Excellency Professor von Bergmann, Real Privy Councillor, professor of clinical surgery and director of the surgical clinic of the Royal University, and surgeon-general à la suite of the German army. He is mourned alike by his professional brethren and by the public at large, for it may be said that of all the members of the Berlin medical faculty he was the most popular among every class of the population of the city. His death is the more felt by his friends because on the seventieth anniversary of his birthday, which was celebrated a few weeks ago, he was the recipient of many tokens of sincere esteem alike from his medical colleagues and his numerous patients and then then seemed no evidence of any illness or weakness. Only a very few of his most intimate friends knew that notwithstanding his apparent health and vigour, Professor von Bergmann had been suffering for nearly three years from periodical attacks of severe abdominal pain and that he had himself made the diagnosis of cancer, although this opinion was not shared by his medical attendants. A fortnight ago, at the beginning of the Easter holidays, he went for treatment to Wiesbaden because of sciatic pains in the left hip and a general feeling of uneasiness caused, as he believed, by overwork last winter. At Wiesbaden he apparently recovered, but on March 23rd abdominal symptoms suddenly developed. The family at his request telegraphed to Professor Schlange of Hanover, one of his pupils and also a highly esteemed former assistant, who at once, together with Dr. Stein of Wiesbaden, performed colotomy under local anaesthesia, as the weakness of the patient's heart contra-indicated the administration of a general anaesthetic. The serious symptoms, however, continued after this operation, so that Professor von Bergmann insisted on a second one, which was accordingly performed on the morning of March 25th. A few hours afterwards collapse occurred and at 11 A.M. Professor von Bergmann breathed his last in presence of his family and of several of his former and present assistants who had gone to Wiesbaden on hearing of his illness. At the necropsy it was proved that the disease was not cancer but obstruction caused by old adhesions of the colon and suppurative peritonitis.

Professor von Bergmann was born in 1836 in Riga, the capital of the Russian Baltic provinces and the birthplace of not a few men who have attained eminence in various ways. He was the son of a clergyman of noble birth and had the intention of becoming a clergyman himself. After the completion of his preliminary studies at the gymnasium of Riga he presented himself for matriculation at the University of Dorpat as a student of theology, but was refused permission as the Emperor Nicholas, who at that time governed Russia, had ordered that the number of theological students in Dorpat should be limited according to the number of existing incumbencies, and when young Bergmann applied he found that there were no vacancies. A similar state of affairs existed in the Faculty of Jurisprudence, where he also sought for admission, and he was thus forced to matriculate in the Faculty of Medicine, where there were no restrictions on the number of students. It was thus by accident that the deceased became a medical student and that he ended his life, not as a clergyman in some remote town or village of the Russian Baltic provinces, but in Berlin as the world-renowned surgeon of the greatest German University.

After having completed with success his medical curriculum at the University he became qualified in 1860 and was then appointed an assistant in the surgical clinic, first under Professor von Oettingen and then under Professor Adelman. In 1864 he obtained recognition as a private docent. In 1866 he took part as a volunteer surgeon



HIS EXCELLENCY PROFESSOR ERNST VON BERGMANN,
PROFESSOR OF SURGERY IN THE UNIVERSITY OF BERLIN.

from an attack of pulmonary tuberculosis and had also held an appointment at the Cotswood Sanatorium. He was appointed medical superintendent of the Devon and Cornwall Sanatorium about two years ago. Mr. Fleming was extremely popular and was much liked by the patients for his kindness and consideration. He was a good sportsman and hunted regularly with the Dartmoor hounds. Mr. Fleming was married two years ago and leaves a widow and one child. The funeral, which took place at Brent parish church on March 27th, was largely attended, amongst those present being many members of the medical profession from Plymouth.

Medical News.

UNIVERSITY OF LIVERPOOL.—At examinations held in March the following candidates were successful:—

DEGREES OF M.B. AND CH.B.

Second Examination.—Part A: L. S. Ashcroft, K. J. O. Bradshaw, L. Buckley, A. G. W. Owen, J. A. Parkes, J. F. Roberts, and N. W. Steinberg. Part B: S. P. Sykes.

Final Examination.—Part II: G. W. N. Joseph (Second Class Honours).

DEGREE OF B.D.S.

Third Examination.—H. Chapman.
Final Examination.—E. L. Cunnell.

DIPLOMA IN TROPICAL MEDICINE.

A. Bond, M. H. G. Fell, R. H. Kennan, W. H. Kenrick, G. B. H. Le Fanu, and H. Vallance.

VICTORIA UNIVERSITY OF MANCHESTER.—At examinations held in March the following candidates passed in the subjects indicated:—

FINAL EXAMINATION.

Part I.—J. A. Bateman, T. B. Bolton, W. O. Denniston, T. B. Dickinson, Edward Gandy, Frances M. Huxley, E. K. Lomas, S. S. Mahamadi, W. P. Marshall, W. W. Martin, John Morley, J. H. Nichol, M. O. Skillern-Lawrance, W. W. Stacey, John Thompson, R. B. Thompson, B. W. E. Trevor-Roper, W. W. Uttley, T. G. Williams, and A. E. Woodall.
Part II.—T. G. Burnett, Jane A. Fleming, S. H. Gandhi, J. T. B. Hall, W. H. Judson, W. P. Moffet, F. R. Parakh, J. B. Macalpine, W. H. Ross, and Harold Spurway.

The following candidates satisfied the examiners in the subjects of forensic medicine and public health:—

J. W. Bride, J. F. Dow, J. A. Falser, Frank Hartley, Robert Lakto, S. B. McClatchey, J. L. Moir, Peter Moran, Wilfrid Nightingale, Alice Oberdorfer, Robert Robertson, Elsie M. Royle, G. B. Warburton, and Henry Whitehead.

SECOND EXAMINATION.

A. Anatomy and Physiology.—H. E. Allanson, D. I. Connolly, F. H. Diggle, John Gow, T. J. Higgins, R. A. Jackson, N. T. K. Jordan, Niel McDonald, Edith M. Maraden, C. B. Marshall, G. B. H. Nicholls, Cedric Pimblett, Harry Platt, Alexander Porter, James Ramsbottom, A. A. Smalley, Norman Tattersall, R. H. Titcombe, and J. F. Ward.

Anatomy.—R. J. Batty.
B. Materia Medica and Pharmacy.—Estelle I. B. Atkinson, G. M. Benton, J. F. Cocker, Gertrude H. Geller, and F. G. Wrigley.

FIRST EXAMINATION (NEW REGULATIONS).

Materia Medica and Pharmacy.—G. S. Bate and W. J. A. Quine.

FACULTY OF DENTISTRY.

Third B.D.S. Examination.—Arnold Renshaw.
Third L.D.S. Examination.—J. L. Reynolds and Albert Torkington.

The annual general meeting of the Association of Medical Men receiving Resident Patients was held at 8, Henrietta-street, Covent Garden, London, on March 27th. Dr. D. Walsh, the President, was in the chair and nine members were present. The minutes of the previous annual meeting having been read and confirmed the honorary secretary read a statement describing the position and progress of the association, which gave rise to an interesting discussion. The following motions were then unanimously agreed to:—

1. That there shall be one honorary secretary (who shall also be honorary treasurer) resident in London who shall be empowered to spend a small sum yearly out of the association's funds for assistance in purely clerical work. He shall be supported by a committee of 12 members, four to form a quorum, who shall meet at least twice a year. One of the meetings shall be at the end of the financial year for the purpose of preparing the annual report and passing the statement of accounts. The committee shall consist of London and country members, who shall be elected by the annual general meeting; they shall have power to elect their own chairman, who shall have a casting vote; they shall also have power to fill any vacancies which may occur during their year of office.
2. That any eligible medical practitioner wishing to join the association subsequently to August 31st in any year shall pay the usual entrance fee of one guinea and 5s. as subscription for the remainder of the financial year.

Dr. Walsh was unanimously re-elected President. Dr. H. Bin was unanimously appointed honorary secretary and honorary treasurer. Dr. G. E. R. Crallan's name was added to the list of vice-presidents and he was accorded a vote of thanks for his services as honorary secretary and honorary treasurer to the association since its formation in 1899.

On March 26th, Mr. William Henry Waterfield, L.R.O.P., L.R.C.S. Irel., was returned for the third time at the head of the poll for the Stonehouse (Devon) board of guardians.

LONDON COUNTY COUNCIL: SCHOLARSHIPS FOR STUDENTS OF MIDWIFERY.—In July, 1907, the London County Council will proceed to award not more than six scholarships to students in midwifery. Candidates must be ordinarily resident within the county of London and must be between 24 and 40 years of age on July 31st, 1907. The value of each scholarship will be £25 and the course of training will extend over a period of six months. Forms of application may be obtained from the executive officer, Education Offices, Victoria Embankment, W.C.O., and must be returned to the same address not later than Saturday, April 20th, 1907. Further information may also be obtained on application to this address.

LITERARY INTELLIGENCE.—Messrs. W. B. Saunders Company will publish almost immediately a new work on *gynaecology and abdominal surgery*, edited by Howard A. Kelly, M.D., and Charles P. Noble, M.D. In view of the intimate association of gynaecology with abdominal surgery the editors have combined these two subjects in one work. The operations and procedures described in the text are illustrated by some 650 original illustrations, the work of Max Brodel and Hermann Becker of the Johns Hopkins Hospital, Baltimore.—Messrs. Putnam's Sons will publish early next week a translation from the German of Dr. J. Starke's treatise on "Alcohol; The Sanction for Its Use Scientifically Established and Popularly Expounded by a Physiologist."

UNIVERSITY OF LIVERPOOL.—The newly created chair of cytology has been filled, Mr. John Edmond Salvin Moore having been elected to the post by the Council of the University. Mr. J. E. S. Moore has had a distinguished academic career and since the year 1905 has been director of the cancer research laboratories at the University. He has been leader of two research expeditions to Tanganyika, and amongst other works he is the author of a publication entitled "Exploration and General Zoology." The Council of the University, on the recommendations of the Senate and the Medical Faculty, has elected Mr. Courtney Yorke to the Holt Fellowship in Physiology and Pathology and Dr. F. A. G. Jeans to the Scholarship in Surgical Pathology.

THE SOCIETY OF ARTS.—The lecture arrangements for meetings during April and May include the Cantor lectures on April 15th, 22nd, and 29th by Professor Herbert Jackson, F.I.O., F.O.S., his subject being *Detergents and Bleaching Agents used in Laundry Work*; on April 24th Mr. Herbert Wright, Controller of the Government Experimental Station, Ceylon, will read a paper on *Rubber Cultivation in the British Empire*; on May 8th Mr. Paul Schlicht will discuss the *Production of Coke and its Application to Domestic Fires*; on May 15th Dr. Herbert W. G. Macleod will take for his subject *Trypanosomiasis or Sleeping Sickness*; and on May 30th Mr. Laurence Robertson, I.O.S., will discourse on *Irrigation Colonies in India*. With the exception of the last-mentioned lecture, which will be delivered at 4.30, the lecture hour in all cases is 8 P.M.

DEPLORABLE MEDICAL POSITION AT NOVO NIKOLAEVSK.—The Governor-General of Tomsk, Baron NIKOLAEVSK.—The local correspondent of the *Novos Vremya*, Nollen, says the local correspondent of the *Novos Vremya* has gone to St. Petersburg to report on the tragical situation of Novo Nikolaevesk. He was accompanied by a representative depulution from the distressed town which numbers 45,000 inhabitants. Referring to the medical position, our Russian contemporary says that the morgue is a place seven feet square, covered with filth, without any usual accessories. In the summer the necropsies are carried out in the open air. The blood drops to the ground and the viscera are buried there. Then the town and the viscera are scratched them up. The medical staff pigs come and overpowered with work. The hospitals are in a frightful condition and do not afford a

tenth of the required accommodation. Infections and common cases are huddled together in one ward and often on the floor. In some there is no surgical department and surgical cases have to be taken several versts to a "transfer hospital."

A NEW ISOLATION HOSPITAL.—The new isolation hospital for the Merthyr Tydfil borough council was formally opened on March 30th. The hospital, which has been built about a mile from the centre of the town, has been erected at a cost of £13,500 and provides accommodation for 30 patients.

MEDICAL MAGISTRATES.—Mr. W. Black Jones, M.D., B.S. Lond., D.P.H., of Llangammarch Wells, has been placed on the commission of the peace for Brecknockshire.—Mr. Alfred H. Carter, M.D. Lond., F.R.C.P. Lond., professor of medicine in the University of Birmingham, has been placed on the commission of the peace for the county of Worcester.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Progress of Bills.

THE House of Commons adjourned for the Easter recess on March 27th when the first of the three parts into which the Parliamentary session divides itself was over. Since the House met in February nearly 150 Bills have been introduced, but the vast majority of them have not yet reached a second reading. Amongst the Bills which still await the second reading stage are the Advertisements Regulation Bill, the Butter and Margarine Bill, the Coroners Bill, the Coroners' Inquests (Railway Fatalities) Bill, the Dogs (Injuries to Persons) Bill, the Education (Administrative Provisions) Bill, the Education (Scotland) Bill, the Housing of the Working Classes Act Amendment Bill, the Infant Life Protection Bill, the Nurses Registration Bill, the Parochial Medical Officers (Scotland) Bill, the Education of Afflicted Children (Ireland) Bill, the Pharmacy Bill, the Poisons and Pharmacy Bill, the Municipal Milk Depôts Bill, the Prevention of Cruelty to Children Bill, the Public Health Bill (Mr. J. W. Wilson's measure), the Public Health Officers Bill, the Public Health (Regulations as to Food) Bill, the Released Persons (Poor-law Relief) Bill, and the Sale of Whisky Bill. Most of these measures, owing to the restrictions placed by the rules of the House on the opportunities for the advancement of private Members' Bills, will probably not even get a second reading this session. A few of them, including the Butter and Margarine Bill, the Education (Administrative Provisions) Bill, the Education (Scotland) Bill, the Municipal Milk Depôts Bill, the Poisons and Pharmacy Bill, the Public Health (Regulations as to Food) Bill, and the Released Persons (Poor-law Relief) Bill stand as Government measures in a different category. Some of them are to be pressed forward soon after the House reassembles, and the Government has it in its power to allocate to their advancement such of the time at its disposal as may seem necessary. Amongst the few private Members' Bills which have got beyond the second reading stage are the Education Act Amendment Bill and the Education (Provision of Meals) (Scotland) Bill. The former has passed through committee, the latter awaits consideration by the Standing Committee on Trade.

The Municipal Milk Depôts Bill.

The text of the Bill introduced in the House of Commons by the President of the Local Government Board "to authorise and regulate the establishment of milk depôts by certain local authorities" has been issued. Under it the Common Council of the City of London, or the council of any metropolitan or municipal borough or urban district in England with a population of 50,000 or upwards, "may, subject to regulations, establish and thereafter maintain depôts for the sale of milk specially prepared for consumption by infants under two years of age, and purchase and prepare milk and provide such laboratories, plant, and other things, and exercise and perform such other powers and duties, as may be necessary for the purposes of this Act." If the council of a borough or urban district containing a population above 10,000 but below 50,000 obtains the consent of the Local Government Board it may put this provision of the Bill in force within its area. The Local Government Board is given power to make regulations as to the sources of the milk, as to its nature, and as to the manner in which, and the conditions under which, it is to be purchased, conveyed, and sold. The regulations may include provisions as to the classes of persons to be supplied and as to the visitation of their homes.

Public Health Officers.

Sir Walter Foster's Bill to amend the law relating to the qualification and tenure of office of medical officers of health and sanitary

inspectors has just been printed. The measure is backed by Sir FRANCIS POWELL, Sir JOHN BATTY TUCKER, and Mr. RANKIN. The main objects of this Bill are to secure that none but those properly qualified shall be appointed as medical officers of health or sanitary inspectors, and to give them security in their tenure of office similar to that enjoyed by Poor-law medical officers and metropolitan medical officers of health. The first clause of the Bill lays down that no one shall after Sept. 29th, 1909, be appointed a medical officer of health unless he is a duly qualified medical practitioner, and unless either (a) he is registered on the Medical Register as the holder of a diploma in sanitary science, public health, or State medicine under Section 21 of the Medical Act, 1886; or (b) he has for three consecutive years before the commencement of this Act served as a medical officer of health of a district or combination of districts with a population, according to the last published census, of not less than 50,000; or (c) the Local Government Board consents to his appointment.

Under Clause 2 of the Bill a medical officer of health or sanitary inspector shall not hold office or be appointed for a limited period only, and he shall be removable only subject to an appeal to the Local Government Board. This provision is to apply to every medical officer of health or sanitary inspector, notwithstanding any contract to the contrary. By the terms of the Bill an urban authority will have the power to appoint two or more sanitary inspectors. It is not proposed to extend the Bill to Scotland or Ireland.

The Housing of the Working Classes Act Amendment Bill.

A clause in Sir Walter Foster's Housing of the Working Classes Act Amendment Bill places a new power in the hands of medical officers of health. Under it, it shall be the duty of the medical officer of health of every rural district to represent to the council of that district cases where danger arises to the health of the inhabitants of any portion of it from the insufficiency or unwholesomeness of the existing supply of housing for the working classes. It is further laid down that if four or more householders in a parish or other affected area complain in writing of such a danger to the medical officer of health it shall be his duty to make an inspection of the houses and to transmit the complaint along with his observations to the district council. The rural district councils must then take the matter into consideration. For rural district councils which adopt the measure an elaborate procedure is laid down as to the purchase and hiring of land and the erection of houses. Certain clauses of the Bill deal with cases where rural district councils do not adopt its provisions.

Medical Examination of School Children in Scotland.

Mr. SINGLAI, in introducing the Education (Scotland) Bill, mentioned that it would make provision for the medical examination of children. The text of the Bill, which was published on the day after the House of Commons rose for the Easter holidays, now shows the terms of the proposal of the Government. Clause 4 lays down that a school board may on its own initiative (or where required by the Education Department) provide for the medical examination and supervision of children attending schools under its charge, under provisions prescribed from time to time by any code or minute of the department. For this purpose the school board may appoint such medical inspectors as may be necessary.

Dogs (Injuries to Persons) Bill.

Mr. DUNDAS WHITE'S Bill to amend the law relating to injuries to persons by dogs has the support of Mr. CHOMRE, Dr. SHEPHERD, Lord ROBERT CRUICK, Sir JOHN JARDINE, Mr. T. F. RICHARDS, Mr. ARNOLD HERBERT, and Mr. MOLTENO. As the law now stands a person who is injured by a dog cannot recover damages from the owner of the dog unless, in addition to proving the damage, he can also prove the "scienter," that the dog was known to be dangerous. This frequently deprives the injured person from a remedy. The Bill is designed to place the risk on the owner of the dog, who can control its movements, instead of on the injured person who cannot, with a view to making dog owners more careful, and so not only securing compensation for, but also obviating, such injuries.

The Accounts of the General Medical Council.

The accounts of the General Medical Council and branch councils and of the Dental Registration Fund for 1906 have been presented to Parliament.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 27TH.

The Inspection of Vitiolation Experiments.

Mr. SKEATON asked the Secretary of State for the Home Department what were the salaries paid to the English inspectors of vitiolation, Mr. Thane and Sir James Russell; whether out of 2506 operation experiments made last year, only 15 were witnessed by the senior inspector; whether the Home Office granted vitiolation licences on the recommendation of the Research Association; and whether this association existed for the protection and promotion of vitiolation.—Mr. GLANVILLE said, in reply: The remuneration of the inspector under the Cruelty to Animals Act, 1876, is 500 guineas, and that of the assistant inspector is 350 guineas. The number of operation experiments witnessed by Mr. Thane in 1905 was 15. The number was smaller than usual in consequence of the inspector being absent on sick leave for some weeks. Among the objects of the Association for the Advancement of Medicine by Research are the protection of the interests of

licences and the publication of literature on the importance of research. Applications for licences and new certificates are sent to the association for observations; but the Secretary of State forms his own opinion in each case after considering the reports of his own expert advisers, and the responsibility rests with him.

Military Doctors and Civilian Casualties.

Mr. MARYHAM asked the Secretary of State for War whether his attention had been called to a serious, and afterwards fatal, accident to the driver of a London and South-Western Railway motor train near Bentley Station on Feb. 23rd, when the injured man was taken by train to Bordon Camp, with a view to his receiving the assistance of the military doctor there; whether he was aware that the latter refused to attend to the man; whether there were any restrictions in the Army Regulations which prevented military officers from attending to civilian casualties such as the one referred to; and, if so, would he take steps to have such restrictions forthwith removed.—Mr. HALSEY answered: I have made inquiries into this matter. It appears that the military medical officer concerned was not asked to attend to the man. There are no restrictions placed on military medical officers against rendering immediate assistance in civil cases, nor to the admission into military hospitals of cases requiring surgical attendance the result of serious accidents in the immediate vicinity.

Vivisection Experiments.

Answering Mr. SKEATON, Mr. GLADSTONE said that he hoped the return of the vivisection experiments performed during the past year would be issued during May.

Illness and Vaccination.

Mr. LUTON asked the President of the Local Government Board whether Dr. Fletcher was paid for reporting on cases of illness following vaccination; whether formerly similar reports were published; and on what ground of public policy such reports were kept secret notwithstanding the wish of the parents for publicity.—Mr. JOHN BURNS replied: Dr. Fletcher is one of the medical inspectors of the Local Government Board and is paid an annual salary for the discharge of his duties, which, like those of other medical inspectors, include the occasional investigation of cases of illness alleged to be due to vaccination. Some of the reports of the inspectors were communicated to the Royal Commission on Vaccination and the facts contained in certain of these reports were published by them, but since the final report of the Commission no further reports of the kind in question have been published. The reports of necessity often deal with the acts of family history of individuals and must, I think, be treated as confidential.

Whooping-cough at Norwood.

Mr. LEWIS HASLAM asked the President of the Local Government Board whether he would state how many children in the Lambeth Poor-law school at Norwood had been, and were at present, affected by the recent outbreak at that school of diphtheria, scarlet fever, and whooping-cough respectively; and whether any cases had as yet been fatal.—Mr. BURNS said in reply: My honourable friend is, I think, under a misapprehension in this matter. I understand that with the exception of six mild cases of whooping-cough, five of whom are convalescent, there has been no recent outbreak of the diseases mentioned in the question at the school, nor has there been any death from them. At present there is not a single case of diphtheria or scarlet fever in the school.

Pot-still and Patent-still Whiskies.

Mr. H. O. LEA asked the Chancellor of the Exchequer whether the Inland Revenue officials did not discriminate in their accounts between pot-still and patent-still whisky, the distilleries being in almost all cases distinct; and whether, in view of the importance to the wholesale spirit trade in this country that this information should be given to the public, he could state the quantities of pot-still and patent-still whiskies produced in England, Ireland, and Scotland in the years 1888, 1896, and 1906 respectively; and, if it was impossible to furnish this information for the past, would he issue orders for the facts to be ascertained and circulated in future.—Mr. ASQUITH said: No discrimination is at present made between pot-still and patent-still spirit and consequently no departmental records exist from which a return of the kind named could be made for past years. If legislative authority were given, it would be possible for the department to keep a record in the future of the quantities of spirit distilled by pot-stills and patent stills respectively; but such a record would afford no evidence of the relative quantities used for potable and other purposes. Still less would it afford evidence of the relative quantities used for a particular spirit, such as whisky and other potable spirits, for the total product of patent stills is applied only partly to the purposes of "drinking" spirits, and the distribution of such part as is so applied between the several classes of potable spirits, gin, whisky, compounds, &c., cannot be determined.

Tests for Colour Blindness.

Mr. HENRIKER HEATON asked the President of the Board of Trade whether he had any official information showing that the tests for colour blindness adopted by the Board of Trade were efficient.—Mr. LORD GEORGE (in a written answer) replied: I can only say that the colour tests for the Mercantile Marine were adopted on the advice of a committee of the Royal Society of the highest eminence, and that the Board of Trade has no reason to doubt their efficiency.

A Death from Privation.

Mr. SUMMERBELL asked the Secretary of State for the Home Department whether his attention had been called to the case of Ellen Simpson, who was shown at the inquest held as to her death at Stepney on March 16th last to have died from heart failure accelerated by want; and, if so, whether any relieving officer or other officer of the Stepney guardians was present at the inquest and at what date would particulars of this inquest be sent to the Local Government Board by the Home Office.—Mr. GLADSTONE (in a written answer) replied: I understand that the deceased and her sister had been refused outdoor relief and that they declined to go into the workhouse. They appear to have been unable to look after themselves. No relieving officer was examined at the inquest; the woman had been in the district only a few days and no relieving officer unfortunately knew anything of the case. Particulars of deaths from starvation or deaths accelerated by privation in 1907 will be furnished about March next and sent to the

Local Government Board. I am bringing the case to the notice of the Local Government Board.

Housing in Roscrea.

In answer to Mr. KENDAL O'BRIEN, Mr. BIRRELL, in a written reply, stated that the Irish Local Government Board had received application from the Roscrea rural district council for carrying out a housing scheme under the Housing of the Working Classes Act, 1901. Rural district councils could only exercise the powers under Part II of the Act which related primarily to the closing and demolition of buildings unfit for human habitation and to the removal of obstructive buildings.

Sewage Disposal.

Sir FREDERICK BANBURY asked the President of the Local Government Board whether it was the intention of the Government to introduce a Bill dealing with the recommendations of the Royal Commission on Sewage Disposal.—Mr. JOHN BURNS (in written answer) replied: The matter is under consideration but I cannot make any announcement with regard to it at the present moment.

BOOKS, ETC., RECEIVED.

FISCHER, GUSTAV, Jena.

Die Bakteriologie in der Augenheilkunde. Von Dr. Theodor Axenfeld, o.ö. Professor der Augenheilkunde in Freiburg. Price M.12; geb., M.13.

Das Dysenterietoxin. Von Dr. Robert Doerr, K. und K. Regimentsarzt. Price M.2.50.

Lehrbuch der Inneren Medizin. Herausgegeben von Dr. J. v. Mering, o.ö. Professor der Speziellen Pathologie und Therapie und Direktor der Medizinischen Universitätsklinik in Halle. Vierte teilweise umgearbeitete Auflage. Price of the complete work (2 volumes), M.12.50; bound, M.15.

FORDHAM UNIVERSITY PRESS, New York.

Makers of Modern Medicine. By James J. Walsh, M.D., Ph.D., LL.D., Acting Dean and Professor of the History of Medicine and of Nervous Diseases, Fordham University Medical School, and Adjunct Professor of Medicine at the New York Polytechnic School for Graduates in Medicine; Professor of Physiological Psychology at St. Francis Xavier's College in New York. Price \$2.00 net.

FUNK AND WAGNALLS COMPANY, New York and London.

The Psychic Riddle. By Isaac K. Funk, D.D., LL.D., Editor-in-Chief of the "Standard Dictionary," author of "The Next Step in Evolution," &c. Price \$1.00 net.

HEATE, D. C., AND COMPANY, Boston, U.S.A., and 15, York-street, Covent Garden, London, W.C.

Manual of Clinical Chemistry. By A. E. Austin, A.B., M.D., Professor of Medical Chemistry and Toxicology in the Medical Department of Tufts College, Boston. Price 6s.

LEHMANN, J. F., Heustraße, 23, München.

Lehmann's Medizin. Handatlanten. Band XXXV. Atlas und Grundriss der Embryologie der Wirbeltiere und des Menschen. Von Dr. Alexander Grewitzsch, St. Petersburg, früher Privatdozent in Bern. Price M.12.

LONGMANS, GREEN, AND CO., 39, PATERNOSTER-ROW, London, E.C.

The World Machine: The First Phase; The Cosmic Mechanism. By Carl Snyder. Price 9s. net.

MURRAY, JOHN, 50A, Albemarle-street, London, W.

The Nervous System of Vertebrates. By J. B. Johnston, Ph.D., Professor of Zoology in West Virginia University. Price 15s. net.

NISBET, JAMES AND CO., LIMITED, 21, BERNERS-STREET, London, W.

Gall-stones and Diseases of the Bile-ducts. By J. Bland-Sutton, F.R.C.S. Eng., Surgeon and Lecturer on Surgery to the Middlesex Hospital, &c. Price 3s. 6d. net.

SCHOETZ, RICHARD, Wilhelmstrasse, 10, Berlin, S.W.

Die Bekämpfung der Tuberkulose innerhalb der Stadt. Ein Beitrag zur Wohnungsfrage. Erfahrungen aus den Berliner Anstalten und Fürsorgestellen für Lungenkranke. Von Ernst Pütter, Geheimem Regierungsrat, Verwaltungs-Direktor der Königl. Charité, Vorsitzendem des Central-Komitees der Anstalten- und Fürsorgestellen für Lungenkranke in Berlin und Vororten. Price P.1.60.

STEINHEIL, G., 2, Rue Casimir-Delavigne, Paris.

Étude Expérimentale de la Pleurésie Séro-fibrineuse tuberculeuse. Par M. le Docteur F. Cartier. (Travail du Laboratoire de M. le Dr. Debourse à l'Hôpital Beaujon.) Price not stated.

Précis de Pathologie Interne. Par MM. Balthazard, Cestan, Prédic de Pathologie Interne. Aggrégés des Facultés de Médecine. Secrétaires de la Rédaction: M. Balthazard, Préf. de Médecine. M. le Professeur Bouchard. Tome I., Maladies Infectieuses de M. le Professeur Bouchard. Tome II., Nutrition, Sang (Nicolas); Intoxications (Balthazard). Tome III., Tub. (Balthazard); Cœur, Foie, Reins, Cerveau (Cestan); Digestif, Péritoine, Pancréas (Balthazard); F. de Médecine. Tome IV., Système Nerveux (Cestan); Surrénales (Olaude). Tome V., Système Nerveux (Cestan); Surrénales (Olaude). Prix de l'ouvrage complet en 4 volumes cartonnés Fr.32.

Traité de Médecine Opératoire et de Thérapeutique Chirurgicale. Publié sous la Direction de Paul Berger et Henri Hartmann. Le. Autoplasties: Levres, Joues, Oreilles, Tronc, Membres. Pa. Ch. Nélaton, Agrégé à la Faculté de Médecine, Chirurgien de l'Hôpital Boucicaut et L. Ombredanne, Ancien Professeur de la Faculté, Chirurgien des Hôpitaux. Price Fr.10.

Appointments.

Useful applicants for Vaccinator, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week such information for gratuitous publication.

ALAN, JOHN, M.B., Ch.B. Edin., has been appointed Senior House Surgeon to the Walsall and District Hospital, Walsall.

APES, ROBERT, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Medical Officer to the Camberwell Provident Dispensary.

BAILE, JOSEPH ALEXANDER, M.B. Lond., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Consulting Physician to the Pembroke and District Infirmary.

EDIN, EDWARD A., B.Sc., M.B., Ch.B. Edin., has been appointed Senior House Surgeon at the Blackburn and East Lancashire Infirmary.

EMILL, J. M., M.B., B.Sc. Lond., has been appointed an Assistant Inspector of Foods in the Medical Department of the Local Government Board.

ETWARD, W. CURLING, M.B., B.S. Durh., M.R.C.S., L.R.C.P. Lond., has been appointed Principal Medical Officer and Director of the Egyptian Government Hospital, Port Said.

DOVER, ALFRED SYMON, M.R.C.S., L.R.C.P. Lond., has been appointed Senior Resident Medical Officer to the Royal Hospital for Diseases of the Chest, City road, E.C.

WILLIAMS, J. S., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Tetbury District of the county of Gloucester.

SMITH, WILLIAM, M.R.C.S., L.S.A. has been appointed Medical Officer of Health for Liskeard (Cornwall).

PIZZALI, J. A. WENCESLAUS, M.D. Brux., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Surgeon to the Exeter Dispensary.

PLIGHT, CHARLES T. MACL., M.B., B.C. Cantab., M.R.C.S., L.R.C.P., has been elected Honorary Surgeon to the West Norfolk and Lynn Hospital.

ROSE, H. S., M.B., B.C. Cantab., has been re-appointed Medical Officer to the Bridgewater Union.

ROYLE, JOSEPH M., M.R.C.S., L.R.C.P. Lond., has been appointed Junior House Surgeon at the Blackburn and East Lancashire Infirmary.

PELLEY, BINGLEY GIBBS, M.R.C.S., L.S.A., has been appointed Medical Officer for Sidmouth (Devon).

REYNOLDS, S. H., M.B., C.M. Edin., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

SMITH, A. W. PORTESCUE, M.D. Brux., L.R.C.P. Lond., M.R.C.S., D.P.H. Lond., has been appointed Surgeon to the Exeter Dispensary.

SCOTT, STOKER R., M.B., M.S. Lond., F.R.C.S. Eng., has been appointed Aural Surgeon to the Evelina Hospital for Sick Children.

SMITH, S. MAYNARD, M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Victoria Hospital for Children.

TAPP, B. H. H., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Southwold District of the county of Suffolk.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index)

ANTON-UNDER-LYNE DISTRICT INFIRMARY.—Junior House Surgeon. Salary at rate of £75 per annum, with board, attendance, washing, &c.

BURKHEAD UNION INFIRMARY AND SANATORIUM.—Resident Assistant Medical Officer. Salary £120 per annum, with board, washing, and apartments.

BIRMINGHAM, QUEEN'S HOSPITAL.—Second Physician for Out-patients and Pathologist. Salary £100 per annum.

BIRMINGHAM, UNIVERSITY OF.—Junior Assistant, Pathological Department. Salary £50 per annum.

BODMIS, CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £140 a year, rising to £160, with rooms, ration, laundry, and attendance.

BOTRYNTH, ROYAL BOSCOMBE AND WEST HANTS HOSPITAL.—House Surgeon. Salary £50 per annum, with board, lodging, and washing.

BURFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

BURTON ROYAL INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.—Honorary Assistant Auralist.

CHICHESTER AND NORTH DEVENTHAM HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £50 a year, with board, apartments, and laundry.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, S.E.—Assistant Surgeon.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—House Surgeon. Salary £150 per annum, with board, apartments, and washing.

FIVE DISTRICT ASYLUM, Copar-Fife.—Junior Assistant Medical Officer. Salary £120 per annum, with rooms, board, and attendance.

GLOUCESTER GENERAL INFIRMARY AND THE GLOUCESTER EYE INFIRMARY.—Assistant House Surgeon. Salary at rate of £50 per annum, with board, residence, and washing. Also Assistant Surgeon of the Aching Medical Staff.

HARTFORD, STOKES TRUST, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL.—House Physician. Salary £100 per annum, with apartments, board, and washing.

HOSPITAL FOR WOMEN, Soho-square, W.—Resident Medical Officer for six months. Salary at rate of £60 per annum.

HUDDESFIELD INFIRMARY.—Senior Assistant and Junior Assistant House Surgeon. Salaries £50 and £30 respectively per annum, with board, rooms, and washing.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Assistant House Surgeon. Salary £75 per annum, with residence, board, and washing.

LEICESTERSHIRE AND RUTLAND ASYLUM, Leicester.—Second Assistant Medical Officer, unmarried. Salary £150, rising to £160, with apartments, board, and washing.

MIDDLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £50 per annum, with board, and residence.

MIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon and Anaesthetist, unmarried. Salary £80, with board, lodging, and washing.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Dental Surgeon. Also Medical Officer in Charge of the Electrical Department. Salary £52 10s. per annum.

MIDDLEBROUGH, NORTH RIDING INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per year, with residence, board, and washing.

NATIONAL DENTAL HOSPITAL, Great Portland-street, W.—Anaesthetist.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.—Assistant Ophthalmic Surgeon.

NEWCASTLE-UPON-TYNE, ROYAL VICTORIA INFIRMARY.—Director for the Bacteriological Laboratory. Salary £160 per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Junior Resident Medical Officer. Salary £70 per annum, with board, residence, and laundry.

NORTHAMPTON GENERAL HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with apartments, board, washing, and attendance.

OXFORD, UNIVERSITY OF.—Phillip Walker Studentship in Pathology. Value £200 and tenable for three years.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—House Physician, also House Surgeon, for six months. Salary at rate of 50 guineas per annum, with board and residence.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—House Physician. Salary £50 per annum, with board, residence, and laundry.

PORTSMOUTH AND SOUTH HANTS EYE AND EAR INFIRMARY, Farnborough, Portsmouth.—Honorary Assistant Ophthalmic Surgeon.

RICHMOND, SURREY, ROYAL HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with board and apartments.

ROYAL DENTAL HOSPITAL, Leicester-square, London, W.C.—Honorary Curator of the Museum.

ROYAL EYE HOSPITAL, Southwark, S.E.—House Surgeon. Salary £52 10s. per annum, with board and residence.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Resident House Physician, Resident House Surgeon, House Physician, and Casualty House Surgeon.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL, 254, Great Portland-street.—Resident House Surgeon. Salary £200 per annum, including allowances.

SHEFFIELD UNION HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with apartments, ration, and allowances. Also Resident Assistant Medical Officer. Salary £80 per annum, with apartments, ration, and allowances.

TORQUAY, TORRAT HOSPITAL.—House Surgeon. Salary £100 per annum, with residence, board, and washing.

TRIGMOUTH HOSPITAL, South Devon.—House Surgeon. Salary £70 a year, with board, lodging, and washing.

TREBOAT HOSPITAL, Golden-square, W.—Assistant Surgeon.

WAKEFIELD, WEST RIDING ASYLUM.—Pathologist and Assistant Medical Officer. Salary £140, with board, apartments, washing, and attendance. Also Clinical Assistant. Salary £50 per annum, with board, apartments, washing, and attendance.

WARRINGTON, LANCASHIRE COUNTY ASYLUM, Winton.—Assistant Medical Officer, unmarried. Salary £150, per annum, with apartments, board, attendance, and washing.

WEST BROXWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon, unmarried. Salary £50 per annum, with board, residence, and washing.

WEST LONDON HOSPITAL, Hammermith-road, W.—Assistant Ophthalmic Surgeon.

WINCHESTER, ROYAL HANTS COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £65, rising to £75, with board, residence, &c.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with board, lodging, and laundry. Also Second House Physician. Salary £50 per annum, with board, lodging, and laundry.

WRETHAM INFIRMARY.—Resident Medical Officer. Salary £50 per annum, with board, lodging, and washing.

The Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Llanwrtyd Wells, in the county of Brecknock.

Births, Marriages, and Deaths.

BIRTHS.

UNDERHILL.—On March 27th, at San Remo, Heme Hill, the wife of Thomas Hill Underhill, M.B., M.Ch., of a daughter.

UPCOTT.—On March 27th, at Leeds, the wife of Harold Upcott, F.R.C.S., of a son.

MARRIAGE.

MARJORIBANKS-SIMCOX.—On March 14th, at St. Thomas' Cathedral, Brompton, Captain J. L. Marjoribanks, M.S., to Elizabeth Homphray, daughter of the late Rev. H. K. Simcox.

DEATHS.

CHARLES.—At Ince, Swansea, on March 5th, Henry Evans Charles, M.R.C.S. Eng.

PHILLIPS.—On March 27th, at 33, Albany Villas, Hove, after a few days' illness, Lawrence William Kingslake Phillips, M.D., second son of Barclay Phillips of 7, Harpur-park, Edin.

Notes, Short Comments, and Answers to Correspondents.

A RETIRED MEDICAL MAN AND GOOD OPENINGS.

We publish below a communication from Dr. Jay, who tells us in his covering letter that he is "prepared for a fair fight," adding "If you suppress my reply I shall be compelled to seek another channel." The references to a fair fight and to suppression are due to the fact that we have previously received letters from Dr. Jay of a scurrilous nature, which we have refused to publish, not because we have the slightest objection to our readers knowing Dr. Jay's bad opinion of us, but because our morals are not now in question. The letter below contains what the other ones did not, an explanation of Dr. Jay's procedure; it is therefore inserted with pleasure and Dr. Jay can publish it also through any other channel which he thinks fit.

To the Editors of THE LANCET.

SIRS,—Having disposed of my practice in Faversham some months since I inserted, the following advertisement in one daily and two weekly papers:—

Small HOUSE wanted in the country with garden, within 25 miles of the City, not far from a railway station, and where a medical man would be appreciated. Send rent and particulars to Betta, 6, Stone St., Faversham.

I had a hundred replies at least from medical men, builders, house agents, auctioneers, surveyors, and private individuals residing within the distance I named, as well as many beyond. I should say that 20 or more, owing to a phenomenal increase of population and other causes, offered an excellent chance for starting in practice without interfering with the rights or vested interests, as I suppose you would call them, of men already upon the spot, many of whom had themselves started without purchase. That we have a right to go where we like to practise cannot be disputed, even should it be in Harley-street. The risk is with us, and it is utter nonsense to say in these days, when the profession is overcrowded and many men without the means to purchase, that a man is not to make a start for himself. With this in my mind, I have placed before young doctors some of the opportunities which presented themselves, for which I have received many letters of thanks. I have visited and investigated the possibilities of success which has been attended with expense, and by charging a nominal premium I try to recoup myself.

I repeated my advertisement with a still wider scope in my own interest, as I had a desire to settle again in the Eastern Counties, when I received more replies than in the first instance. Some were from populous villages with no doctor within five miles and several villages around similarly situated, begging me to take up residence with them. You will perceive I had no occasion to attempt to call No. 369 to No. 368, as you suggest, and which I defy you to prove I have attempted to do. I replied to No. 369 upon my own behalf, thinking it might suit me, but have not offered it to anyone with a view to profit. I had no occasion to do so, my desk being strewn with better things.

Your discharge of a public duty, as you term it, has, in this instance, been accompanied by an unpleasant seat upon a "mare's nest."

I think I am entitled to an ample apology for the attack you have made upon me. I ignore the title of people who have never been in practice to dictate rules of conduct for medical practitioners and so express them as to bring medical men into disrepute with their neighbours. Your method seems to be suggestive. I fail to find that you have proved a single instance of unprofessional conduct. Random accusations have no legal value.

Yours truly,

F. FITZGERBERT JAY.

Faversham, April 2nd, 1907.

We disapprove of Dr. Jay's method and of the use to which he has put our advertisement columns. We shall take what steps we can to provide that the latter do not offer him further opportunities.

ZAM-BUK.

To the Editors of THE LANCET.

SIRS,—Something really ought to be done re the sale of "quack" remedies such as the above. A woman in this village was advised by a neighbour to apply some "Zam-buk" for a sprained muscle. A painful vesicular eruption has been the result over the whole area where applied, and now the whole body is covered with a painful irritable rash. The constitutional symptoms are pronounced, fainting attacks being the most important, with general prostration. I know of another victim, but conclude that the present case is as good an example as any for the purpose in view.

I am, Sirs, yours faithfully,

FRANCIS G. BENNETT.

Great Glenn, Leicester, March, 31st, 1907.

obtained from various members of the natural order Papaver. Protopine is mentioned in Merck's list, dated November, 1895, as "Protopin, pure, precipitated from opium"; no price is quoted. According to Cushman's "Text-Book of Pharmacology," 10th edition, protopine differs from morphine in its pharmacological action. In frogs small doses produce a narcotic condition due to that following the injection of morphine, but the irritability does not show the same exaggeration afterwards; in doses cause complete paralysis of the whole central nervous system. In mammals no depression occurs, but the administration of protopine is followed by restlessness and eventually by convulsions which not seem to be of spinal origin but rather suggest a stimulation of the cerebrum and mid-brain. The heart is slow and weak and in doses of the drug cause some depression of the vaso-motor center. The respiration appears to be accelerated, except by large doses of protopine. A further difference between the action of morphine and protopine is found in the marked action of the latter on striated muscles, which subsequently react to electric shocks by a series of rapid contractions and relaxations, no real tetanus being produced. A fairly thorough search through the literature has not elicited further information concerning protopine.

H. E. C.—We understand that if the husband brought a suit, not divorce but for annulment of the marriage, in all probability a court would order the wife to submit to inspection and on refusal would assume her incapacity and make a decree of nullity. The matter is, however, as our correspondent says, a purely legal one, and the man in question should certainly obtain legal advice.

ETHICS.—The General Medical Council forbids the employment of unqualified assistants, except when they work directly under the employer's eye, for instance, as a pupil or as assistant in a surgery. If the facts are as our correspondent states, A is contravening the order of the General Medical Council.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynaecological, by Physiological, 2 P.M.), Soho-square (2 P.M.), City Orthopaedic (4 P.M.), St. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

TUESDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (2 P.M.), St. Mary's (1 P.M.), St. Mark's (2 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M.), Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (10th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), Samaritan (National Orthopaedic (10 A.M.), St. Peter's (2.30 P.M.), West (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Free (2 P.M.), Royal Orthopaedic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

THURSDAY (11th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West (1.30 P.M.), St. Mark's (2 P.M.), Gt. Northern Central (Gynaecological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (Metropolitan (2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Children, (1.30 P.M.), Royal Orthopaedic (9 A.M.), Royal Free (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynaecological, 1.30 P.M.), St. Peter's (2 P.M.).

FRIDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2.30 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), St. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (3.30 A.M.), City Orthopaedic (2.30 P.M.), Soho-square (9.30 A.M.), Golden-square (9.30 A.M.), Throat, Golden-square (9.30 A.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (13th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.), the Royal London Ophthalmic at the Royal Eye Hospital (2 P.M.), Ophthalmic (1.30 P.M.), and the (10 A.M.), the Royal Westminster Ophthalmic operations are performed daily. Central London phthimic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (8th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8 P.M.: Clinical Meeting. Cases will be exhibited by Dr. Chapman, Dr. Parkinson, Dr. Voelcker, Dr. Poynton, Dr. P. Weber, Dr. Clutterbuck, Mr. J. M. Donagh, and others.

Enquirer.—Protopine was discovered in 1871 by Hesse in opium, but it has since been found in a large number of other plants, including most plants of the widely distributed natural order Papaveraceae and *Argemone Mexicana*. At first the identity of the alkaloid obtained from these different sources was not recognised, hence it was known as "argemoneine" when prepared from argemone and as "fumarine" when

THURSDAY (5th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M.: Major L. Rogers, I.M.S.: (1) The Early Diagnosis and Cure of the Fre suppurative Stage of Amebic Hepatitis, (2) A Common Sporadic Seven day Fever of Indian Ports simulating Dengue.

WEDNESDAY (6th).—BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY (20, Hanover-square, W.).—5.30 P.M.: Adjourned Discussion on the Present Position of the Treatment of Tuberculosis by Marine Climates (opened by Dr. A. Street, Westgate-on-Sea). Paper:—Dr. N. H. Forbes: Church Stretton as a Health Resort.

DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—5.15 P.M.: Meeting.

HISTORICAL SOCIETY (London Institution, Finsbury-circus, E.C.).—8.30 P.M.: Discussion on Epilepsy. First Evening: Dr. F. Beach (Historical), Dr. G. Holmes (Pathology), Dr. P. Stewart (Masked Epilepsy), Dr. Mercier (Epileptic Insanity).

TUESDAY (11th).—BRITISH GYNECOLOGICAL SOCIETY (20, Hanover-square, W.).—8 P.M.: Specimens will be shown by Mr. B. Jessett and Dr. Swanton. Paper:—Prof. Jacobs (Brussels): The Radical Cure of Prolapsus Uteri.

WEDNESDAY (12th).—WIMBLEDON AND DISTRICT MEDICAL SOCIETY (Worple Hall, Worple-road, Wimbledon).—9 P.M.: Paper:—Mr. H. Tilley: The Diagnosis and Treatment of Certain Nasal Diseases frequently met with in General Practice.

CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M.: Papers.—Mr. G. H. Makins and Mr. P. Sargent: A Note on the Value of Anti-colon Bacillus Serum.—Mr. L. McGavin: A Modification of the Method of applying Prepared Filigree of Silver Wire to the Cure of Large Inguinal Hernia in Males.—Mr. W. G. Spencer: Acute Solitary Suppuration in the Psoas and Iliacus Muscles.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (8th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: College re-opens.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—Cliniques.—9.30 A.M.: Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Medical Out-patient (Dr. Whipple), Throat, Nose, and Ear (Mr. Carson), X Ray (Dr. Pirle).

TUESDAY (9th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynecological Operations. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Dr. H. Campbell: Clinique. (Medical). 6.15 P.M.: Lecture.—Dr. T. Williams: Laenneo and the Evolution of the Stethoscope.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—Cliniques.—10.30 A.M.: Medical Out-patient (Dr. Auld). 2.30 P.M.: Gynecological Out-patient (Dr. Gilles), Surgical Out-patient (Mr. Edmunds). Surgical Operations (Mr. Carson). Demonstration on Fevers (Dr. F. Thomson at the North-Eastern Fever Hospital, St. Ann's-road, N.W.).

WEDNESDAY (10th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Mr. J. Clarke: Clinique. (Surgical). 6.15 P.M.: Lecture.—Dr. N. Tizard: Some Recent Cases of Hematuria.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—Cliniques.—2.30 P.M.: Skin (Dr. Meachen), Eye (Mr. Brooks), Medical Out-patient (Dr. Whipple).

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M.: Demonstration.—Mr. J. Atkinson: External Ear.

THURSDAY (11th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Mr. Hutchingson: Clinique. (Surgical). 6.15 P.M.: Lecture.—Mr. M. Morris: The Treatment of Some Common Skin Affections.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—2.30 P.M.: Gynecological Operations (Dr. Gilles). Cliniques.—Medical Out-patient (Dr. Whiting), Surgical Out-patient (Mr. Carson), 3 P.M.: Medical in patient (Dr. Chappel).

FRIDAY (12th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynecological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. X Rays. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chancery-street, W.C.).—4 P.M.: Mr. S. Stephenson: Clinique. (Eye).

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—9.30 A.M.: Clinique.—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Surgical Operations (Mr. Edmunds). Cliniques.—Medical Out-patient (Dr. Auld), Eye (Mr. Brooks). 3 P.M.: Medical in patient (Dr. Leslie).

SATURDAY (13th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed exclusively "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring

under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newspapers (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and not to THE LANCET Offices.

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TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 4th, 1907.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radiation in Yards.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Mar. 29	30.20	S.E.	...	103	66	40	41	43	Fine
" 30	30.05	S.E.	...	80	64	46	46	49	Foggy
" 31	29.92	S.	...	106	69	42	46	49	Fine
April 1	29.93	S.	...	107	67	43	47	50	Hazy
" 2	29.58	S.W.	...	107	67	42	46	47	Cloudy
" 3	29.22	S.W.	...	106	58	47	50	53	Cloudy
" 4	29.34	W.	...	83	53	43	44	46	Fine

During the week marked copies of the following newspapers have been received:—*Merborough and Swinton Times*, *Sheffield Daily Telegraph*, *Newcastle Daily Journal*, *Morning Post*, *Standard*, *Daily Mail*, *Daily News*, *Tribune*, *Manchester Courier*, *Daily Telegraph*, *Morning Leader*, *Coventry Standard*, *Aberdeen Gazette*, *Birmingham Gazette*, *Liverpool Echo*, *St. Pancras Gazette*, *Birmingham Herald*, *Sheffield Evening Telegraph*, &c.

Communications, Letters, &c., have been received from—

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The Kumbleian Lectures

ON

THE INCREASE OF INSANITY.

Delivered before the Royal College of Physicians of London on
March 14th, 19th, and 21st.

By G. H. SAVAGE, M.D. LOND.,
F.R.C.P. LOND.,

CONSULTING PHYSICIAN FOR, AND LATE LECTURER ON, MENTAL
DISEASES, GUY'S HOSPITAL; CONSULTING PHYSICIAN TO
THE IDIOT ASYLUM, EARLSWOOD.

LECTURE III.¹

Delivered on March 21st.

MR. PRESIDENT, FELLOWS, AND GENTLEMEN,—The next generally accepted cause of insanity is alcoholic intemperance. That this is a potent cause, not only of actual insanity but of nervous weakness and instability in the individual and in his offspring, must be admitted. And there is a generally accepted belief that the character of the alcohol taken to a certain extent affects the results, so that those who consume the more potent alcoholic liquids suffer most nervously. It was till quite recently looked upon as an established fact that with higher wages and the increased consumption of alcohol, especially in its stronger forms, there was a definite increase in the pauper insane. This may have been true, but, as I shall point out later, the increase of insanity at the present time certainly bears no actual relationship to the consumption of alcohol. There is no doubt whatever that the people in England at present are far more temperate than they were. The returns as to the consumption of all forms of alcohol show the marked reduction in the consumption, and this probably is more marked in the lower middle and lower classes than among the higher classes. One would therefore have expected, if there is a direct relationship between the consumption of alcohol and mental unsoundness, that there would have been a reduction rather than an increase of insanity at present. But, as I have said, this is not the fact. It is always dangerous to come rapidly to conclusions on comparatively slight statistics or general information. But I am bound to say that the very large number of total abstainers whom I see in consulting practice has made me wonder whether the complete and total change from moderate indulgence in alcohol to total abstinence had been altogether for the good, the mental good I may say, of the race. It is well, however, to remember that a certain proportion of total abstainers are the descendants of alcoholic parents who, having seen the disastrous results of excess in a parent, have determined at once to refrain altogether. Such individuals have already a weakened nervous system by inheritance, and therefore that they should become abnormally sensitive and tend to melancholy is not surprising. There are others who are total abstainers not having strength of will to be moderate. Such people are predisposed to break down mentally if unusual strain is thrown upon them. It is interesting to note that in Ireland, where certainly a considerable amount of alcohol is consumed, the medical superintendents of many of the asylums report that, next to heredity, they look upon alcoholic excess as the chief cause of insanity; a second cause is given by a large number of the superintendents—excess of tea drinking. I am hardly prepared to accept this as a cause, yet it is right that I should mention it. There is no doubt that excess of alcoholic stimulants leads to direct alteration in the nutrition of the brain and nervous system, and also that, if the induced recurring alteration occurs, there will be permanent nutritional changes which become visible in the whole nervous system. And these changes give rise to corresponding mental symptoms. Thus the peripheral neuritis which is frequent in cases of chronic alcoholism not seldom gives rise to cutaneous hallucinations; and gastrointestinal trouble produced from the same cause may also give rise to delusions. Thus, as a result of peripheral neuritis, chiefly affecting the limbs, it is a common experience to meet with patients—and I think I might say more commonly women—who complain that they are annoyed,

electrified, or interfered with as far as their skin was concerned, by some systematic persecution. In the second group one not infrequently meets with gastric alcoholics who accuse persons of tampering with their food. It will thus be seen how readily delusions and hallucinations of the senses may be the direct outcome of chronic alcoholism. Continued excess leads to premature degeneration of the brain. Thus on one hand we have symptoms allied to delirium similar to those produced by general toxic influences, while on the other we have symptoms of premature senility. And the whole group of symptoms, which have been described more recently under the name of Korsakow's syndrome, depend almost invariably on toxic influences and are most marked in alcoholic cases and in senility with mental decay; and Metchnikoff has described toxins which he believes to be associated with senility. And it is interesting to recognise that this group of symptoms is constantly met with, not only in the toxic conditions I have referred to, but also in senility. We have therefore alcohol producing a definite set of symptoms, and I say that any mental disorder which may be produced temporarily may, if the toxic influence is continued, become established as a morbid habit, associated with organic change. I have also pointed out that chronic alcoholism leads to something more than mere toxic changes, to permanent decay of the whole nervous system.

The next, and a most important, question, especially in relationship to the increase in insanity, is the fact that alcoholic parents tend to have degenerate children. The children of chronic alcoholics have most of the characteristics of the children of the highly neurotic or the degenerately insane; idiocy, imbecility, and moral insanity being most marked in the children of the chronic alcoholic. Dr. F. W. Mott recently published some very important observations in relationship to alcoholism and nervous disorder. Similar observations were recorded by Mr. W. Bevan Lewis. And I would sum up their results as follows. Dr. Mott considered that one-fourth of the out-patients whom he saw at Charing Cross Hospital had alcohol as an efficient or coefficient in causing the bodily disease for which he was consulted. He believed that the grocer's licence tended to drinking among women, which produced many of the polyneuritic neuroses. Dr. Mott goes so far as to say that he is of opinion that there is no proof that insanity itself would diminish to anything like the extent that is believed by many enthusiasts if alcohol were altogether abolished, and I have already said the same. Next follows the startling statement that the people who were in general hospitals and who consulted him in the out-patient room as a result of alcoholic excess, generally had visceral disease of some kind: that they had kidney disease, or liver disease, or some polyneuritis. On the other hand, at the asylum he found that those patients who were admitted suffering from the insanity of alcoholic excess rarely, if ever, had the pathological signs generally associated with alcoholic excess. So that the post-mortem examinations of the insane from alcohol rarely provided cirrhotic liver or contracted kidneys. Various interpretations may be given to this. One is that some people are predisposed to be affected by alcohol along their digestive tracts, whereas others are more affected along the nerve lines. Others have thought that when one system was affected, whatever the cause might be, the other would be free, and that, in fact, the old belief was true, that if a man had a bodily disease he would not have a mental one, or if he had a mental one he would not have a bodily one. The interpretation which I believe Dr. Mott prefers is this: that the people who become insane as a result of alcohol require quite a small amount of alcohol to upset their balance in comparison with others: that, in fact, they may be compared to those persons who, having had some severe head injury, ever afterwards are predisposed to be easily affected by alcohol. The fact, however, is an important one, and although one has not time to consider the question of alcoholism as written about by Dr. A. Reid, yet one has to recognise that there is such a thing as the survival of some alcoholics.

Having referred to the effect of alcohol in the production of insanity it is necessary to refer to the effects of alcohol when added to other causal conditions. I have very little evidence indeed to support the contention that general paralysis of the insane depends to any extent upon alcoholic excess alone. My own experience leads me to believe that from 70 to 80 per cent. of the cases of general paralysis which I see have suffered from syphilis. But in nearly all

¹ Lectures I. and II. were published in THE LANCET of March 30th (p. 555) and April 13th (p. 533) respectively.
No. 4363.

these cases I should say that the patients had led exciting, trying lives, that they were people who had indulged freely in alcohol and, as a rule, were large meat eaters. So that alcohol, when added to syphilis and to other abnormal or exciting conditions, may be considered as one of the causes of general paralysis of the insane. I add the notes now from the Commissioners in Lunacy in Ireland in relationship to alcohol as a cause of insanity.

ALCOHOLIC EXCESS.

General.—The proportion attributed to alcohol underwent some fluctuations during the decade but in 1903 it was only 0·8 per cent. higher than in 1894.

Perhaps as regards its effects on the future prosperity and health of the population the most important of these causes is intemperance in the use of alcohol.

As already stated, these statistics show that alcohol was found to have been the principal cause of the outbreak of mental disease in 15 per cent. of the cases admitted to asylums during the decade under review. This does not differ materially from the proportion in earlier years.

Page 2.—Alcohol is, no doubt, a frequent cause of mental breakdown. It is difficult to differentiate as to whether it is more frequently a cause or that excessive indulgence is a result of mental weakness or instability. (Lawless.)

Page 4.—Alcohol is an increasing factor in the causation of insanity, both by its acute and chronic toxic effect. (Mills.)

Page 13.—Alcohol is often suggested as being a fruitful cause, but my experience would not justify such a conclusion with regard to it. Undoubtedly the drink sold at fairs and markets is of the worst kind and must have an injurious effect on those who indulge in it; still, it may be fairly claimed for the female population of the district, and especially those residing in the country villages, that only very rarely indeed do they ever taste intoxicants. So rarely that I would be inclined to eliminate this as a cause of the insanity among them. (Hatchell.)

Page 23.—In close on 9 per cent. of the cases admitted there was the strongest possible evidence that alcohol was the main cause of the evil. (Nolan.)

Page 39.—I am of opinion that the next greatest cause of insanity is drink, and by this I mean not only persons become insane by drinking to excess but also that many of the children of confirmed drunkards who are saturated with alcohol become weak-minded or insane. (West.)

Page 45.—Either drinking still exists in this district but to a much less degree of late. (Hetherington.)

Page 61.—The most frequent causes will be seen to be hereditary predisposition and alcoholic excesses. (Oakshott.)

Many years since, when the first of recent epidemics of influenza appeared, certain medical journals pointed out what seemed to be the immunity from this disease of the insane in asylums; but it was soon made manifest that the attendants and nurses who went into the outer world contracted the disease, and when once it was started in an asylum it spread as rapidly as it did elsewhere. I pointed out, on the other hand, that it was a very powerful starting point for neuroses, and it is now pretty generally accepted that it predisposes to such neuroses and may be either a predisposing or exciting cause. I believe that it has been a real and efficient cause for inducing any increase which now exists, and I believe from my personal experience that it is and has been more powerful than all the other causes put together. I fear that I shall not have time to do more than point out the effect which influenza has had generally on the production of nervous disorders of various kinds. In the first place it is a constant cause of most obstinate insomnia; and as food and digestion are to the body, so is sleep to the whole nervous system. It causes painful neuralgias and often disturbs digestion and nutrition.

But from these general statements I pass to the more concrete and definite ones. Influenza, like other fevers, may set up any form of psychopathy. Morbid mental symptoms may come on at any period of the influenza; it may start any form of insanity. Thus, the febrile stage may be followed by acute delirious mania of the worst possible type or it may give rise to sleeplessness with melancholia, either of an active or passive kind. It may lead directly to dementia either of a permanent or transient type. There is, however, no specific form of insanity which can be called influenzal. I believe influenza produces effects on the nervous system comparable with those depending on strong neurotic heredity or alcoholic or senile degeneration. Therefore, after several attacks of influenza it is not uncommon for fully organised delusional insanity, with grandiose ideas or ideas of persecution, to appear. In patients with strong neurotic heredity the first attack of insanity often follows influenza. In patients who have had previous attacks of insanity influenza may start a fresh attack, which may or may not follow the course of previous attacks. The mental disorder need have no relation to the severity of the attack of influenza. Though not a cause of general paralysis of the insane, yet it may be the exciting

cause, so that a person who has other causes of degeneration, such as syphilis and alcohol, after an attack of influenza may rapidly develop all the symptoms of general paralysis of the insane. In a few instances I have seen attack of influenza modify an attack of insanity, and relieve it. It is noteworthy that suicides increase markedly after an epidemic of influenza.

While fully recognising that the time at my disposal only allow me the opportunity of bringing before you most potent causes of mental instability and those which I think may, to a certain extent, be looked upon as causes of any increase of insanity which is found to exist, I feel I must consider the question of sexual morality. I do believe the present time is much better, or much worse, than the past, but there are certain considerations which I believe to be important and to which I now refer. Marriages in England at all events, less frequent than they were and men certainly it is common for the marriages to take place at a later age, so that many more men remain celibate at 40 years than formerly. This, of course, cannot be taken as a single and isolated fact. It is associated with the greater strain and tension required to make a position in life, and is also associated with the growth of ideas of luxury which are present now both with men and women. But a still more serious fact is that after these marriages there are fewer children and also that mothers much less frequently see their offspring than they did. There, again, they look up the facts of pregnancy and lactation as interfering with their busy social life, therefore they avoid these contingencies as much as possible. I believe sexual continence is possible and admirable, but it is constantly nowadays replaced by onanism, and though I do not attribute any serious increase of insanity to this head, yet the dread of its results, which is so commonly enforced upon the public by quacks, has a very serious influence in producing a number of youthful hypochondriacs and a considerable number of suicides. A few days pass but that I am consulted about the effects of onanism in the production of insanity. I do not believe that it produces more insanity than it did formerly, except that there are more celibates who indulge in the habit to a longer period and greater extent than if they married early. I am also frequently consulted about women whose whole mental character has become changed as a result of restriction in child-bearing and nursing. On some, probably the majority of civilised women in England and France nowadays, the feeling that in thus acting they are opposing Nature's law does not weigh very heavily. But still, there are many women who feel degraded, and even sinful, in thus acting and I know that many leaders among obstetric physicians recognise the neurotic woman who is produced by conjugal frauds. Though I should not say that this class adds very materially to the sum of the increase of insanity, yet I must speak very definitely as to my belief that it contributes to a certain amount.

And now to proceed to the definite conclusion of the whole matter. I have already said that, in my opinion, there is an increase of insanity, that this has been steady in all classes of society, and that the reports of the Commissioners of England, Scotland, and Ireland all support this statement. So far as the lower orders are concerned the statistics are clear, but as regards the upper classes the different countries there seems to be a decrease. To this I shall refer later. There has also been a slight temporary decrease in Scotland and England, but this really does not, I think, interfere with the pretty steady tide of increase. In England there is this year a decrease among registered or certified patients of unsound mind. But, as I have said, this is of very little value, I think. For, especially in reference to the richer classes, whatever may be said as to the feeling among the poor in relationship to asylums and certification, I believe there never was a time when the word "asylum" and the term "lunatic" were more dreaded among the well-to-do than at present. Among the causes for this increased dread doubtless is the growth by education of the feeling of the danger of inheriting mental disorder. If I have been able in any way to show that this dread is too dominant good may result. The feeling undoubtedly exists that insanity is one of the most transmissible of all diseases, and this has weighed, and still weighs, heavily on the lay mind. They will ignore other forms of disorder, even though they may be somewhat serious, but they will not admit the existence of insanity in the family unless it is absolutely forced upon them. Anything that can be treated in a home of rest by Dr. Mitchell, or by change of residence and travel, appears as

thing to their minds, but as soon as a patient has been certified they believe an indelible blot rests on the family, a blot which will have a serious influence upon the future, say, marriageable daughters. When I tell you that there are several thousand medical men in England who are willing to certify so-called mild mental cases into their homes it really shows how widespread this home-treatment of nervous and mental diseases is. Therefore, when the Commissioners report a decrease in the certified insane in England, it of course has to be discounted very seriously by the fact that the dread of asylums and the fear of certification act so strongly that many patients who had better be certified are sent into private care. The various bodies of commissioners have felt it their duty to consider especially the question of the increase of insanity, and so far as possible to reassure the public that they, at all events, have no great fear of any serious increase.

And now I must proceed to details; and although I cannot expect to make the dry bones of statistics live, yet I will make such use of them as is necessary. On January, 1906, there were 121,976 certified patients in England, this being an increase of 2150 on the year 1905. This rate of increase is less than that of the average increase of the previous five years, which was an average yearly increase of 2807, the average increase for the ten previous years being 2554. The chief decrease was in the numbers of private patients in licensed houses. It is important, as I shall have to repeat later when considering the apparent increase of the poor in asylums, to recognise that many more patients are now sent to asylums who formerly were retained in workhouses. Thus, nearly 50 years ago only 58.2 per cent. of the pauper lunatics were in asylums. This is a very important fact to remember, for recently in England, Scotland, and Ireland pauper persons of unsound mind of all degrees have been swept into the class of certified lunatics, and this class in future will not be so efficient in adding to the numbers of the certified insane. The greatest increase is noticed in England in the metropolitan area and in the home counties. The lodestone of the capital attracts the weak even more than it does the strong, the failing in mind and morals become aggregated in the larger centres in increasing numbers. If we compare the returns of the certified insane in 1859 with those of 1906 the numbers are startling if not appalling. In the former year in England and Wales there were 38,782. Now there are 121,976, that is an increase of 231 per cent., while the population increased during that period only 75.4 per cent. The ratio of certified patients to the general population in 1859 is 1 to 283, that is, 35.31 to every 10,000 inhabitants, whereas in 1859 it was only 18.64 per 10,000. In passing, I may refer to the recovery rate, which I regret to say does not in any way encourage one to think that the present humane methods of treatment have greatly increased the numbers cured. In an article "Statistics of Insanity," by Sir Charles Hood from 1846 to 1855, he refers to the percentage of cures being quite as high as at the present time. He gives the aggregate of the 100 years ending Dec. 31st, 1855: admitted into Bethlem Hospital, 19,373 patients; cured, 8341, a percentage of 43.5. From 1846 to 1855, 2726 were admitted, and during that period the high percentage of recoveries was 54.19. It is well, of course, to remember that the patients admitted into Bethlem Hospital were and are of a special type, no chronic, or incurable, or epileptic cases being received. But even taking that into consideration the rate of cure of the last return is no higher than it was nearly 100 years ago and no higher certainly than it was 50 years ago. This all points, I think, to the fact that only a certain number of insane are curable under any conditions whatever, and that the idea of any universal system of treatment greatly increasing the recovery rate is altogether misleading. The Scotch Commissioners this year give an account of the increase since 1853, in which year there were 5824 certified patients, whereas on Jan. 1st, 1906, there were 17,450, showing an increase in nearly half a century of 11,626. This increase is confined to the general public asylums, there being a decrease of 624 in the residents in private asylums. A very large increase of patients in private dwellings is noted, and this is a point of special interest in Scotland, where the system of boarding-out is carried on largely and successfully and certainly more than is possible in England. In Scotland during the last three years there has been a decrease of insane persons in proportion to the population, and this is the first time such a thing has occurred since 1853. During the whole period the lunatics

have increased 200 per cent., while the population has increased only 56 per cent. Among the causes of total increase of admissions are a large number of senile cases from infirmaries, but this must not be taken to connote a general deterioration of the race. In Scotland, as elsewhere, the struggle for existence renders it more difficult for the poor and healthy to maintain the feeble or insane in their own houses, the residence of such people interfering with the wage-earning capacity of the family, so that it is altogether easier for them to contribute something towards the maintenance of a patient in an asylum than to keep him at home. And with the steady development of treatment of weak-minded and feeble people in cottage homes the demand has created a supply that proves, at all events in the north, to be quite satisfactory. It is noteworthy that—whether there is an increase in other forms of mental disorder or not being doubtful—there is in Scotland as well as in England a marked increase in the number of general paralytics. Not a quarter of a century ago the numbers were quite small; now they are large and increasing. And what is more astonishing is that the increase is more marked and more recognised in Edinburgh than in Glasgow, though, as a rule, one finds more general paralytics in big manufacturing cities than in smaller residential capitals. Another anomalous point among the general paralytics of Scotland is that the increase has been more marked among women than among men. The increase of general paralytics, then, is one of the distinct causes of increase of insane individuals. The Irish Commissioners this year have made a special report on the alleged increase of insanity. I have already had occasion to quote from this and it will be necessary now to refer to it more in detail. The contribution has the advantage of giving the individual opinions of the superintendents of the various asylums and also the conclusions arrived at by the Commissioners themselves. I may briefly, before referring to the detailed reports of the Commissioners, give their conclusions, which were: That the apparent increase is due chiefly to accumulation and that the increase is more apparent than real; that patients live longer, being retained longer in many cases (in many cases all their lives) in asylums. In reference to this I might quote Dr. William Farr, who thus expressed the same idea: "There may be ten times as many lunatics in civilised as in barbarous countries, and not because the tendency of insanity is greater but because the lunatics live ten times as long as they did." The increase depends, too, on the withdrawal of a large number of quiet, harmless, senile, or weak-minded persons from their homes. This is shown by the fact that the general census returns showed the number of such persons to be very greatly reduced. Doubtless the drawing of the healthy and able-bodied to the cities and to the colonies has also tended to the removal of the more feeble to the asylums, as there were fewer people personally able to look after them. The unusual increase pointed to some special causes and the Commissioners have given their report under five headings. To some of these I have already referred: heredity, including consanguineous marriages, malnutrition and bad diet, the inordinate use of stimulants, and mental strain due to agricultural depression. These returns provide very interesting matter for further consideration. The effect of emigration has been that the healthier and younger go abroad and the less fit and the older remain behind; and, what is certain, quite a considerable number of those who break down in America are repatriated as insane, so that the healthy remain there, whereas many of the feeble are returned to swell the list of lunatics in Ireland. This is made clear by the fact that in the 30 years between 1871 and 1901 there was no increase in the proportion of insane in reference to population between the ages of 20 and 55. There was, however, a very large increase in the ratio of insane to population in the old-age period. In Ireland the amount of insanity in proportion to the population is greater in the most remote rural districts, whilst in the busiest towns the ratio of the insane to the same population is lowest. This is due, of course, to the exodus of the healthy from the country places. Even the first admissions are misleading, as these represent failures after residence at home; so that a very large proportion of people who come under the head of "first admissions" after all have been insane for long periods before they are sent to an asylum. It has often been said that the only way we can judge of the relative increase of the insane in a country is by reckoning the number of first admissions; and the Commissioners in Lunacy have, of recent years, taken special pains to show the proportion of

first admissions to other admissions. It is an interesting point, and one not easy to explain, that the Irish in America produce a much larger proportion of insane patients than any of the other emigrants. I remember being very much struck myself when in America with the very large numbers of physical, social, and mental failures represented in the asylums and infirmaries near New York that the Irish provided. This has, of course, been explained by the instability of the Celtic temperament, but that hardly seems sufficient. Doubtless there are other contributing causes; among others, the home-loving instinct of the Irish is very characteristic and also their tendency to wander. And this tendency to wander is pretty frequently recognised as an early symptom of mental disorder. It might be interesting to note that similar conditions exist in America.

Before proceeding to my general summary and conclusions I feel that I cannot do better than quote from Dr. Mott:—

A pathology which only considers the morbid macroscopic and microscopic anatomy is useless; there must be a correlation of the clinical and psychological symptoms with the morbid physical, chemical, and structural changes of the organs and tissues of the body, particularly of the brain. No one who has had any practical experience of insanity can come to any other conclusion than that the majority of people become insane because there is an inborn tendency in their nature. In fact, the pathology of the causation of insanity of an individual resolves itself into a study of his personality—what he was born with and what happened to him after birth. Numbers of factors may conspire or combine after birth to bring out this innate tendency to mental derangement. It may be asked, Can a stock which is sound mentally become unsound by its members being subjected to an unfavourable environment? Many people deny the possibility of mutation in the germ plasma, but as the nervous system is the latest and most complex and differentiated tissue in structure and function mutations and variations may occur in consequence of favourable or unfavourable environment. The commingling of the germ cells of two stocks of suitable or unsuitable temperaments may by a happy or unfortunate chance produce sporadic genius or sporadic insanity.

And now to proceed to my general conclusions. I do not find there is any real ground for alarm in the increased number among the insane. There are many reasons for the apparent increase, as I have already pointed out. I do find there is an increase of insane persons suffering from general paralysis of the insane and from the various forms of senile dementia; but I do not think there is any evidence pointing to alcoholic excess as at present causing any real increase. I think influenza, on the other hand, has had a very serious effect in predisposing to nervous instability, which predisposes to neurosis generally, and to insanity undoubtedly. And thus, though general paralysis and influenzal infection may be causes of insanity, I cannot believe that any real benefit will follow any definite medical treatment of insanity as one disease. That the time is approaching when general paralysis may be found to be a curable disease is possible, and that we may learn a great deal from the clinical study of the forms of insanity depending upon micro-organisms I also admit, and that it will be a great advantage to the world at large, and to the medical profession in particular, when there is greater convenience for the study and investigation of mental disorders. It is, however, extremely difficult to understand how the huge mass of chronic insanity is ever to be dealt with. England is becoming more and more crowded and therefore is less able to have detached colonies where the weak-minded of all classes and both sexes can be segregated. That very great good may result from the early treatment of the insane is shown by the experience of Dr. J. Carswell at the Glasgow Hospital for the Insane. They have two wards specially adapted for the reception of acute cases of mental disorder, and it is remarkable that a very large proportion of these are cured or recover and are allowed to go home without having to be sent to an asylum. Altogether, of 1027 admissions into the hospital 583 had to be sent to asylums, 415 were discharged well, and 30 remained under treatment. Of those certified 164 had had previous attacks and only 364 represent acute fresh cases. The number represents the annual production of pauper lunacy. The proportion per 10,000 of population for the year was 5·87—that is, less than 6 per 10,000 of the population became pauper lunatics in 1905-06. When viewed in the mass the statistics of pauper lunacy look alarming, but such a proportion occurring in a large industrial population such as that of Glasgow is not a real cause of fear. It is noteworthy, too, that there is no increase in persons of the young and the middle ages, the increase being greater after the age of 60. There has been no increase of late years in Scotland and Dr. Carswell is hopeful that the high-water mark has been reached.

So far, then, I have brought my subject to a close, and there is an increase among the insane, that it is not alarming,

either in number or in quality, that many other causes besides inheritance contribute to these mental catastrophes. And one feels that there is still scope for treatment of many cases of mental disorder perhaps on different lines from the past. But with all hope one must mingle caution.

The Hunterian Lectures

OR

THE PATHOLOGY OF MELANOTIC GROWTHS IN RELATION TO THEIR OPERATIVE TREATMENT.

*Delivered before the Royal College of Surgeons of England on
Feb. 25th and 27th, 1907,*

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LECTURE II.¹

Delivered on Feb. 27th.

MR. PRESIDENT AND GENTLEMEN,—My last lecture was mainly occupied with a study of the course of dissemination in a case of melanotic sarcoma which, pending wider investigations, must be taken as typical. I endeavoured to show that centrifugal permeation of the lymph-vessels round any focus of melanotic sarcoma, whether primary or secondary, is the primary factor in dissemination, and that embolic spread by way of the blood stream is a later event, dependent on the infiltration and invasion of the veins and arteries from comitant permeated lymphatics. In the present lecture I propose to consider briefly and in somewhat disconnected fashion some miscellaneous points connected with the pathology of melanotic growths, reserving the most important question, that of operative treatment, for the latter half of my lecture.

Some writers have used the term melanoma as equivalent to "melanotic sarcoma." Although this usage has the authority of Mr. F. S. Eve,² it is, I think, better to use the word "melanoma" for all tumours containing melanin granules, whether simple or malignant. Just as a distinction is drawn between a simple and a malignant adenoma, so the melanomata may be divided into simple and malignant melanomata. It is probable that the melanomata only occur in situations where melanin-containing cells are normally found. These tumours occur most commonly upon the skin, especially upon its deeply pigmented areas, and within the eye. More rarely they may arise upon those mucous membranes which march with the skin at the orifices of the mouth, the anus, and the vagina. As rare curiosities they have been met with in ovarian dermoids and in one unique case a melanotic tumour arose in the spinal cord.³ They occur in horses, most commonly in grey horses, in oxen, and in dogs, as well as in the human race. It is relevant to note that Mr. H. W. Acton has observed pigmented cells in the skin of ovarian dermoids and that pigmentation of the spinal pia mater is commonly met with. In view of these facts it is necessary to consider what light normal histology can throw upon the origin of the melanomata.

THE CHROMATOPHORES.

Connective tissue cells containing melanin granules, stellate in shape, with many long branching processes, or fusiform with long pennant-like terminations, occur in the upper layers of the dermis, more especially in areas of normally pigmented skin, such, for instance, as the skin of the scrotum and of the mammary areola. These cells resemble in every respect the pigment cells of the choroid. They are found more abundantly in the skin of the negro than in that of the white man, and the darker the tint of the skin the more numerous are the chromatophores of the underlying dermis. Nevertheless, the bulk of the pigment in the negro's skin does not lie in the dermis but is collected in the deepest or protoplasmic layer of the

¹ Lecture I. was published in THE LANCET of April 6th, 1907, p. 927.
² Eve: A Lecture on Melanoma, The Practitioner, February, 1903.
³ Hirschberg: Chromatophora Medullæ Spinalis, Virchow's Archiv, Band cxxxvi., p. 229.

epidermis. It would thus appear at first sight that epithelial cells, as well as connective tissue cells, possess the power of elaborating melanin, and presumably also of originating melanotic tumours. Repeated observations have, however, convinced me that the pigment granules of the stratum mucosum of the negro's skin form a branching network which is mainly intercellular in position. Occasionally the main lines of this network can be seen passing down into the underlying dermis. These observations support the view which holds that the pigment of the negro's epidermis is not produced within the epithelial cells but is contained within long branching processes of the underlying connective cells or chromatophores, which thrust themselves between the adjoining epithelial cells. You will remember that the pigment cells of the reptilia possess great amoeboid power, sometimes thrusting out long pigmented processes and again withdrawing them if the light becomes intense. In the negro's skin a rete of similar pigmented processes derived from the dermis appears to enwrap the deeper epithelial cells of the epidermis, much as the dendron of a nerve embraces a nerve cell. I notice that Mr. Willmott H. Evans in his recent Erasmus Wilson lecture on Leucoderma¹ has expressed views very similar to those just stated. If the melanin granules of the negro's skin originated within the epithelial cells it would be natural to expect that the older horny cells would still contain the inert and stable melanin particles originally formed in them. This is not the case; the superficial layers of the negro's epithelium are almost entirely free from melanin granules. It would appear that the growing epithelial cells as they are pushed towards the surface extricate themselves from the entangling network of processes and show themselves in their true character as unpigmented epithelial cells of the usual type.

Mr. Willmott Evans, in the valuable lecture to which I have referred, quotes Karg's experiments on skin-grafting from a white man to a negro and *vice versa*. Negroid skin soon loses its pigment when transferred to a white man, while the skin of a white man becomes dark when implanted upon a negro. Since the epithelium is the vital element of a skin graft it seems a fair inference that the dermis, and not the epithelium, is the vital laboratory for pigment and that the epithelial layer is only passively impregnated by the pigment produced deeper down in the chromatophores of the dermis.

THE RELATION OF CHROMATOPHORES TO HAIR.

Attention does not seem to have been called to the special abundance of the chromatophores in the vascular mesoblastic papilla upon which the bulb of a human hair rests, and in the growing mass of cells which forms the hair bulb itself. The fact is not without significance in view of the abnormal formation of hair which is so often seen in moles. It would appear that the chromatophores play an important part in the nutrition of the hair, even if they do not enter into its structure. A study of the structure of the hair papilla appears to throw light upon the polymorphism of the cells of malignant melanomata. In some hairs, presumably young ones, the hair papilla consists entirely of richly protoplasmic round or fusiform cells, quite devoid of pigment, and hardly distinguishable from the cells of the hair bulb. In others, again, unpigmented fusiform cells are mixed with fusiform pigmented cells—typical chromatophores (Fig. 10). The long processes of these chromatophores, and even the cells themselves, often pass in between the overlying cells of the hair bulb, so that an appearance is produced like that of the negro's epidermis. Sometimes coarse pigment masses are seen between the chromatophores, and these are presumably cells which have become so pigmented that their cellular identity is lost. Other hair papillae are fibrous in structure, with scanty nuclei and little or no formation of pigment. There can, I think, be no doubt that the various forms of cell found in the hair papilla, varying from a richly protoplasmic rounded cell to a typical branched chromatophore, are stages in the development of one particular form of cell, and that the pigment-masses or fibrous bundles are stages in the degeneration of the same variety of cell. Action has observed collections of chromatophores at the base of the hooklets which stud the shark's skin. Here, again, the chromatophores are seen playing a part in the nutrition of the epidermis. A consideration of normal minute anatomy thus points to the view that the malignant melanomata are mesoblastic and not epithelial tumours, and supports

Ribbert's view that the malignant melanomata are "chromatophoromata," and that the varying forms of cells found in them all represent stages in the development or decay of the normal chromatophore.

Passing now from the normal melanin-forming cells of the body we must briefly consider the simple or non-malignant melanomata.

PIGMENTED WARTS AND MOLES.

In English surgical literature, as Dr. Wilfrid Fox has pointed out, the name *nevus* is often restricted to an area of skin which exhibits an excessive formation of blood or lymphatic vessels, while by the Germans the name *nevus* is applied to any localised patch of skin which shows defective development and a fibro-cellular structure, quite apart from the question of its degree of vascularity. Thus, all the abnormally pigmented patches of congenital origin which are so frequently present upon the skin are included by the Germans under the heading of "pigmented *navi*." They may appear as simple black or brown stains—beauty spots—or as raised patches of varying size and shape, often covered with hair, or as pigmented warty areas with evident papillary prominences—the "wart-fields" described by Mr. J. Bland-Sutton. Dr. Max Tische² has recently investigated the little bluish spots, "blue *navi*," coloured like gunpowder tattooing, which are frequently seen.

All these varied forms of simple melanoma are practically identical in structure. They show pigmentation either of the stratum mucosum of the epidermis, particularly in the inter-papillary-epithelial cell columns, or of the sub-epidermal layer of the corium, or pigmentation of both layers. Apart from their pigmentation the simple melanomata are characterised by the presence of lines and groups of unpigmented richly protoplasmic cells, "*nevus* cells," fusiform or rounded in section, lying in the superficial third of the thickness of the dermis, but deep to its pigmented layer. (Fig. 11.) Save that the *nevus* cell is smaller, the appearance presented by these simple melanomata is frequently indistinguishable over considerable areas of the section from the microscopic appearance of an alveolar melanotic sarcoma. (Fig. 12.)

The warty overgrowth seen in certain moles would appear to be a secondary characteristic, probably dependent upon a local imperfection of the lymphatic circulation. Warty overgrowth as a consequence of lymphatic obstruction is familiar in elephantiasis.

THE NATURE OF NEVUS CELLS.

Malignant melanomata of the skin appear, as a rule, to be derived from the *nevus* cells of pigmented warts and moles. If these cells are shown to be of mesoblastic origin, then the malignant melanomata are sarcomata. If, on the other hand, they are epiblastic in origin, then the malignant melanomata are carcinomata.

According to Borst and Bajer the lines and groups of *nevus* cells are derived from the inward proliferation of the endothelium of the lymphatic vessels and spaces. Borst points out that pigmented cells occur only in the superficial layer of the corium, between the *nevus* cells and the epidermis, and further that in this layer evidence of cell proliferation is absent. Ribbert has observed transitional forms between the unpigmented spindle-shaped *nevus* cell and the typical pigmented star-shaped chromatophore. He holds, upon arguments which seem to me convincing, if not conclusive, that the *nevus* cells are young chromatophores which have not yet acquired their pigment. Since the chromatophores are branched connective-tissue cells lying within, or lining the walls of, lymphatic spaces there is no contradiction between Ribbert's view and that of Borst. In sharp contradistinction to these views is the opinion of Unna and his school in Germany and of Mr. Eve, Dr. Wilfrid Fox,³ and others in this country. Unna believes that the lines and groups of *nevus* cells are derived from down-growing processes of the cutaneous epithelium. In my opinion, although I approached the subject expecting to be convinced of the carcinomatous nature of malignant melanomata, the views of Unna are certainly erroneous. Frequently, in pigmented moles, the epidermal layer is practically normal and is everywhere separated from the underlying *nevus* cells by a thin perfectly continuous layer of fibrous tissue. Moreover, though I have seen *nevus* cells

¹ M. Tische: Ueber Benigne Melanome, Virchow's Archiv, Band cxxviii, p. 232. I am indebted to Dr. Tische for kindly sending me some of his specimens.

Wilfrid Fox: British Journal of Dermatology, January, 1906.

coming into very close relation with the overlying epithelium, and indeed apparently continuous with its down-growing processes, it is always possible to say within narrow limits where the epithelium leaves off and the *navus* cells begin. The tendency of the normal *chromatophores* to thrust their processes between the deeper layers of the epithelium sufficiently accounts for the absence of a sharp line of demarcation. The richly protoplasmic nature of the *navus* cells may indeed give them an appearance like that of an epithelium, but such an appearance is valueless as a proof of their epithelial nature. Connective-tissue cells may closely simulate an epithelium. For instance, the layer of odontoblasts in a developing tooth, although admittedly of mesoblastic origin, may present all the appearance of a layer of epithelium. In shape, size, and other respects the *navus* cells in many moles are entirely unlike cutaneous epithelium. It is only exceptionally that the appearance of the two kinds of cell is so similar as to lead to confusion. Lastly, the intercellular prickles of cutaneous epithelium have never been demonstrated between *navus* cells. Blood-vessels may be seen running within the groups of *navus* cells.

The intimate relations which I have observed between the *chromatophores* of the hair papilla and the bulb of a normal hair may serve to explain many of the peculiarities of pigmented moles. A mole may be regarded as a district in which the down-growing processes of epithelium from which hairs are derived have failed to come into proper apposition with the upgrowing dermal hair papilla. The mesoblastic cells (*chromatophores*) of the abortive hair papilla proliferate abnormally and form *navus* cells, while the down-growing epithelial processes remain to convey the erroneous suggestion that *they* are the source of the groups of *navus* cells with which they are sometimes apparently welded. Thus a pigmented mole might, perhaps, not inappropriately be described as a trichoma, a hair tumour, originating not from the down-growing epithelial process which forms the hair but from the up-growing mesoblastic hair papilla. Such a view provides a plausible explanation for the down-growing epithelial cell columns so often seen in moles and for their intimate connexion with the *navus* cells derived from the abortive hair papillæ.

THE ORIGIN OF MALIGNANT MELANOMATA FROM SIMPLE MELANOMATA.

In a large majority of cases malignant melanoma arises in connexion with a pre-existing simple melanoma. Mr. Eve, to whose well-known work on the subject I am much indebted, states that 26 out of 33 malignant melanomata of the skin occurring at the London Hospital arose in pigmented moles. The onset of malignancy is usually indicated by the enlargement of the mole, but, as Mr. Eve points out, the primary growth seldom exceeds a walnut in size. Occasionally, as in melanoma of the vulva, or in Mr. Jocelyn Swan's case of melanoma of the face, which his courtesy enables me to show you, the primary growth may attain a large size. Frequently there is hæmorrhage and sometimes a discharge which may be offensive. Occasionally no apparent change occurs in the mole and its malignancy is signalled only by the appearance of metastases (Eve). Sometimes no primary growth can be found. Dr. G. Newton Pitt informs me of a case upon which a necropsy was made by Dr. Hilton Fagge. All the organs had been removed and no primary growth could be detected anywhere. Dr. Fagge examined the lowest inch of the rectum, which had not been removed, and found the primary melanotic growth there.

THE ORIGIN OF MALIGNANT MELANOMATA APART FROM PRE-EXISTING SIMPLE MELANOMATA.

Mr. Eve has drawn attention to the malignant melanomata which arise in the scar of a punctured wound. He records two cases:—

A lady, aged 65, had a melanotic growth over the head of the fourth metatarsal bone from which she ultimately died. 20 years previously she wounded her foot upon the seashore. A slight thickening of the skin remained, and three months before she came under observation the thickened part began to enlarge until a definite tumour formed.

A lady, aged 39, stated that ten years before she came under observation she ran a splinter of wood under the skin of the right thumb. Blood accumulated under the skin and subsequently a black spot remained. This pigmented spot gradually spread and ultimately it ulcerated and gave rise to secondary growths in the epitrochlear and axillary glands.

Mr. Bland-Sutton has drawn attention to the implantation cysts, lined by epithelium, which originate from particles of integument carried down into the subcutaneous tissues by an injury. I would suggest that the melanomata which

originate in the scar of a puncture are due to the traumatic implantation into the subcutaneous tissues of a group of dermal connective-tissue cells,—of actual or potential *chromatophores*.

Another interesting group of skin melanomata are the whitlows. The term is, perhaps, unfortunate as it suggests that the tendon sheaths are implicated, which is not the case. The disease appears to begin as an ordinary chronic inflammation of the paronychia skin or of the pulp of the finger. Its real nature is often only indicated by a narrow black line in the skin forming a border to swelling. In other cases (Ledlard, Barnard) no period of apparent inflammation precedes the definitely recognisable tumour. Mr. H. L. Barnard, who has studied these tumours, tells me that they commence in the paronychia skin and in the matrix of the nail, which is only secondarily affected. They occur most frequently upon the outer side of the great toe and upon the index finger. In the latter situation they have only been recorded in female patients. Cases have also occurred upon the thumb and upon the fifth finger.

It appears to me that these growths, too, are implantation melanomata. The cases which appear at first inflammatory may be due to the simultaneous inoculation of bacteria and of pigmented connective-tissue cells. When they occur upon the hand the site of the growth and the sex of the patient point to needle-pricks as the injury concerned. Mr. Barnard informs me that his patient was much occupied in sewing. In the recorded cases it is not stated which hand was affected; presumably the left hand would be more liable to such injuries. The historic connexion of the London Hospital with the melanomata may depend on the tailoring and sewing industries of the surrounding district, just as that of Guy's Hospital with anthrax depends on the tanning industry of Bermondsey. In the case of the great toe the sharp edge of an ingrowing toe-nail would appear to be the weapon concerned. This is indicated by the preference of melanotic growths for the outer side of the great toe. These growths, too, must be looked upon as implantation melanomata. Sir Frederick Treves has recorded a melanoma of the palate due to the pressure of a denture, and melanotic growths have repeatedly been recorded as commencing in the lower part of the rectum, a part very liable to punctured injuries by fish bones. The malignant melanomata of the skin may thus, I believe, be classified in two groups: (a) those originating from simple melanomata and (b) implantation melanomata arising from the traumatic implantation of *chromatophores*.

The following case, recorded by Norris, is of interest in connexion with this question of implantation.—

The patient was a woman, aged 26 years. Three years previously her brother ran a pair of scissors through a mole between her shoulder, and a dark brown coloured stain, the size of a large nut, afterwards surrounded the mole. 12 weeks ago the mole began to increase and grew to the size of a moderate mushroom. It was oval, black, soft, elastic, and pedunculated. There was also a small tumour like a black grape near its upper surface. Mr. Norris removed the disease with abundance of the surrounding substance and predicted recurrence, but none occurred in eight years.

THE MICROSCOPIC STRUCTURE OF MALIGNANT MELANOMATA.

Borst describes three varieties of structure in primary malignant melanomata: (a) Those consisting of slender spindle cells, the ends of which are continued into very long branching processes. Stellate, round, and oval cells are often also present. In this variety of growth the cells are easily to be recognised as *chromatophores*. (b) Those consisting of spindle-shaped cells arranged in intercrossing

DESCRIPTIONS OF ILLUSTRATIONS ON PAGE 998.

Fig. 10.—An oblique section of a hair-bulb from the human scalp showing the numerous branched and pigmented cells (*chromatophores*) which are sometimes present in the hair-papilla and among the cells of the hair-bulb.

Fig. 11.—A verrucose mole seen under a low power. Note the sharp division between the epithelium and the pigmented layer of the dermis. Just beneath the pigmented layer is the broad cellular band of *navus* cells.

Fig. 12.—A group of *navus* cells from simple melanoma viewed under a high magnification.

Fig. 13.—The unpigmented portion of a primary malignant melanoma of the thigh, under the care of Mr. Pearce Gould.

Fig. 14.—The pigmented portion of the same tumour. The tumour resembles a "parithelloma" in appearance, and is entirely unlike a carcinoma. The round empty spaces are blood-vessels.

Fig. 15.—(From Ribbert). *Chromatophores* of various types from primary and secondary melanotic sarcoma. Some of the pigmented cells are stellate, others fusiform. Note the long branching processes of the cells.

FIG. 10.

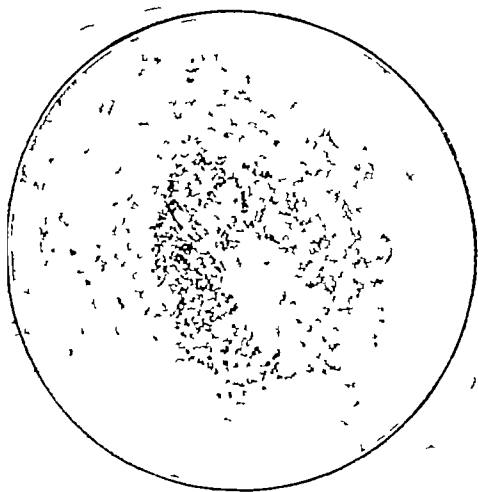


FIG. 11.



FIG 12

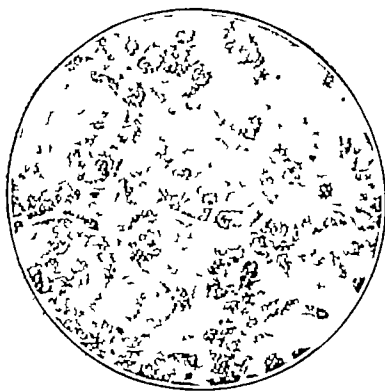


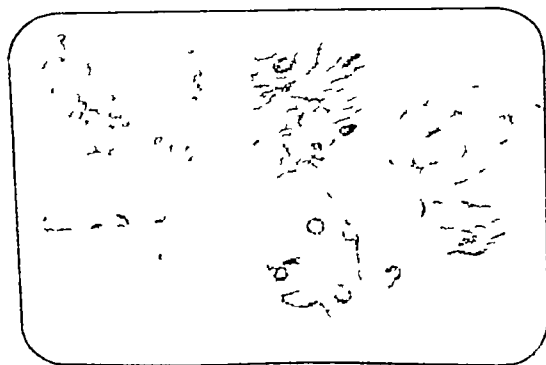
FIG 13



FIG. 14.



FIG. 15.



bundles. In section these growths present an alveolar appearance, the alveoli containing apparent round cells which are really spindle cells in cross section (Ribbert). (c) Those consisting of large cells, round, oval, or polygonal in shape, arranged in alveoli separated by strands of connective tissue. This is the variety which closely resembles a carcinoma.

Besides these varieties I am able to show you a peculiar form of malignant melanoma, apparently due to sarcomatous degeneration of the perivascular connective-tissue cells of a cavernous naevus (Fig. 13). The overlying cutaneous epithelium is normal. You will notice that in the fully developed pigmented portion of this tumour (Fig. 14) the blood-vessels constitute the only stroma which is present and that each vessel is thickly clad with many layers of tumour cells, which are more loosely scattered in the inter-vascular spaces. It is obvious that a tumour with these characters, resembling in structure a perithelioma, could never be classified as a carcinoma.

The distribution of pigment in malignant melanomata is very irregular. Sharply defined portions and even the whole of the primary growth may be free, or nearly free, from pigment. As regards the secondary nodules some may be coal-black, while others in the same organ are colourless. The glandular metastases generally show deep pigmentation.

MELANIN.

Much disagreement has existed as to the nature and origin of melanin. Some authors maintain that it contains iron and is derived from the pigment of the blood, others maintain that it is free from iron and deny its origin from the blood. M. B. Schmidt⁷ has shown experimentally that iron-free pigments may be derived from blood pigment, and, further, that in melanotic tumours some of the melanin granules may give the micro-chemical reactions for iron, while other melanin granules in the same specimen remain unstained. He concludes that melanin is derived from the blood and that consequently in the early stages of its formation it contains iron, which, however, it has lost by the time its chemical development is complete. In fact, the term "melanin" is a histological one, not a chemical one, and is applicable to pigment granules some of which may contain iron; but in what may be regarded as its typical form melanin is iron-free. The remaining chemical characters of melanin are well known and need not detain us. It is, however, of practical importance to note that melanin is bleached by chlorine, a fact which enables it to be distinguished from the carbon particles so frequently present in lymphatic glands.

Ribbert,⁸ in a paper which, to my mind, almost conclusively proves that the malignant melanomata must be classified among or near the sarcomata, has brought forward some new facts, chiefly derived from the examination of fresh teased-out preparations. According to Ribbert's observations the cells of melanotic sarcoma of the eye agree with the normal pigment cells of the choroid in all particulars, showing in fresh teased-out preparations star-shaped cells with long multiple processes, or spindle cells with their ends prolonged in similar and often very long processes. (Fig. 15.) Some of the cells are entirely filled, except in the nucleus, with pigment granules; in some the granules are universally but more sparingly distributed, others are entirely free from pigment. The granules are principally found in the peripheral layer of the protoplasm, and this applies both to the cell body and to its prolongations. Among the branched elements, round or oval, intensely pigmented cells without processes are to be seen. In the older parts of the tumour star-like pigment cells are wanting and spindle cells with long prolongations may be seen lying parallel in bundles. Frequently dichotomous branching of the processes can be made out. Evidently these are not ordinary spindle cells such as are found in spindle-celled sarcoma, although in sections, when shorn of their processes, they may present an identical appearance. But besides these peculiar spindle cells there may be found round, oval, spindle-shaped, or stellar elements devoid of processes containing dense aggregations of large pigment granules, or large pigment masses may be seen obscuring the cell structure and often apparently replacing it. Transition forms may be observed between the cells with processes and those devoid of processes. These serve to show that the two varieties of cells represent different stages of a single-cell variety, or

perhaps different degrees of contraction of the cell protoplasm such as is seen in the pigment cells of reptiles.

The preceding observations apply only to tumours in an early stage of development. In later stages the branching character of the cells is lost, and they resemble those of an alveolar sarcoma, appearing fusiform or round, according as the cell is cut longitudinally or crosswise.

In the metastases of melanotic sarcoma of the choroid, as well as in the primary growth, all these forms of cells from the typical star-shaped chromatophore with long processes to the round pigment mass occur. From all these facts Ribbert concludes that the characteristic elements of melanotic sarcoma of the eye are the chromatophores, which, however, in the course of their growth may suffer many modifications or may remain undeveloped and free from pigment, resembling in this latter respect the normal chromatophores when they first appear in the developing embryo.

Similarly Ribbert regards melanotic sarcoma of the skin as a tumour arising from the chromatophores of the cutis. He believes that the naevus cells are young chromatophores, holding the same relation to the developed pigmented cell as the unpigmented cells of a melanotic sarcoma hold to the pigmented ones. One of the commonest melanotic sarcomata is characterised by the presence of pigmented cells exclusively in the inter-alveolar tissues, while the alveolar groups of cells are free from pigment. In certain warts, on the other hand, all the alveolar cells are pigmented. Evidently the non-pigmented cells have a latent capacity for developing pigment. Moreover, in teased preparations the alveolar non-pigmented naevus cells are frequently seen as angular cells with short processes. Transitional forms between the naevus cell and the stellate chromatophore can be traced, and in places typical chromatophores pass into typical naevus cells without any sharp boundary. It is to be noted that complete development of the chromatophores as regards their processes and their pigment is only seen where they lie near the epithelium. Thus Ribbert finds that in respect to varying degrees of development of the same kind of cell, the identical appearances found in pigmented warts also occur in melanotic sarcoma, save that in sarcoma the cells are larger than in simple warts. He concludes that melanotic sarcoma of the skin, like that of the choroid, is a "chromatophoroma," a view which he confirmed by detecting typical stellate chromatophores in teased specimens of melanotic sarcoma; for instance, in a metastasis from a melanotic sarcoma of the pinna, in melanotic sarcoma of the labium minus, and in a melanotic sarcoma in a dog. A melanotic sarcoma of the great toe consisted exclusively of typical branching chromatophores (Fig. 15), but this is an exceptional event. As a rule the origin of the cells of a melanotic sarcoma from chromatophores is obscured by the loss of their processes and by the excessive deposition of pigment within them.

AT WHAT STAGE OF THE DISEASE DOES BLOOD DISSEMINATION COMMENCE?

We have obtained strong microscopic evidence that the process of dissemination in malignant melanoma is primarily one of centrifugal lymphatic permeation. There is almost equally strong evidence from the results of necropsies that in the later stages of dissemination the blood-vessels are the channels, and the blood itself the vehicle and motive power of detached emboli which form secondary deposits. The crucial point to settle as determining the prospects of surgical interference in malignant melanoma is this: At what period is lymphatic dissemination supplemented by blood dissemination? When once viable fragments of the growth are launched into the blood stream the surgeon's hand is paralysed and the patient must depend entirely on the natural forces, always inadequate and frequently altogether absent, which tend to the destruction of the embolised fragments.

Fortunately it would appear that as a general rule blood invasion does not take place at an early stage. This is indicated, *primâ facie*, by the comparatively long average duration of the disease, which has been estimated at three years. If malignant cells obtain access to the blood in the early stage of the disease, the natural powers of resistance must inhibit their further development or surely the patient would succumb within a few months. In the second place, cases occur of death from intercurrent disease, in which lymphatic dissemination, sufficiently widespread to be inoperable, is seen unaccompanied by evidence of blood dissemination. And, lastly, most extensive lymphatic

⁷ Virchow's Archiv, Band cxx. and Band cxxiii.

⁸ Ribbert: Ueber das Melanosarkom, Ziegler's Beitrage, 1897, p. 471.

distribution of the disease may take place in the glands, the subcutaneous tissues, and upon the serous membranes without any of the nodular visceral metastases which are the usual result of blood embolism. The points to which I have referred receive illustration in the following cases.

A young woman who came under the care of Mr. Heath⁹ had a discoloured area of the size of a shilling on the back of her left forearm, apparently a *nævus*. An unsuccessful attempt to remove it by ligature had been made. Mr. Heath excised the piece of skin and also an underlying nœvoid-looking growth upon the fascia of the size of an almond. About six months later two small hard lumps appeared near her scar, with an enlarged gland in the axilla. The patient still looked the picture of health. The recurrent glands were removed but the patient died from pyæmia on the tenth day. In section the excised axillary gland was found to be perfectly black. It was as large as a tennis ball. At the autopsy several large masses of bronchial glands showing true melanotic pigmentation were found. In both lungs were numerous pyæmic deposits, besides which, however, the lower lobe of the right lung contained a soft melanotic deposit, while the left lung contained a similar mass near its root.

In this case, six months or more after the removal of the growth was deemed advisable, the only evidence of blood dissemination was the mass in the lower lobe of the right lung, and even this might with greater plausibility be ascribed to permeation round the infected glands at the root of the lung—the obvious cause of the invasion of the left lung at any rate. It seems highly probable that a free removal of the deep fascia round the growth would have prevented the local recurrence. This step would, however, have been useless without a simultaneous removal of the axillary glands. If at the first operation these glands had been removed it is likely that the extension of permeation to the supra-clavicular and thence to the bronchial glands would have been anticipated and prevented and that the patient would have been permanently cured.

In the following case¹⁰ very extensive lymphatic dissemination and invasion of the serous cavities had occurred with a minimum of evidence showing distribution of malignant emboli by the blood stream. A woman had noticed as long as she could remember a black wart situated three inches above the left wrist. At the age of 53 years the wart began to increase in size, without pain, but with occasional bleeding, and it was accordingly removed. It is interesting to note in connexion with Coley's work on sarcoma that an attack of erysipelas which supervened was without therapeutic benefit, for two weeks after the operation a small lump made its appearance in the scalp and before the patient left the hospital other smaller lumps appeared elsewhere. Increasing weakness and the appearance of new nodules were her only symptoms for about two years. At the end of this period, in November, 1868, she was admitted to the Middlesex Hospital under the care of Mr. T. W. Nunn. Over a hundred nodules were now present over the head, face, neck, trunk, and upper limbs, together with one below the left knee. Several of the larger nodules were ulcerated, bleeding freely at times, and exuding a clear yellow fluid. In this stage the nodules were painful. The patient died in January, 1869. The surface of her body was studded with innumerable nodules. "The smaller and more numerous of these are..... scattered over the trunk and neck; many are also on the arms and thighs and some few below the elbows and knees; a few also on the head and face." The glands in both axillæ were enormously enlarged, causing dropsy of the right arm. The left breast was shrunken and the right one was much enlarged and infiltrated by growth. The mesenteric, lumbar, pelvic, and anterior mediastinal glands were infiltrated, sometimes forming masses of the size of tennis balls. One such mass surrounded the vermiform appendix, and another occupied the space between the vagina and the rectum. A minute black point, of the size of a pin's head, was imbedded in the substance of the left kidney, but the viscera generally were free from disease.

The remarkable point about this case is the freedom of the viscera from invasion, except for the single minute renal deposit. It would appear almost certain that malignant cells must have obtained access to the blood stream. The inference is that in this exceptional case of malignant melanoma the resisting power of the blood was sufficient to

destroy the malignant emboli, an event which in breast cancer is the rule.

In the museum of Guy's Hospital there is a specimen which bears very directly upon this point. It is a kidney, itself entirely free from disease, so far as the naked eye can show, but imbedded in a mass of melanotic growth which is replacing the perinephric fat. It appears certain that, as frequently happens in breast cancer, the perinephric growth originated from malignant infection of the lumbar glands. If this is the case, it is evident that widespread lymphatic dissemination may occur in melanotic sarcoma without obvious evidence in the kidneys of embolic blood invasion.

THE OPERATION FOR MELANOTIC SARCOMA OF THE SKIN.

When malignant melanoma arises in the digits amputation should be performed at once. The operation should not be performed as if for a non-malignant condition. The flaps should never be cut so as to include any skin within, at least, an inch of the tumour. Moreover, they should be very thin, consisting only of skin and a very thin layer of subcutaneous fat, and not including the deep fascia. The flaps should be dissected up to a much greater extent than would be necessary merely to provide a covering for the stump. Over the whole of the area thus exposed the deeper subcutaneous fat and deep fascia should be dissected up towards the base of the finger or toe until the line of disarticulation or division of the bone is reached. The glands in the groin or the axilla are then to be removed.

When a melanotic growth occurs on the hand or the foot above the digits the question of amputation will always arise, but in early cases excision of the growth, even though it be attended by greater risk of recurrence, will usually be the operation of choice. If the glands are already palpably enlarged it is probable that anything short of amputation at the wrist or ankle is useless. When the growth starts higher up on the limbs, or on the head or trunk, amputation is replaced in most cases by excision. Museum specimens show how inadequate and empirical are the operations performed on these growths, even up to the present time. It is common to see the skin divided within a quarter of an inch of the edge of the growth. Invariably, so far as I know, the area of deep fascia removed is no larger than the area of skin excised, and consequently local recurrence in the neighbourhood of the scar is a very frequent event.

The principles upon which, in my opinion, the excision of a malignant melanoma should be carried out may be directly deduced from the drawing of dissemination round a focus of melanotic growth (Lecture I., Fig. 2). You will remember that it shows permeation spreading centrifugally in the lymphatic plexus of the deep fascia and invading skin and muscle secondarily over a smaller circular area. A circular incision should be made through the skin round the tumour at what is judged by present standards to be a safe and practicable distance. The incision, situated as a rule about an inch from the edge of the tumour, should be just deep enough to expose the subcutaneous fat. (See Fig. 16.) If necessary two radial linear incisions extending from the circular incision should be made on opposite sides of the tumour so as to facilitate the elevation of the skin flaps, which forms the next step. The skin, with a thin attached layer of subcutaneous fat, is now to be separated from the deeper structures for about two inches in all directions round the skin incision. At the extreme base of the elevated skin flaps a ring incision down to the muscles surrounds and isolates the area of deep fascia and overlying deeper subcutaneous fat to be removed. This fascial area is next to be dissected up centripetally from the muscles beneath up to a line which corresponds with that of the circular skin incision. Finally, the whole mass with the growth at its centre is removed by scooping out with a knife a circular area of the muscle immediately subjacent to the growth. The edges of the wound are to be brought together as convenience dictates.

REMOVAL OF THE LYMPHATIC GLANDS.

Writing in 1902 Eve said: "The removal of the nearest chain of lymphatic glands, whether palpably enlarged or not, should never be omitted; for it may be taken as a matter of certainty that in a great majority of cases they are infected." In the same paper Eve enforces this lesson by recording a case of melanoma of the palm in which, although the axillary glands were not palpably enlarged, they were

⁹ Heath, Transactions of the Pathological Society, 1863, p. 366.

¹⁰ Arnott, Transactions of the Pathological Society, 1863, p. 366.

infected even to the naked eye. Yet Acton,¹² writing in 1905, found in nearly every case the records of which were available that the primary growth was removed and the lymphatic glands were left!

Admitting the imperative need for removal of the lymphatic glands as a part of the first operation, it must be remarked that in cases which show palpable enlargement of these glands simple excision of the glands is likely to be quite useless. I have shown that permeation of the lymphatic plexus of the deep fascia soon takes place around the infected glands, just as it occurs around the primary tumour. The excision of the glands must therefore be carried out on exactly the same principles as the excision of the primary tumour—that is to say, a large circular area of the surrounding deep fascia must be exposed, dissected up

primary growth, the *two* sets of glands corresponding to the two lymphatic areas involved. The practical importance of these considerations is well illustrated by the following case.

A woman, aged 56 years, came under the care of my friend Mr. Jocelyn Swan, at the Brompton Cancer Hospital. She had had a dark raised mole on the right lateral aspect of the abdominal wall as long as she could remember. It was situated at the level of the umbilicus. At the age of 54 years the mole became ulcerated, with discharge and bleeding; a year later it was removed by her medical attendant. Six months later recurrence took place in the outer end of the scar, and a year after the operation Mr. Swan found the right inguinal gland enlarged to a mass the size of a hen's egg. Their enlargement was first noticed five months after the operation and

FIG. 16.

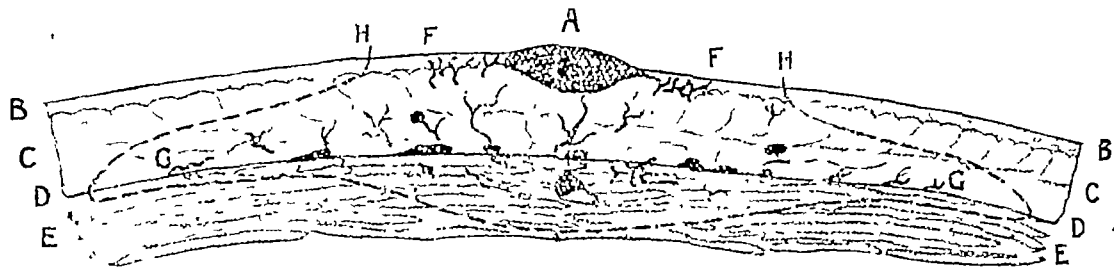


Diagram to illustrate the method of removing a malignant cutaneous melanoma. The drawing represents a section vertical to the skin surface through the centre of the growth. A represents the primary growth. B, Skin. C, Subcutaneous fat. D, Deep fascia. E, Muscle. The permeated area of the lymphatic system round the growth, represented by blotches and sinuous lines, extends as far as F F' in the skin and as far as G G' in the plane of the deep fascia. H H' are the points where the circular skin incision intersects the section. The dotted line commencing at H H' represents in section the planes of division of the subcutaneous fat, deep fascia, and muscle. The knife should nowhere divide any of the permeated lymphatics; it will almost certainly do so unless the skin flaps are freely undermined.

from its circumference towards the infected glands, and removed in one piece with them. In late cases it may even be right to remove an area of skin over the infected glands, but such cases are probably inoperable.

I am aware of only one case which has been operated upon by the method I advocate, a case recently under the care of my senior colleague, Mr. A. Pearce Gould, at the Middlesex Hospital.

A. D., aged 63, had noticed in July, 1905, a small blue patch "like a wart" on the inner side of his right thigh which began to increase in size. In June, 1906, he noticed a lump in the right groin. On admission, July 6th, 1906, under Mr. Pearce Gould's care, a pedunculated tumour as large as a green walnut was found, ulcerated and dark red in colour below, but of a dark blue-black colour in its upper part. Around its narrow pedicle were one or two pigmented patches in the skin. The inguinal glands formed a mass as large as a Tangerine orange. The iliac glands were not palpably enlarged. Mr. Gould performed an extensive operation, removing an elliptical area of skin over the glands and the tumour, freely undermining the skin flaps for about three inches all round, and dissecting away the large exposed area of deep fascia from the underlying muscles and vessels. The anterior part of the sheath of the femoral vessels was taken away, along with the crural canal and the tissue within it. Healing was delayed by some sloughing of the lower skin flap. The defect was remedied by a Thiersch graft. The patient left the hospital on August 9th. In October a lump, fixed to the iliac vessels, was felt in the right iliac fossa. There was no recurrence in the thigh.¹³

SARCOMATA OF LYMPHATIC BOUNDARY ZONES.

A melanotic sarcoma may originate upon or near the line of demarcation of two adjoining lymphatic areas draining into different sets of lymphatic glands. This fact is of great practical importance, for, when permeation round the growth commences, the sarcoma cells, spreading centrifugally from their point of origin, will soon obtain access to the lymphatic trunks of both areas and will be carried embolically to both sets of glands. Thus, for instance, a sarcoma commencing over or near the middle line of the thorax will involve simultaneously the axillary glands on both sides. A sarcoma beginning at some point along a line drawn horizontally through the umbilicus—the line along which the lymphatics draining towards the axilla anastomose with those draining towards the groin—will simultaneously attack by embolism both the inguinal and the axillary glands of the corresponding side. It is therefore necessary in all cases of melanotic sarcoma to consider the relation of the growth to the lymphatic areas. In sarcomata of lymphatic boundary zones it is imperative to remove, along with the

gave rise to an aching pain in the groin. About the same time a small nodule appeared in the upper and outer quadrant of the right breast, and shooting pains were felt in the right shoulder and axilla. This mass became fixed to the skin and to the pectoral fascia. A mass of glands of about the same size as the mass of inguinal glands, and much larger than the lump in the breast, was present in the right axilla. No other enlarged lymphatic glands were present. There was at this time no loss of flesh. Though Mr. Swan considered the case almost hopeless he removed the breast and axillary glands by a Halsted's operation, and subsequently very freely excised the recurrent nodules in the abdominal wall and the enlarged glands in the groin. The inguinal and axillary glands showed melanotic deposit; the other metastases were colourless. Recurrence took place shortly in the right iliac fossa and in the nape of the neck near the occipital protuberance. One or two doubtful nodules were felt in the right axilla. Paralysis of the left leg and arm followed, but proved temporary. The occipital swelling increased in size and gave rise to intense pain, while the other metastases retrogressed and one in the right breast disappeared. The patient died five months after the second operation with pulmonary oedema.

In this case the axillary and the inguinal glands each formed masses of about the same size, so that their simultaneous invasion rests on strong evidence. It is evident that the proper treatment of this case, had Mr. Swan seen it early enough, would have been the free excision of the mole with a surrounding area of deep fascia, and the simultaneous removal of the inguinal and axillary glands of the same side, whether they could be felt enlarged or not. It may, indeed, be said that the malignancy of the mole was not established at the time it was excised, and this raises the question of the clinical diagnosis of malignancy in moles.

THE CLINICAL DIAGNOSIS OF MALIGNANCY IN MOLES.

When a pigmented wart or mole increases in size, ulcerates, or gives rise to bleeding and discharge it should invariably be treated as a malignant tumour. The key to success in the operative treatment of melanotic growths lies in the general adoption of this rule. To wait for the establishment of the diagnosis by palpable enlargement of the regional lymphatic glands is to court disaster. The complete operation for melanotic sarcoma, already described, should be carried out without delay. The removal of the regional lymphatic glands is not a very severe surgical procedure as

¹² H. W. Acton: The Middlesex Hospital Journal, April, 1905.

¹³ Pearce Gould: Archives of the Middlesex Hospital, vol. 42, p. 1.

insurance policy against such a terrible disease. But me surgeons may consider, wrongly in my opinion, that removal of the glands is unjustifiable until conclusive evidence of the malignancy of the tumour has been obtained. For this purpose microscopic examination of a small portion of the primary tumour is often valueless, an innocent mole may present the typical appearance of an alveolar sarcoma. Proof of malignancy can only be obtained by a systematic examination of the whole of the excised piece of tissue at the centre of which lies the suspected mole. Two adjoining diathermic slices are taken, vertically to the skin surface, through the centre of the suspected tumour. Each slice could be about one-eighth of an inch thick. The slices are red, hardened, and cleared. One of them is preserved as a translucent naked-eye specimen; the other, divided into pieces of suitable size, is submitted to microscopic examination. If beyond the limits of the primary growth in the naked-eye specimen any trace of black cords or dots can be seen, and if in the microscopic specimens permeated lymphatics or perivascular infiltration can be detected beyond the obvious edge of the neoplasm, the malignancy of the tumour is shown beyond the possibility of doubt. Removal of the regional lymphatic glands must in such a case be undertaken without delay. If the surgeon waits for obvious enlargement of the lymphatic glands, permeation of their tributary and efferent trunks may probably by that time have carried the disease beyond the reach of his knife.

THE OUTLOOK FOR OPERATIVE TREATMENT.

In the future, as in the past, many cases of malignant cutaneous melanoma will doubtless present themselves for treatment when they have already become inoperable, and to such cases the terrible lines of Fitzgerald's "Omar" may be forcibly applied:—

"The moving finger writes, and having writ
Moves on: nor all your Piety nor Wit
Shall lure it back to cancel half a line,
Nor all your tears wash out a Word of it."

But fortunately we are not in all cases restricted to the helpless recognition of accomplished facts, and even in dealing with malignant melanoma an intelligent anticipation of the trend of events may sometimes avail to stay the finger of Fate. There can be little doubt that the failure of surgery to deal successfully with malignant melanoma of the skin is partly due to causes within the surgeon's control, in other words, to defective methods of operation. The methods still employed in dealing with melanotic growths of the skin are precisely those which years ago gave such deplorably bad results in the treatment of carcinoma of the breast. Formerly the tumour, with a small circumferential area of skin, was cut out from the breast and the axillary glands were removed, if at all, only when palpably enlarged. Even when the glands were excised the surrounding zone of permeated lymphatics in the breast, in the deep fascia, and in the muscles, was left intact to reproduce the disease. Nowadays the improved operation for breast cancer produces prolonged or permanent immunity in about 50 per cent. of cases. And upon the evidence I have laid before you I venture to predict that the application of more thorough and scientific methods to the surgery of cutaneous melanomata will produce a corresponding, though perhaps a smaller, improvement in the results of operation.

NOTES ON 130 CONSECUTIVE EXTRACTIONS OF CATARACT WITHOUT A FAILURE.¹

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The materials for this paper are taken from my private case-books. Most of the operations were performed in nursing homes or in the private ward of Guy's Hospital but a certain number were done in hotels, lodgings, or private houses. The cases are arranged in the order in which I first saw the patients and most of the

operations were performed in the same order but some few were not done till years after I was first consulted. The number of patients is 124, both eyes being operated on in six cases. 127 were nuclear cataracts. The ages of these patients varied between 45 and 100 years, there being one of the latter age; six were 80 years or over. Two patients had cortical cataract; in one, aged 35 years, both eyes were operated on; in the other, aged 40 years, one only was done. The results are: eyes, vision $\frac{1}{2}$ or better, 115; eyes, vision less than $\frac{1}{2}$, 15. Of these the want of sight in seven was due to causes not connected with cataract. Case 1.—Vision $\frac{1}{2}$ and J. 10; high degree of myopia with extensive choroidal changes. Case 2.—Vision J. 10; dense old corneal opacities. Case 3.—Vision J. 10; severe old iritis, closed adherent pupils; iridectomy in both. Case 4.—J. 12; albuminuric retinitis. Case 5.—Vision $\frac{1}{2}$; large hæmorrhage on optic disc. Smaller ones with white patches in macular region. Case 6.—J. 14; old iritis and choroidal atrophy. Case 7.—J. 4; high degree of myopia and extensive old choroidal atrophy. None of these eyes at time of operation could see more than hand movements and some had bare perception of light, so I think I am justified in calling them successful so far as the operation for cataract is concerned. Case 7 is worthy of some further notice: the eye had doubtful perception of light and my note of the case made two years before the operation, when there was but slight lens opacity, says vitreous opacity, much choroidal change, detachment of retina. Vision nil. I operated at the patient's earnest request and the result surprised me. This case and the first of the seven, as well as some others I have seen, lead me to throw out the suggestion that a diseased lens may in some way cause much greater loss of sight than can be accounted for by its opacity alone. In both these cases the improvement of vision after extraction was much greater than I expected.

Some other observers have, I think, noticed the same thing, and I remember Mr. Robert W. Doane mentioning it to me some months ago in connexion with retinitis pigmentosa. The remaining eight cases merely require needle operations. Some of the patients cannot screw up their courage to undergo further operation. Others are satisfied with what sight they have. Case 1, J. 14; Case 2, $\frac{1}{2}$ and J. 6; Case 3, $\frac{1}{2}$ and J. 4; Case 4, J. 8; Case 5, $\frac{1}{2}$ and J. 4; Case 6, J. 12; Case 7, J. 10; and Case 8, J. 14. Of the remaining 115 vision is in 9 $\frac{1}{2}$, in 34 $\frac{1}{2}$, in 40 $\frac{1}{2}$, in 25 $\frac{1}{2}$, in 6 $\frac{1}{2}$, and in 1 J. 4, but the patient was bedridden. I had no large types to examine him with, but he could see all his pictures and objects in his room, and he wrote me that he was very much pleased with the result of the operation.

Of the 130 extractions 83 were performed without iridectomy. Of these 57 had circular, central, or nearly central and more or less moveable pupils. In 23 the pupil was eccentric, five of these required removal of prolapsed iris, and two iridectomy. In three the condition of the pupil was not noted. In 57 eyes the extraction was associated with iridectomy, performed at the time of extraction or previously. In some the iridectomy had been performed before the patients came to me. In others I did the iridectomy for closed pupil, or other result of previous iritis or for corneal opacity, but only once as a simple preliminary to extraction. In two of these 57 eyes division of opaque membrane with Wecker's scissors was required. In 57 eyes needling for opaque capsule was performed, in some more than once. In one case a traction instrument was required for removal of the lens. In no case of the whole 130 was vitreous lost. In six cases glaucoma occurred as a complication. In one an attack of acute glaucoma came on two months after the extraction; it was relieved by sclerotomy, but returned in five days and was again relieved by sclerotomy; 12 days later it reappeared but yielded to eserine and hot bathing. 18 months later vision was $\frac{1}{2}$ and J. 1 but there was some contraction of the field below and to the inner side. 13 months later tension was + 1 and vision was $\frac{1}{2}$ and J. 4. Iridectomy was performed and opaque membrane cut across. Six months later (three and a quarter years after the extraction) vision was $\frac{1}{2}$ but central vision alone remained. Case 2, iritis with glaucoma, for which iridectomy had been performed, occurred many years before the date of extraction. Case 3, acute glaucoma came on a fortnight after a needle operation and was cured by iridectomy. Case 4, acute glaucoma ten months before extraction, was cured by iridectomy. Needle operation eight months after extraction was followed in four hours by attack of acute glaucoma;

¹ This article was accompanied by an excellent table giving a detailed analysis of the main facts of each operation. Mechanical considerations prevented the publication of this table in our columns. The facts recorded are, however, so well summarised by the author that the value of his communication is in no way diminished by the omission of the table.—*Ed. L.*

cured by sclerotomy. Case 5, needle operation, followed by acute glaucoma three months after extraction; cured by iridectomy. Case 6, chronic glaucoma, commenced three months after extraction; cured by iridectomy. A second attack six months later was cured by sclerotomy. In two of these cases the glaucoma followed immediately upon, and was probably caused by, a needle operation. The cases are Nos. 1, 41, 48, 58, 95, 115, all recovered with vision $\frac{1}{2}$ or better.

Astigmatism varying in degree from 0.50 to 8 D. is noted in 74 eyes, and I expect that it occurred in many more, but I do not think I was so careful in looking for it in my earlier cases; had I done so I think it probable that the vision of several cases given as $\frac{1}{2}$ and $\frac{1}{4}$, with simple spherical lenses, might have been raised to $\frac{1}{2}$, $\frac{3}{4}$, or even $\frac{1}{2}$ with compound lenses. The very frequent occurrence of astigmatism after cataract extraction suggests that if it can be produced by an operation, it can be cured by the same means; and it seems to me that the operative treatment of high degrees of myopic astigmatism is a matter requiring attention. In all my cases the astigmatism was in or approaching the vertical meridian, showing that the cornea is flattened towards the incision; so that if an incision were made for the cure of astigmatism, its direction should be at right angles to that meridian of the cornea which it is desired to flatten. I say advisedly myopic astigmatism, because what is done by an incision in the cornea is to cause flattening, and if one were made in a hypermetropic eye it would have to be planned so as to flatten the least hypermetropic meridian, and so would increase the total hypermetropia and the patient would be little if any the better for it; at any rate, he would still have to wear glasses.

The question of performing extraction in one eye, when the other has sufficiently good vision to enable the patient to follow his usual avocations in life without difficulty, seems to be one upon which ophthalmic surgeons are not quite in agreement. I see patients from time to time who have been told the cataract must be removed without delay or that a preliminary operation must be performed at once. In some cases the surgeon has even gone so far as to emphasise the pressing necessity for immediate operation by requesting the patient to wait a few minutes whilst he telephones to his nursing home to inquire if there is a vacant room so that he or she may be taken in at once; and all this when the other eye has vision $\frac{1}{2}$ or better, can read J. 1, and has little or no opacity in its lens. I never recommend extraction in one eye (when the other sees well enough for the patient's requirements), for visual reasons only. I tell him that from that point of view he will gain little or nothing from an operation, but that if he has any other reason for wishing it done I am quite ready to do it. Some people do not like the look of the eye, or others do not like the look of it and decline to employ persons who appears to be blind in one eye. In one case, No. 114 in the list, the right eye had a very visible cataract, whilst the left had vision $\frac{1}{2}$ and no lens opacity. The patient was a handsome woman of 45 years with daughters to take into society, and she did not like either the look of her eye or the remarks other people made about it. I extracted the cataract with the result that not even an expert could have told which eye had been operated on without making a special examination. I have extracted cataract existing in one eye only, for medical men, because their patients noticed it, and I have also done it for persons going abroad for lengthened periods whose sound eye might possibly become useless before their return, and I do it in cases where the lens appears to be undergoing degenerative changes and is likely to become dislocated. There never can be any hurry about a cataract extraction. An eye which has had only perception of light 30 years or more will see just as well after extraction as one that has only been in the same condition 12 months or less. Cases 72 and 89 are instances of this; in the former the eye had been useless 25 years, in the latter 48 years (the cataract was probably congenital), but vision after extraction was $\frac{1}{2}$ and J. 1 in the first, $\frac{1}{4}$ and J. 4 in the second.

The question of extraction in the second eye is also a matter about which the profession does not seem agreed; my practice is not to recommend it in any case where the operation on the first eye has been entirely successful. But should the result of the first operation be unsatisfactory or the eye become damaged from disuse or injury at any time after it, then I strongly advise the patient to have the second eye done. I also extract in the second eye if the patient wishes it, or for reasons the same as those already given

when speaking of cataract in one eye only. In this series have operated on both eyes in six patients. The second was done in five cases by the patient's desire, and in one because the sight of the first eye was lost from detachment of the retina. Two cases are noted of albuminuric retinal one of which died from uræmia four years after the extraction was performed. Diabetes is noted in one, and retinitis dependent on it spoilt the result of what was otherwise an entirely successful operation. How many more my patients had diabetes I do not know, for I never take into consideration when proposing an operation for cataract and do not inquire about it; it makes no difference whatever to the result, except in such rare cases as the foregoing; in quite young subjects who are obviously very ill and who for an operation of any kind.

My method of operating is simple. I use antiseptics the extent of thoroughly cleansing the eye with perchloric solution 1 in 4000 and afterwards with 10 per cent. boric acid solution, which I also use for washing during the operation. For the application of solution and for sponging use swabs of cotton-wool. I have never gone to the extent of shaving the eyebrows, cutting the lashes, and covering the face with a carbolic towel with a hole in it for the eye. If the conjunctiva is in an unsatisfactory condition my best to set it right; if discharge from the lachrymal sac exists I do my best to cure it, and failing that I use canaliculi, as recommended by Dr. Buller of Montreal, as to keep in the discharge until the operation wound has time to heal. Of the 124 patients operated on two had chloroform and one had A.C.E. mixture; the remainder were operated on under local anaesthesia, cocaine being used all. At first I used it of varying strengths, but have some years used a solution of 5 per cent. I am so thoroughly well satisfied with the action of cocaine that I have never tried any other of the local anaesthetics.

I perform my operation in the following manner. The eye having been thoroughly cleansed and cocainised I first pass a silk suture through the conjunctiva below the lower corneal margin; next direct the patient to look downward and having got the eye into the required position draw the suture moderately tight and have it fixed on the cheek by the thumb or finger of an assistant. I use no other fixation. I next draw the upper eyelid upwards sufficiently to expose the upper margin of the cornea. I never use a speculum. I fix the globe by pressing the index finger and steady the globe by pressing the middle finger lightly upon its inner surface with the second finger of the same hand. Then with a Gräfe's knife I make a section in the sclero-corneal junction forming a flap of rather more than one-third of the cornea. As soon as the incision is finished I tell my assistant to let the suture go, he then removes the lens by pressure with the thumb or forefinger applied to the surface of the lower lid, just below the lower margin of the cornea, aided by counter pressure applied in the same manner above the incision. If the pressure is properly applied the incision begins to gape, the iris protrudes, the pupil dilates, and the lens escapes through it. Having removed the bulk of the cataract I take care to press out all cortex, and then if the iris has not returned to its normal position I replace it by rubbing the upper lid lightly upon it and if that does not suffice I push it back with a curette. In some cases pressure through the lid will not cause the lens to escape; in such, I remove it by ligature pressure with the curette applied directly to the eyeball. I never hurry over the operation, but when the lens has been entirely removed and the iris has returned to its normal position I leave the eye exposed to the light for a few moments; by so doing the pupil contracts and remains contracted and the risk of prolapse is lessened.

After the operation I cover both eyes either with a pad of sal alembroth wool and gauze or Gamgee tissue, or a lig specially made for the purpose, secure the pads by a lig bandage, and put the patient to bed, where he remains for three days. I remove the dressing on the second day but reapply it, and afterwards dress the eye every day, but keep both eyes bandaged for a week, without opening either unless there is some special reason for doing so, such as pain, swelling or redness of the lids, or unusual discomfort. Prolapse of the iris occurs to any considerable extent remove it as soon as I find it; small prolapses I leave alone. With regard to iridectomy, I perform it in all cases where there are numerous synechiae or where from any cause expect that the pupil will not dilate sufficiently to allow

the easy escape of the lens, in cases of increased tension, and in all cases where there is a yellowish nodules with clearly concentric, without any definite sub-internal kind of quality which always appears to be having one whichever way the eye is looked into, which is ill-defined and surrounded by a more or less discoloured red. I know the kind of curvature: the cornea is always sticky and difficult to get away. Operations with either or gently model and stain answered gloriously in the cornea, made of which may remain transparent, come away very easily and, though immature, do not need infirmity. In any case where I have commenced operating with the intention of not performing infirmity, I do it if the pupil will not dilate and if after examination the iris cannot be removed or, if removed, seems inclined to prolapse again. If the iris is wounded in making the section, as sometimes happens from the rolling round the edge of the knife, I do an iridectomy, including the wounded portion. In 118 of these cases the section was made upwards. In the two remaining infirmity had been performed down and in one, and down and out in the other, and the section was made in a corresponding direction.

Enkhuizen, W.

THE SUCCESSFUL TREATMENT OF TUBERCULOSIS AND LEPROSY

BY MEANS OF AN ALKALIMETRIC METABOLIC PRODUCT, CHEMICALLY ALTERED OF A BACILLUS DISCOVERED AT BOEHBY (ORANGE RIVER COLONY) IN 1888.

BY R. F. WERNICH, M.D. EDIN.

(A Preliminary Note.)

No attempt will be made to prove that the bacillus in question is, or is not, the common bacillus scrofulae of bodies, body, because the varieties, whatever they may be, cannot alter either the propagation of the remedy or the results obtained; and secondly, because the references made regarding bacillus scrofulae in bacteriological literature are so contradictory that the risk appears a somewhat hopeless one. I try extracts from my notes will be given and a few experiments described from which it will appear that some of the characteristics of this bacillus are those of bacillus scrofulae, while others seem to show that it is a new one. It is impossible, of course, that the latter may have been brought out by growth in peculiar circumstances, or, as I am inclined to believe, in more favourable circumstances. Whatever the case may be, it appears extremely likely that under the designation bacillus scrofulae we are dealing with a group and not a single individual, hence the fact that each investigator has his own set bacillus scrofulae differing in some respects from those of others. To quote literature on this point will be a waste of time; I shall therefore at once proceed to describe the origin and characteristics of the bacillus. It was first obtained at Boehby, Orange River Colony, in 1888, as a gradually pure growth in an infusion of a herb that was supposed to contain an alkaloid. Later, while studying the bacteriology of common wheat meal and bean fermentations, it was again encountered. This time its true home was found and the fact was discovered that it plays a part in practically all spontaneous decompositions or fermentations to which wheat meal or bean is liable. In one case it feeds on the products of decomposition of one germ, and in another it furnishes nutriment for others, while in yet another it enables anaerobic organisms to grow by using up all the oxygen in the medium. The subject of the spontaneous decompositions of wheat meal and bean under varying conditions is a very large one, but also a very interesting one, and I hope at some future time to publish some investigations on the matter.

If a quantity of ordinary refined wheat meal is beaten up into a stiff paste with boiling water and 1 per cent. alkali being taken to its boiling temperature have its full effect so as to destroy the lactic acid germs present as much as possible and this paste is spread out on the sides and bottom of a covered vessel, then after from 12 to 24 hours of incubation at a temperature of from 103° to 105° F., it is found that several spots, varying in size, of a red or pink colour, have made their appearance on the surface of this paste. The vessel must be transferred to the incubator at once and the paste spread out so as to have as large a free

surface as possible. On examining these red spots microscopically they are found to consist of a layer of very large round spores firmly bound together so as to form quite a tough skin. On transferring a bit of this skin thoroughly washed with sterile water so as to free it as much as possible from undesirable micro-organisms, to a suitable medium kept either at room temperature or incubated, the spores will develop into large bacilli which can then be readily isolated by the usual methods. Boiling up for an hour a quantity of bran with five or six times the bulk of water and standard strongly alkaline with bicarbonate of soda will give the same result after two or three days of incubation. Here, however, a uniform white mycelium forms over the whole surface which somewhat rapidly turns red and becomes converted into a tough leathery skin which can be removed entire and which can be fairly roughly handled without breaking. This skin, too, like the red spots on the meal paste, consists of large round spores firmly bound together in a single layer. On growing the bacilli obtained from these spores in various media it is found to possess the following characteristics: 1. The bacillus forms spores which like those of the "dry bacillus" group, will stand at least an hour's boiling. 2. It stains like ordinary saprophytes with the usual alkaline dyes. 3. It is strongly aerobic and grows best in somewhat dilute solutions where when incubated at optimum temperature (from 103° to 105°) it grows from the surface downwards. 4. In some media, to be described later, it forms a filamentous growth at room temperature, but its optimum temperature seems to be between 103° and 105°. It grows well even at 100°. The following differences appear when incubated at 104° and 105°. At 104° F.: (a) the medium becomes cloudy at first and is only cleared up after prolonged incubation or use of alkali; (b) a white mycelium rapidly forms; (c) the bacilli are thin and small; (d) it takes 60 hours to get played out; and (e) a sticky sweet odor is produced like that when growing bacillus scrofulae. At 105° F.: (a) the medium is clarified at once and from above downwards, a heavy precipitate falling in most instances, and the bottom layer of the medium remains germ free and undecomposed until the last; (b) there is no trace of mycelium even after very prolonged incubation—five to six days; (c) the bacilli are large and very broad and there are huge clumps; (d) the process is mostly finished in about from eight to 12 hours; and (e) there is absolutely no odor. 5. A considerable amount of acid is formed by this bacillus, for it is found that in a few to eight grains of granitic soda per gram watery extract of fresh meal, bran or egg albumin qualified with grape sugar, the medium is rendered acid inside 24 hours when incubated at 105° F. and a heavy precipitate of alkali albumin is formed. 6. It bears the presence of a considerable quantity of lactic acid, but all volatile acids—acetic, butyric, etc.—increase with its growth. 7. Its most favourable medium is a diluted wheat bran mash. 8. The rapidity of growth in suitable media is phenomenal. 9. It readily digests coagulated albumin and grows well in both acid and alkali albumin. 10. In suitable glass estimations—after gelatin of neutralized watery extract of ground peas and grape sugar, etc.—it forms circular whitish colonies with a smooth margin. 11. On solid media it forms a wrinkled gelatine and here a neutral or alkaline medium is usually more suitable than an acid one. 12. It digests gelatin. 13. It requires a considerable quantity of sugar for its nourishment. 14. It forms a mycelium under unfavourable conditions: (a) incubation below 100° F.; (b) want of sugar; (c) want of albumin; and (d) no alkaline a medium.

At the time when these experiments were started my object was to find whether it was not possible to prepare artificial anthrax for some of our common germ diseases. These were the early days of bacteriology and the subject then was somewhat in its infancy. Very little was known of anaerobes and their specificity. There were several theories in those days as to how immunity was produced, and, like everybody else, I had my own, which, briefly stated, was as follows. When the organism is attacked by a germ producing any one of the well-known germ diseases the symptoms, etc., are due to the circulation in the blood of a poison—now called toxin—of some sort or another. It was argued that this poison, instead of being entirely thrown off and so allowing the disease to go on indefinitely, was converted, partially at least, into an antitoxin. This conversion was held upon as being entirely of a chemical nature. Now the blood being the great oxygen

cured by sclerotomy. Case 5, needle operation, followed by acute glaucoma three months after extraction; cured by iridectomy. Case 6, chronic glaucoma, commenced three months after extraction; cured by iridectomy. A second attack six months later was cured by sclerotomy. In two of these cases the glaucoma followed immediately upon, and was probably caused by, a needle operation. The cases are Nos. 1, 41, 48, 56, 95, 115, all recovered with vision $\frac{1}{8}$ or better.

Astigmatism varying in degree from 0.50 to 8 D. is noted in 74 eyes, and I expect that it occurred in many more, but I do not think I was so careful in looking for it in my earlier cases; had I done so I think it probable that the vision of several cases given as $\frac{1}{8}$ and $\frac{1}{16}$, with simple spherical lenses, might have been raised to $\frac{1}{4}$, $\frac{1}{8}$, or even $\frac{1}{2}$ with compound lenses. The very frequent occurrence of astigmatism after cataract extraction suggests that if it can be produced by an operation, it can be cured by the same means; and it seems to me that the operative treatment of high degrees of myopic astigmatism is a matter requiring attention. In all my cases the astigmatism was in or approaching the vertical meridian, showing that the cornea is flattened towards the incision; so that if an incision were made for the cure of astigmatism, its direction should be at right angles to that meridian of the cornea which it is desired to flatten. I say advisedly myopic astigmatism, because what is done by an incision in the cornea is to cause flattening, and if one were made in a hypermetropic eye it would have to be planned so as to flatten the least hypermetropic meridian, and so would increase the total hypermetropia and the patient would be little if any the better for it; at any rate, he would still have to wear glasses.

The question of performing extraction in one eye, when the other has sufficiently good vision to enable the patient to follow his usual avocations in life without difficulty, seems to be one upon which ophthalmic surgeons are not quite in agreement. I see patients from time to time who have been told the cataract must be removed without delay or that a preliminary operation must be performed at once. In some cases the surgeon has even gone so far as to emphasise the pressing necessity for immediate operation by requesting the patient to wait a few minutes whilst he telephones to his nursing home to inquire if there is a vacant room so that he or she may be taken in at once; and all this when the other eye has vision $\frac{1}{4}$ or better, can read J. 1, and has little or no opacity in its lens. I never recommend extraction in one eye (when the other sees well enough for the patient's requirements), for visual reasons only. I tell him that from that point of view he will gain little or nothing from an operation, but that if he has any other reason for wishing it done I am quite ready to do it. Some people do not like the look of the eye, or others do not like the look of it and decline to employ persons who appears to be blind in one eye. In one case, No. 114 in the list, the right eye had a very visible cataract, whilst the left had vision $\frac{1}{8}$ and no lens opacity. The patient was a handsome woman of 45 years with daughters to take into society, and she did not like either the look of her eye or the remarks other people made about it. I extracted the cataract with the result that not even an expert could have told which eye had been operated on without making a special examination. I have extracted cataract existing in one eye only, for medical men, because their patients noticed it, and I have also done it for persons going abroad for lengthened periods whose sound eyes might possibly become useless before their return, and I do it in cases where the lens appears to be undergoing degenerative changes and is likely to become dislocated. There never can be any hurry about a cataract extraction. An eye which has had only perception of light 30 years or more will see just as well after extraction as one that has only been in the same condition 12 months or less. Cases 72 and 89 are instances of this; in the former the eye had been useless 25 years, in the latter 46 years (the cataract was probably congenital), but vision after extraction was $\frac{1}{4}$ and J. 1 in the first, $\frac{1}{8}$ and J. 4 in the second.

The question of extraction in the second eye is also a matter about which the profession does not seem agreed; my practice is not to recommend it in any case where the operation on the first eye has been entirely successful. But should the result of the first operation be unsatisfactory or the eye become damaged from disuse or injury at any time after it, then I strongly advise the patient to have the second eye done. I also extract in the second eye if the patient wishes it, or for reasons the same as those already given

when speaking of cataract in one eye only. In this series I have operated on both eyes in six patients. The second eye was done in five cases by the patient's desire, and in one because the sight of the first eye was lost from detachment of the retina. Two cases are noted of albuminuric retinitis, one of which died from uræmia four years after the extraction was performed. Diabetes is noted in one, and the retinitis dependent on it spoilt the result of what was otherwise an entirely successful operation. How many more of my patients had diabetes I do not know, for I never take it into consideration when proposing an operation for cataract, and do not inquire about it; it makes no difference whatever to the result, except in such rare cases as the foregoing and in quite young subjects who are obviously very ill and unfit for an operation of any kind.

My method of operating is simple. I use antiseptics to the extent of thoroughly cleansing the eye with perchloride solution 1 in 4000 and afterwards with 10 per cent. boric acid solution, which I also use for washing during the operation. For the application of solution and for sponging I use swabs of cotton-wool. I have never gone to the extent of shaving the eyebrows, cutting the lashes, and covering the face with a carbolic towel with a hole in it for the eye. If the conjunctiva is in an unsatisfactory condition I do my best to set it right; if discharge from the lacrimal sac exists I do my best to cure it, and failing that tie up the canaliculi, as recommended by Dr. Buller of Montreal, so as to keep in the discharge until the operation wound has had time to heal. Of the 124 patients operated on two had chloroform and one had A.C.E. mixture; the remainder were operated on under local anæsthesia, cocaine being used in all. At first I used it of varying strengths, but have for some years used a solution of 5 per cent. I am so thoroughly well satisfied with the action of cocaine that I have never tried any other of the local anæsthetics.

I perform my operation in the following manner. The eye having been thoroughly cleansed and cocaineised I first pass a silk suture through the conjunctiva below the lower corneal margin; next direct the patient to look downwards, and having got the eye into the required position draw the suture moderately tight and have it fixed on the cheek by the thumb or finger of an assistant. I use no other fixation. I next draw the upper eyelid upwards sufficiently to expose the upper margin of the cornea. I never use a speculum or fixing forceps, but keep the lid in the required position with the index finger and steady the globe by pressing very lightly upon its inner surface with the second finger of the same hand. Then with a Græfe's knife I make a section in the sclero-corneal junction forming a flap of rather more than one-third of the cornea. As soon as the incision is finished I tell my assistant to let the suture go, hold it myself, and lacerate the capsule. I then remove the lens by pressure with the thumb or forefinger applied to the surface of the lower lid, just below the lower margin of the cornea, aided by counter pressure applied in the same manner above the incision. If the pressure is properly applied the incision begins to gape, the iris protrudes, the pupil dilates, and the lens escapes through it. Having removed the bulk of the cataract I take care to press out all cortex, and then if the iris has not returned to its normal position I replace it by rubbing the upper lid lightly upon it and if that does not suffice I push it back with the curette. In some cases pressure through the lid will not cause the lens to escape; in such, I remove it by light pressure with the curette applied directly to the eyeball. I never hurry over the operation, but when the lens has been entirely removed and the iris has returned to its normal position I leave the eye exposed to the light for a few moments; by so doing the pupil contracts and remains contracted and the risk of prolapse is lessened.

After the operation I cover both eyes either with a pad of sal alembroth wool and gauze or Gamgee tissue, or pads specially made for the purpose, secure the pads by a light bandage, and put the patient to bed, where he remains for three days. I remove the dressing on the second day but keep reapplying it, and afterwards dress the eye every day, but keep both eyes bandaged for a week, without opening either unless there is some special reason for doing so, such as pain, swelling or redness of the lids, or unusual discomfort. If prolapse of the iris occurs to any considerable extent I remove it as soon as I find it; small prolapses I leave alone. With regard to iridectomy, I perform it in all cases where there are numerous synechia or where from any cause I expect that the pupil will not dilate sufficiently to allow

rought down without touching the white. It should be thoroughly washed and filtered rapidly, otherwise the lactic acid bacillus described above turns the precipitate blue and sour and it, of course, becomes worthless.

With practice success is fairly uniform in the above, but it could be pointed out that a bluish tinge is superadded in the tannate or indeed a pure blue got in the following circumstances: (1) when mash is too thin (too much top liquor); (2) when incubation is prolonged beyond 14½ hours; and (3) when the secondary fermentation (after straining) is carried beyond three hours. A white tannate only is got (1) when incubation is much below 125°; (2) when a cold water secondary fermentation is made, that is, when we do not paralyze the lacto-acetic acid bacilli; and (3) when the tannate is altered too slowly it is turned sour and white by lacto-acetic acid bacilli. The white is useless and the tannate is nearly so.

D. Secondary fermentation of a saccharified soured bran mash.—In this method, which yields the best product we saccharify in exactly the same manner as the distiller saccharifies his malt mash, only we use bran in place of great malt. The saccharified mash when cooled to 130° is then inoculated with a pure culture of the bacillus 50 hours old and grown in a material like green malt wort, &c., and incubated for from 14 to 24 hours at 126°. The distiller does not of course prepare his saccharified mash for this purpose, but either lets it sour spontaneously at 122° or inoculates it with a pure culture of the distillery lactic acid bacillus (*bacillus acidificans longissimus*, Lafar, *bacillus Delbrückii*, &c.). The soured mash is then used for the cultivation of yeast. In the case under consideration the object is to get the bacillus to grow to a certain extent at least along with the lactic acid germ which appears spontaneously in our incubated saccharified bran mash. When the mash is now diluted with an equal part of cold water (boiling water is unnecessary here), strained, and allowed to stand, a "secondary fermentation" takes place, the bacillus growing at an enormous rate, and the rods and filaments formed here are the biggest objects in the shape of bacteria that I have ever seen under a microscope. As a consequence the supernatant liquor quickly becomes dark sherry-brown and clear. Precipitation is made after six hours but quite a good precipitate is got after three. There is no undigested stuff now, consequently we can use excess of tannic acid; there is therefore no white precipitate to avoid and when the experiment succeeds there is no risk of getting blue even on incubating the mash for 43 hours and allowing the secondary fermentation to go on 24 hours. However, under faulty methods we here again find "blue" creeping in as in C. The above method does not always succeed, and I frankly confess that in my hands failure is very much more common than success. I shall therefore fully describe the appearance and characteristics of the mash as well as of the tannate when successful, so that anyone repeating this work may know what to strive after. The mash is perfectly "quiet"—that is, there is not a gas bubble anywhere. The supernatant liquor is dark sherry-brown and clear. There should be no trace of top growth (*zoogloea*). It has a feeble but pleasant sour smell. The liquor of the mash itself effervesces strongly on adding sodium bicarbonate. Tannic acid gives with the top liquor a white, turning at once a beautiful "pink blue," which rapidly settles in a clear liquor from which no further precipitate can be got with anything. On adding tannic acid to the expressed liquor of the mash itself a permanent white granular precipitate is given (gluten altered by lactic acid germ). The tannate got from the secondary fermentation is like that of the top liquor, a "pink blue," but the colour is the only resemblance, for there are several differences between the two. The growth in the top liquor being a practically pure one, it is feeble in action, like all pure growths. In the mash itself, however, the lactic acid germ grew well and furnished the necessary albuminoid pabulum which the bacillus converts into the remedy. The top liquor tannate crumbles to pieces, small cubes, when dry, while the tannate of the secondary fermentation is a material almost as hard as horn, breaks with a vitreous fracture, and when a small piece is held up against the light it is found to be transparent and red like a piece of red glass. The effect of this material on a leper is marvellous. When pulverised it is bright red.

Another way to proceed is to copy F, that is, sour for about 24 hours a saccharified bran mash by means of a pure culture of a lactic acid bacillus (*bacillus Delbrückii*) is readily isolated

from soured green malt mash. I have not been able to use the lactic acid bacilli of bran mash for this purpose. Dilute with from one to two volumes of water at 130° F. and add a pure culture of the bacillus grown in green malt wort or ½ per cent. lukewarm salt extract of bran and grape sugar. The medium on which the bacillus is grown here must be acid and vegetable, as I have always failed with A and B and others of the same sort. Another way is to add two volumes of water at 200°, which will now bring up the temperature of the mixture to 158°. Stand open for one and a half hours and inoculate. Here again we do the same thing as the distiller, using a pure culture of the bacillus in place of a pure culture of yeast, as our object is a different one. In my hands this method has not given uniform success either. My difficulty has been to find a wort in which *bacillus Delbrückii* will grow well. The distiller's success is probably due to the fact that he is able to use the "hochdruck" process and so is able to force albumin into solution. The secondary fermentation is therefore often slow and when allowed to stand 24 hours will either give a permanent white tannate or a deep blue one.

E. Salt extract of fresh meat.—If a ½ per cent. salt-water, cold 24-hour (or less) extract is made of fresh minced meat and a few drops of a culture such as B are added and left standing at room temperature a peculiar phenomenon is observed. A fulminating growth, I can use no other word, takes place here, just as in a diluted soured mash. In 15 minutes growth is visible to the naked eye, and in three hours numerous white round masses of various sizes have formed which gradually run together. In a deep vessel some of these masses will run to the surface and form a layer very much like pus; in a shallow vessel, however, they settle to the bottom. The top liquor is rapidly cleared up. In six hours the whole process is finished. These masses consist of myriads of bacilli bound together by a soft material which is really a precipitate formed from one or other constituent held in solution by the extract. I do not think that the material is a secretive product of the bacilli and I do not therefore look upon them as *zoogloea* masses. Tannic acid gives a permanent white precipitate here, with no tendency to colour up. It was once administered to a leper without any effect. The same thing is seen in lukewarm extracts, but the temperature must be below the coagulating point of myosin. When the fermented liquor is boiled no precipitate is given, showing that the albumin in solution had been used up.

F. Lactic acid and salt extract of meat.—This is more or less an imitation of D using lactic acid in place of the lactic acid bacillus, and meat and grape sugar in place of the saccharified bran mash. Make a 24-hour cold extract of fresh minced meat with water containing ½ per cent. salt and eight minims per pound of acid lactic. Filter. Add 2 per cent. of grape sugar. Inoculate with a few drops of pure culture of the bacillus from A or B. A very rapid growth is set up at once at room temperature, which becomes visible after 15 minutes. In two hours there is a heavy deposit and small lumps continue to settle down. In five hours, more or less, it is completely played out and the medium now consists of a clear brown liquor, with a heavy deposit at the bottom of the vessel. The process is therefore absolutely analogous to the secondary fermentation in a diluted soured bran mash. As in the soured mash, the extract can be heated up to 158° F. and then allowed to cool to 130° and inoculated, when the same result is got. In all these extracts and mash, however, as in the liquor of a soured mash and, indeed, all media that I have employed so far, if we heat up to boiling point for purposes of sterilisation, even where no precipitate is formed a secondary fermentation is impossible, and we can only then incubate for 60 to 70 hours to get a good result.

Tannic acid gives a white turning blood red in above. Oxidation, however, is slow and is only complete when the tannate is exposed in a moist state to the air in the process of filtration. This fault can, however, be remedied by precipitating in the presence of the oxydases and diastase of bran which can be obtained by making a 158° F. watery extract of bran. I do not want to discuss the question as to whether bran contains an oxydase or not or whether there is such a thing in nature at all, but those who are interested in this question of oxydases may consult Oppenheimer: "Ferments and their Action" (Charles Griffin). It appears certain, however, that translocation diastase, of which bran contains a lot, possesses the power of oxidising some fresh tannates of animal and especially vegetable bodies.

carrier, it was thought that most likely this chemical conversion would be a process of oxidation. The use of our old, and now very much neglected, friend permanganate of potash in disinfecting putrid materials did much to fix this idea in my mind. To isolate and oxidise the toxins of pathogenic micro-organisms was out of the question, but the idea occurred to be that we could utilise the whole army of saprophytes, and possibly the oxidised metabolic products of some of them at least could be utilised to fight bacterial disease. The first germ selected to furnish such a product was the one at present under consideration. To grow this germ and to show that it had produced certain definite chemical compounds was easy enough, but there were difficulties regarding their oxidation. A current of nascent oxygen might or might not do it. Various futile attempts were made which need not be described here. The idea at last occurred that we could fix these compounds to materials capable of combining with oxygen. Pyrogallie acid, tannic acid, &c., were thought of. At last the latter was selected. The bacillus was then grown in various media and after varying periods of incubation the metabolic products were precipitated with tannic acid. The rapid production of a coloured from a colourless precipitate, especially after aeration, satisfied me that I now had an oxidised bacterial product. After satisfying myself that the stuff was perfectly harmless by giving it to dogs and cats and taking it myself in considerable quantities for days, I tried it in a couple of cases of syphilis. Here, however, it appeared to do harm. In one or two cases of tertiary syphilitic ulceration, after a temporary improvement due to removal of inflammatory exudation, the destruction of tissue seemed to go on with greater rapidity. In two cases of syphilitic rupia the crusts rapidly dropped off after a few doses per os and left open bleeding ulcers, which, however, rapidly healed under iodide of potash. A case of scirrhus of the breast was next treated. The whole breast was hard and tense and in the position of the nipple, which had disappeared, was a scooped-out ulcer about two inches in diameter in a circular cartilaginous mass three inches across. After four or five days, taking two doses per os daily, the whole breast collapsed and became soft and flaccid. The cancer mass was now hanging outside the breast in the form of a soft, red, very vascular lump about one-half its former size. The temptation to snip it off with a pair of scissors was very great, but the patient, who was delighted with the result, informed me that she had just received by post a pot of ointment from a cancer curer and she thought that the ointment would do it much better and more thoroughly than the scissors. The patient, who was a visitor, left shortly afterwards and I lost sight of her. From the effect produced in the above cases I thought that most likely leprosy, especially the tubercular form, should derive some benefit from it. Some months afterwards a case of mixed leprosy was brought to the Boshof Gaol Hospital and with the permission of the Orange Free State Government treated with results described hereafter. Encouraged by the results obtained in this case it was not difficult to see that the twin brother of leprosy—namely, tuberculosis, should also yield.

Attempts were now made to prepare the best product possible and for this purpose the bacillus was grown in an endless variety of media. It was soon found, however, that although some media supported the bacillus well little or no active stuff was found in them. For the production of the latter we require albumin just sufficiently broken down to enable it to remain in solution on heating to 158° F. or boiling. Acids and alkalies can be used for this purpose but the best of all is one of the lactic acid bacilli of the distiller. It was also found that a sharp line had to be drawn between albumina derived from the animal or vegetable kingdoms. Preference is to be given to the latter. I can only, therefore, recommend the tannate of the products obtained by growing the bacillus in a diluted soured bran mash. Even a pure growth in a vegetable medium is much inferior to the double growth of the bacillus and the lactic acid bacillus. In this growth of the bacillus and the lactic acid bacillus the bran mash the gluten becomes altered by the lactic acid bacillus to such an extent that it easily goes into solution and now behaves very much like acid albumin. The tannate of unaltered gluten is a nummulary sticky material. The tannate of the altered (acid) gluten is white and granular. The tannate of the product derived by feeding the bacillus on this altered gluten constitutes the remedy and will be on this altered gluten constitutes the remedy and will be described hereafter. The following are some of the media in which the bacillus has been grown.

A. Lactic acid extract of meat.—Make a 24-hour cold extract of fresh minced meat and distilled water containing eight minims per pound of lactic acid and $\frac{1}{4}$ per cent. common salt. Filter. Add 2 per cent. of grape sugar. Sterilise. Inoculate from a recent growth on agar. Incubate at from 120° to 126° F. for from 60 to 70 hours. Filter. Precipitate with solution of tannic acid at once. A white precipitate is given which soon turns to what I have called all along in my notes a "pink-blue"—that is, a precipitate which is bright red or pink by transmitted light, and a bluish or, better still, steel-grey, by reflected light. The best way to examine a precipitate is to let it settle down in a white enamelled dish, when the margin is found to be a bright transparent red and the rest of the surface steel-grey. The precipitate should be excessively fine and not flaky or coarse. All the best products are pink-steel-grey. In impure growths there are various shades of "blue," but the correct one is easily learnt with a little practice. A precipitate here, as in the various bran combinations, may when very impure be blue throughout, there being no pink edge under water. The above precipitate turns black when dried and is readily pulverised.

B. Caustic soda extract.—This can be made either with fresh minced meat or bran and was made on a large scale as follows. Take 1600 grains of common salt, 180 grains of caustic soda, one pound of fresh minced meat, and two pounds of water under 120° F. Cover. Stand at room temperature for 24 hours, after which add 22 pounds of cold water. Stand for six hours. Filter. Put into 16 flasks (four-pound canned fruit bottles with specially constructed covers were used) and add some more water until each flask contains three pounds of liquor. Add 2 per cent. of grape sugar. Sterilise. Inoculate. Incubate at from 120° to 126° for from 60 to 70 hours. Filter. Precipitate at once. The flasks should have a perfectly clear, yellowish-brown liquor with no zooglia and a heavy precipitate at bottom. The tannate here is a fine red.

C. Somewhat crude products but quite good enough for recent acute or old quiescent cases of pure tuberculosis of the lungs, lupus erythematosus, and lupus non-exedens can be made as follows. Digest for from 24 to 30 hours at room temperature half a pound of fresh minced meat or whites of four eggs in 13½ pounds of water and one and a half drachms of lactic acid or three drachms of hydrochloric acid, or, better still, three drachms of hydrochloric acid and about a teaspoonful of papain (Finkler). Put into a 16-pound tin furnished with lid (enamelled is best). Heat up to from 162° to 164° F. Stir in a quantity of bran to form a fairly thick mash. The quantity of bran added should be enough to leave when settled about from two to three inches of free liquor on the surface. Cover tightly with the lid and one or two layers of lint. Put at once into an incubator set to keep up a temperature of 126°. Incubate for 14½ hours. The incubator should now show a temperature of from 126° to 128°. The temperature of the mash itself is from 130° to 128°. Take out and fill up tins at once with boiling water, stirring well as the water is added (best done with Dampfmaischholz of the distiller). Temperature of mash should now be about 152°. Cover tins again. Stand three hours. Strain while still hot into open dishes. Stand three hours exactly. Pour off supernatant liquor, which precipitate. Precipitation requires here a certain amount of care. In the above we have set up a somewhat feeble lactic acid fermentation, but owing to the high temperature very little, if any, lactic acid is formed. The boiling water is added to kill or, at all events, temporarily to paralyse the lactic acid bacilli. The bacillus grows very rapidly after straining but can only be allowed three hours, otherwise a lactic acid bacillus forming very much more acetic than lactic acid which can only be completely killed off by a boiling temperature enters the field. This bacillus, which is a short rod about twice as long as it is broad, feeds on the products of the bacillus which furnishes the remedy and produces a blue tannate.

The tannate obtained in the above process is white turning rapidly into a very heavy excessively fine dark maroon red. It is very gummy and sticks to filter paper. When dry it is pitch black, very hard, and breaks with a vitreous fracture. It is not easily pulverised. In powder form it is again maroon red. The amount of precipitate got is small for the amount of labour. As there is a very large amount of undigested stuff here which gives a permanent white precipitate with tannic acid the latter should be added in very small and dilute quantities. The red precipitate comes down first and with a little practice the whole can be

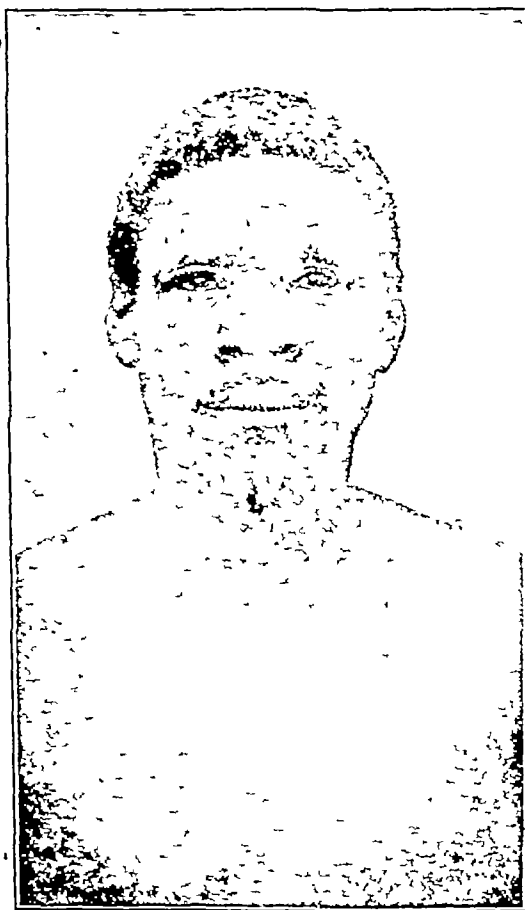
appeared to have got rapidly worse during the previous months. There were four large patches of infiltration, nodular, on the forehead, one above each eye, two smaller ones between them. Large tubercles occupied nearly the whole of the right lower eyelid and there were several smaller ones on the cheeks, the right side of the nose, &c. There was a large number of maculae on forehead and face, the neck, the body, the arms, and legs. The face was distinctly leonine, the right eye practically closed up. The total number of maculae between 100 and 200, varying in size from one-eighth of an inch to two inches in diameter, and on the front of the shoulder was one measuring two inches by two and a half inches, while on the right side of the neck was one six inches by three and a half inches. The ears were swollen. The muscles of the forearms and hands were atrophied to an extreme degree. There was slight contraction of the fingers. The patient had practically no power in his hands and arms. The skin of the forearms and hands was dry and scaly. The muscles of the legs were atrophied to such an extent that he was unable to get up or walk. There were severe pains, especially at night, in the feet and legs. The skin of the feet and legs was dry and very scaly. Sensation in the feet and the greater part of the legs and hands was absolutely gone. There was very little sensation (patchy) in the forearms. The carpal nerves were swollen and nodular. The nail of the middle toe on the left foot was gone; all the other nails were thick, scaly, and very brittle. The patient refused to be photographed.

Treatment was commenced on July 3rd, 1898. The patient was seen again about a week after, when it was found that the whole face had subsided so that it was less leonine and the tubercles stood out much more distinctly. After another week the leonine aspect of the face was completely gone and the ears presented a peculiar shrivelled-up appearance, the skin being puckered, especially the lobules. The patient was now able to open the right eye fully. It was next noticed that the tubercles and maculae grew darker and darker until all the former and most of the latter became pitch black, those that were exposed to light getting much darker than the protected ones. Next all the parts that were black desquamated. There was also very extensive desquamation in the feet and legs up to the knees. The tubercles threw off thick scabs, but in the case of the maculae the epidermic layer thrown off was very thin. From the very commencement the tubercles diminished in thickness until August 25th when they were flat, puckered, and slightly raised above the surrounding skin. It should be mentioned that this pigmentation and desquamation were repeated several times. The tubercles were soft and pliant so that when the patient wrinkled his forehead the natural transverse wrinkles ran right through them. After the desquamation had come to an end the maculae grew lighter and somewhat reddish in colour, especially those on the neck, face, trunk, and upper arms. They were then soft and shrivelled and most of them were depressed (hollowed out) owing to the complete removal of leprosy infiltration. When the skin was relaxed several of them formed quite a cup-shaped depression. A little later the small maculae were represented by slightly whitish or decolourised patches which could scarcely be seen. The larger ones showed the same change, the decolourising process starting all round the margin, leaving a central red spot which ultimately also disappeared. At this stage it was found that the swelling of the feet and legs was gone, the removal of the swelling from the legs showing that there was very little muscle left; hence the patient's inability to get up.

On August 31st the patient volunteered a statement that sensation was returning in his hands, and on being tested this was found to be correct. There was no sensation as yet in the feet and legs. On examining the toe-nails it was found that they had grown about one-eighth of an inch, there being a piece of new white, smooth nail at the proximal end in each case. On the second toe of the left foot (which was without a nail at the commencement) a new and healthy nail was coming out. On Sept. 24th the patient had considerable power in his hands and was able not only to put on his shirt but also to button it. At the commencement of what little he did was done with the thumb of the right hand. The sebaceous glands situated in areas occupied by tubercles on the face now secreted thick plugs of sebum, and these areas looked much like the maculae at the stage when

all leprosy infiltration had been removed. It should be added, however, that what was taken at the commencement as a single tubercle or infiltrated patch was found to consist of several islands the moment the serous infiltration was removed. On the 28th, so far two changes had been noticed since the patient was put under treatment: 1. Removal (now almost complete) of leprosy infiltration. At first the subcutaneous oedema disappeared by which the feet and legs subsided, and the leonine appearance of the face grew less. The tubercles also stood out more distinctly and became for a time almost pedunculated, and what was at one time considered to be a single infiltrated mass became broken up into several islands. After the above change the tubercles and maculae became absorbed. 2. Restoration of function. (a) Sensation returned in the hands and forearms (later it will be seen in the feet and legs also); (b) muscular power became restored in the hands and forearms (later it

FIG. 1.



Showing result of treatment in a case of leprosy.

will be seen in the legs and feet also); (c) nails grew (restoration of trophic nerves); (d) sebaceous glands in positions occupied by tubercles secreted sebum; and (e) patches of pitch-black smooth and glossy beard grew in the position occupied by maculae on the cheeks.

On Oct. 1st sensation was returning in the legs and on the 10th it had completely returned down to the ankles and on the inside to about two inches below the malleoli. There was no sensation in the feet. On the 20th, during the last fortnight the muscles of the legs, especially the calves, had rapidly re-formed. The right calf was practically normal in thickness and was about twice as thick as it was after the oedema had gone down. The result was that the patient could now, after he had been helplessly paralysed for months, get up with the aid of a stick and walk some little distance by supporting himself against the

There are several other combinations in which the bacillus can be grown, but I have selected from 7000 pages of notes those which indicate the general principles on which we have to proceed to prepare the remedy and which at the same time bring out the chief characteristics of the bacillus.

At this stage nothing can be said as to the nature of the products produced by the bacillus in various media, as the means at my disposal at present do not enable me to work out the matter satisfactorily, but it is hoped that at some future time I shall be able to visit one of the properly equipped laboratories in Europe, where, I have no doubt, it will be an easy matter to study the chemistry of the bacillus and in all likelihood considerably to improve the material with which I have been treating my cases. At the present moment it is sufficient to say that the active material is not produced in all media, as a very free growth can be got in some combinations without a trace of any active material being in evidence as proved by chemical and therapeutic means.

My object in publishing my work in an incomplete form is merely to induce others to take it up and give those finishing touches to it which are beyond the means of an ordinary practitioner in general practice. And while I make this remark I would also like to suggest to those who are more fortunately situated than myself to apply the same principles of precipitation by acid tannic and oxidation with the help, where necessary, of ferments, of ordinary tuberculin and tuberculin T.R. It is possible that the metabolic products of bacillus tuberculosis may be converted into an oxidised tannate with the help of one of the numerous ferments—oxydases, &c.—and so be converted into an antitoxin. As regards the intracellular toxins (tuberculin T.R.) if oxidation is not possible or desirable tannic acid will at least be a means of carrying them uninjured through the stomach into the bowel where absorption readily takes place, and when I am inclined to believe better results will be obtained than by the hypodermic method. The same principles could, of course, be extended to other pathogenic micro-organisms, and there is no reason why the group of harmless micro-organisms should not yield us products as useful as the one that forms the subject of this communication.

Tannic acid may probably also be employed to precipitate the active part or parts of all antitoxin sera, when a more stable product will be got and one more easily administered. The practitioner in a far-off place often has to throw away a life owing to his serum being too old and useless, or to the parents or patient raising objections to hypodermic administration.

Mode of employment.—On a few occasions the hypodermic method was resorted to but owing to the labour and time involved in preparing the material for this purpose, neither of which I could afford in a somewhat busy practice, I have been compelled to administer it by the mouth, air-dried and pulverised. The final product is insoluble in acids but readily dissolves in alkalis. It is administered when the stomach is empty and usually with a little sodium bicarbonate as a precaution. A portion is therefore absorbed in the stomach itself and what escapes destruction there is passed on to the intestine where the alkaline fluids readily cause absorption.

Mode of action.—When injected hypodermically the unaltered albuminoid body produces a thermal reaction with temporary redness and shrinking of lupus and leprotic patches. No permanent benefit, however, is produced.¹ The tannate, on the other hand, acts like a true antitoxin whether given by the mouth or hypodermically. There is here no local or general reaction. This, of course, applies to the product obtained in D. No elevation of temperature is produced; indeed, any pyrexia present—for example, in acute pure tuberculosis of the lungs—is speedily removed. A feeling of general well-being with improvement of appetite and rapid gain in weight, where there has been a loss, soon follow. Another reason for stating that it acts like a true antitoxin is the fact that the changes which take place under administration in a lupus or a leprotic patch are exactly those which we observe in places where nature partially or wholly effects a cure. In a considerable number of cases of lupus and of leprosy I have noticed that the disease progresses by fits and starts. This

is especially true with regard to leprosy. During the quiescent stage nature seems to be able to throw the disease off in some spots at least, and here we have the three phenomena of pigmentation, desquamation, and absorption. The same changes are seen in cases of lupus and leprosy under treatment.

While the same material acts specifically in both leprosy and tuberculosis it is only right to state that the former requires the very best product, such as D, for its successful treatment and for a much longer period. The latter yields rapidly and readily to materials containing merely traces of the active product. The lung (phthisis) yields more readily than the skin (lupus). In fact, in no form of treatment, specific or otherwise, of any diseased condition that I am acquainted with, with the exception of diphtheria antitoxin in uncomplicated (pure) cases of diphtheria, is result more rapid and certain than in cases of pure tuberculosis of the lung treated by this method.

Thus far three classes of cases have been treated successfully: A. tuberculosis of the lungs (including glaucoma in the neck); B. tuberculosis of the skin; and C. leprosy. In treating these cases by two to three doses per os daily find the following changes.

A. Tuberculosis of the lungs.—Consolidation is rapidly cleared up, recent cases taking from seven to 14 days; chronic cases somewhat longer, and other physical signs disappear, so that it becomes impossible to say by percussion or auscultation which lobe it was that was affected. Cough and raised temperature where present disappear, a sense of general well-being is produced, which very often makes the patient lose his or her head, appetite returns, and the patient rapidly puts on weight.

B. Tuberculosis of the skin (lupus) and C. leprosy (all lesions).—The changes produced here are absolutely identical and consist of the three processes of pigmentation, desquamation, and absorption of the infiltrating material. Light-haired persons the patch becomes deep red, in dark-skinned ones mahogany-brown, and in black skins a jet black; desquamation soon follows but the superficial layer is no sooner cast off but pigmentation again appears. Meanwhile absorption is going on slowly, sarcoma infiltration disappearing first and then cellular, and at the end a scar, or more correctly a patch of atrophic skin, is left behind. There is no pigmentation where the rete Malpighii is destroyed and in deep-seated infiltrations where the rete Malpighii is not affected (sometimes seen in leprosy) there is neither pigmentation nor desquamation. Pigmentation is most pronounced in exposed parts.

The cases treated will be taken seriatim as much as possible and the changes which took place carefully described so as to bring out the effect produced. It must however, be distinctly understood that there has been a lot of groping in the dark as the subject was but badly understood at first and I was more often led astray than helped by quite a mass of both English and German bacteriological literature obtained from Europe from time to time. I purposely omit all references therefore in this paper. The result of my difficulties was that the material used from time to time varied much in therapeutic value, in fact, as a great deal of experimental work had to be done all along it follows that at times my patients for weeks at a stretch swallowed stuff that was totally inert. This was especially the case with the first five lepers.

In July, 1898, the late Free State Government very kindly placed five lepers at my disposal and arrangements were subsequently made to put me in charge of the new leper asylum at Bloemfontein and to give me the necessary laboratory appliances to carry on my investigations but the war unfortunately broke out with results known to everybody. It was made clear to all the lepers that they were to be the subjects of scientific experiment, made solely for the purpose of finding a remedy for their terrible disease and in no case was the hope of cure held out. It is strange that in all these cases and a number treated elsewhere subsequently there was not the faintest hesitation; in fact, several willingly offered to sacrifice their lives if thereby means could be found to put an end to the sufferings of others. It is still more strange, however, that in spite of this disregard of life all of them with one exception, where the face was affected, refused to be photographed.

The five Free State cases were the following:—
CASE 1.—The patient was a native male, aged about 40 years. The duration of the disease could not be settled, but

¹ This applies to a whole host of albuminoid bodies, albumoses, &c. See St. Petersburger Medicinische Wochenschrift, 17 (23) April, 1899, "Ueber die Wirkung der Bacterienproteine und der Deutero-albuminose" bei der Lepra." Ed. Soomatz; also Matthes and Krehl, Archiv für Experimentelle Pathologie und Pharmakologie, 1895, vol. xxxvi., p. 437.

retained for five hours for the purpose of examination, and in no case was pyuria found when the urine was microscopically examined. There was no history of the symptoms and signs of gonorrhoea in any of the cases and no history of painful micturition. There was nothing in the family history of these patients to indicate tuberculosis, and none of them presented any sign of tuberculous infection. The exciting cause of the swelling therefore remains unsolved in all five cases and should indicate one of two things, either that the investigation of the disease is exceptionally difficult or that the ordinary causes assigned to it are not so common as supposed. Then, again, the patients were admitted consecutively just as they came for treatment, and, though the number of cases is small, one would have expected that not all the swellings present would have been situated on the right side of the body. In Case 5 the patient presented a second swelling on the left side, but apart from this it was always the glands on the right side that were involved. Such a coincidence does not indicate a clear knowledge of the cause of the disease. The chief mass of glands composing these swellings was formed by the glands of Group 1 and these were the first to become enlarged, whereas if the cause had been genital the enlargement should have been noticed first and chiefly in the glands of Group 2. However, the tracing and mapping out of lymphatics has been partly done from clinical rather than from anatomical experience and to apply the last argument would be to argue a circle. In some cases of bubo occurring in patients on board ship, when there is no possible chance of contagion, often for months at a time, and where the possibility of contagion having occurred is generally freely admitted at once, it is very difficult to discover a source of infection. The cases are as follows:—

CASE 1.—The patient, aged 22 years, was admitted on Dec. 23rd, 1904, and discharged to the convalescent home on Jan. 20th, 1905. He was a pale, thin man, and looked worn and ill when he first came to the hospital on Nov. 24th, 1904, complaining of a painful swelling in the right groin. The swelling had been noticed since Nov. 7th. A complete list of all suspected causes was given and there was no sign of a visible source of infection over the area mentioned above. The diagnosis made from the clinical characters of the swelling was that of inguinal bubo, and since there were present with the swelling redness, heat, pain, tenderness on pressure with fluctuation at the most prominent part of it nitrous oxide anaesthesia was induced and an elliptical incision two inches long was made over the part that yielded fluctuation and about five drachms of pus were evacuated. The relief of the pain was considerable and the patient was instructed to lie in bed at home and have the wound fomented every four hours with boroglyceride, a teaspoonful to a pint of water. He came to the hospital every fourth day for examination and in order to avoid moving the limb he used crutches. On Nov. 30th some enlarged lymphatic glands presented in the wound and were removed, the original incision being enlarged to four inches to improve the drainage. Sections of the glands examined microscopically showed the presence of a small amount of fibrous tissue; there was no caseous area and no sign of sarcoma. On Dec. 21st there was a softened area in the subcutaneous tissue on the inner side of the upper part of the right thigh just to the inner side of the axilla of the internal saphenous vein and under nitrous oxide anaesthesia an incision was made into the softened tissue. Liquefied fat but no pus was found. Both wounds at this stage were fomented every four hours and showed no sign of healing. On the 23rd there was tenderness along the course of the right internal saphenous vein, and the vein was palpably hardened as far as the inner side of the knee. The patient's temperature was 104° F., the pulse was 96 per minute and of full volume, and the respirations were 23 per minute. He was admitted to the hospital and put to bed, his right lower extremity being slightly elevated and flexed at the hip and knee. The fomentations were continued and gave him great relief. The temperature fell in an irregular manner to 93° on the third day after his admission and remained subnormal during the rest of his stay in the hospital. His diet after the first three days was light and nutritious. He took a draught containing quinine and iron three times a day and occasionally an aperient. On Jan. 2nd, 1905, the wounds were dry dressed. On the 5th four ounces of port wine were added to his diet. The wounds, though sluggish, healed on Feb. 11th, the patient being allowed up on Jan. 17th. The change for the better in the patient's general health after his admission to hospital was remarkable. No sign of tubercle was found in the chest on repeated examination. The total duration of his illness from the time the swelling was first noticed until the wound healed was 14 weeks. This patient at the present time, two years after his illness, is in good health. There has been no trouble from the scar which is quite supple and there has been no pain or swelling of the right lower limb.

CASE 2.—The patient, aged 31 years, was admitted on Jan. 28th and discharged to the convalescent home on Feb. 17th, 1905. He was a well-nourished man and came to the out-patient department on Jan. 2nd, 1905, complaining of a painful swelling in the right groin. The swelling had been first noticed the day before. The patient's general condition was good and he had no symptoms or signs of any other disease. Locally there was a tender, irregular swelling, 2 inches by 1½ inches by 1 inch, situated in the right groin. The long axis of the swelling was just below and parallel to, Poupart's ligament. The upper border of the swelling extended about half an inch above the line of Poupart's ligament. No fluctuation could be elicited. There was no sign of infection in the area mentioned before and the patient denied two years. There was no history of gonorrhoea. The treatment locally was by fomentations, with instructions to rest in bed, and

these instructions were carried out. The swelling increased gradually in size, especially at its lower end, and on Jan. 23th the patient was admitted to the hospital. His temperature was 99° F., his pulse was 80, and his respirations were 20. The urine was natural. The swelling now measured 3 inches by 2 inches by 1½ inches, apparently involved chiefly the glands of Group 3, and was adherent to the skin but yielded no fluctuation. It was tender. Under a general anæsthetic the surrounding skin was shaved and prepared for operation and the mass of glands was dissected out through a vertical incision two and a half inches in length made over the most prominent part of the swelling. The internal saphenous vein was found to be involved in the mass; it was ligatured above and below and the intervening portion was removed with the glands. The wound was closed with silk-worm gut except for a small drain and dry dressed. On cutting into the swelling numerous foci of pus were found and a broth culture was taken from one of these. The tube showed no growth on the third day. The mass of glands was of the same consistency throughout and a microscopical examination of a section showed chronic inflammation with foci of necrosis. There were no signs of sarcoma. The wound discharged large quantities of serum through the drainage into the dressings. It mostly healed by first intention and it seemed probable that if the main lymphatic vessels, both afferent and efferent, or as many as could be seen as they joined the glands, had been ligatured the healing of the wound would have been facilitated. The cavity left beneath the skin granulated up from the bottom and the base thus became joined to the skin over it. The place of exit of the drainage finally healed on May 24th. The total duration of the man's illness was nine and a half weeks. This patient at the present time is well. The scar is sound and painless. He has noticed that his right leg swells more than his left when he stands up for long at a time.

CASE 3.—The patient, aged 43 years, was admitted on Jan. 30th and discharged on March 4th, 1905. He first noticed an aching pain in his right groin on Dec. 2nd, 1904, and on examining himself discovered a lump where he felt the pain. On the 19th he came to the surgery. The diagnosis was inguinal bubo and the swelling was fomented. The patient was instructed to rest at home and to continue the fomentations every four hours. There was no history of venereal disease and no source of infection was discovered within the area before specified. On Jan. 7th, 1905, fluctuation could be elicited in the swelling and under nitrous oxide anaesthesia a vertical incision one and a half inches long was made over the most prominent part of it and pus was evacuated. A second incision one inch long was made parallel and to the inner side of the first and drainage was established here as a counter opening. The patient continued at home and fomented the wounds every four hours. Owing to their extremely sluggish appearance and the pain in them and in the leg the man was admitted as an in-patient. At this time (Jan. 30th) the local condition was as follows: There were two parallel vertical incisions in the right groin, the outer one extending upwards over the mid-point of Poupart's ligament and one and a half inches long, the inner one one inch distant from the first and one inch long. The edges of these incisions were thick and not shelving and were dark purple, the purple colour extending into the surrounding skin for half an inch in all directions. Pus was discharged through the incisions and there was some slight thickening apparent beneath them. On the 30th, under general anaesthesia, an elliptical incision was made around the two wounds, giving them a margin of half an inch, and all the skin inclosed by this incision was cut away. The base of the wound left by this proceeding was scraped and the wound was packed with gauze. The ulcer was syringed out with 1 in 4000 biniodine of mercury lotion and dressed once daily. In a week the base of the ulcer was nearly level with the skin and the edges of the skin were shelving and showed a blue line. The ulcer thus became a healing one and healing was complete on March 20th. The patient returned to work on March 4th. The total duration of his illness up to then was 15 weeks. At the present time he is in good health and has had no pain in the scar and no swelling of the right lower extremity.

CASE 4.—The patient, aged 22 years, was admitted on Feb. 28th and discharged to the convalescent home on April 14th, 1905. Six weeks previously to admission he had noticed a swelling in his right groin. The swelling increased gradually in size and on admission there was present in the right groin just below Poupart's ligament an oval mass 3 inches by 4 inches by 1½ inches with its long axis parallel to the ligament. The upper border of the swelling extended just above the line of Poupart's ligament. This mass was connected deeply by a bridge of indurated tissue to a second one situated vertically and measuring 1 inch by 3 inches by 1 inch, and below the inner end of Poupart's ligament. The swellings were diagnosed as superficial to the deep fascia. On March 1st, under general anaesthesia, a vertical incision three inches above and two inches below Poupart's ligament. The swelling was found to be one connected mass of enlarged lymphatic glands and was densely adherent to the common femoral artery and vein, from which it was removed together with the sheath of these vessels. The operation took one hour. The edges of the skin were brought together with silk-worm gut and the cavity was drained and dry dressed. Some of the glands exuded pus as the knife was carried between them and the femoral vessels. The wound after the operation gave considerable pain for 12 hours and the patient's temperature rose from 93° to 102° F. The drainage was therefore excessive exudation of pus. On April 3rd all the skin sutures were removed and the wound was opened up and lightly filled with gauze. There was slight secondary hæmorrhage from the wound on the 5th while the patient was using a bed-pan, but it was easily controlled with plugging. From this time healing was uninterrupted and with tincture of iodine—a process which was not painful. Healing finally took place on May 22nd. The patient returned to work on months. Sections of the glands examined under the microscope showed chronic inflammation. Cultures of pus from the foci in the area of the illness were sterile on the third day. The total duration of the illness was 15 weeks. This patient at the present time is in good health. The scar is sound and painless. There has been no more swelling of the right lower limb.

CASE 5.—The patient, aged 42 years, was admitted on March 4th and discharged to the convalescent home on April 23th, 1905. He had been

wall. The palm and the skin of the back of the left hand were now moist and soft. The thenar and hypothenar eminences of the left hand were rapidly re-forming. There was a slight increase in the interossei of the same hand. The thenar eminence of the right hand was increasing. There was just a slight dryness and scaliness of the outer half of the right palm, otherwise the skin of the right hand was normal. The muscles of the forearms had now attained their normal thickness. The muscular power of the forearms and hands was very good. On the 29th the patient for the first time for five months walked a little distance without any assistance or support and was very proud of it.

On Nov. 2nd the patient walked 20 yards without assistance or support. On the 3rd sensation had returned on the inside of each foot as far as the metatarso-phalangeal joint of the big toe. Beyond a slight puckered condition of the skin there was not a trace of tubercle left. The last traces of maculae were fading away and the beard was growing. The patient's general health, spirits, and appetite were excellent. On the 7th he was photographed and on the 24th he carried a bucket of water to his room.

On Dec. 19th sensation had completely returned in the right foot except in the toes, while it was improving in the left foot. The skin of the feet and toes was much improved. On the 27th sensation in the left foot had completely returned. Both soles were very sensitive. The toes of both feet were still somewhat anæsthetic.

On Jan. 28th, 1899, all the small toes could be freely moved, flexed, and extended (they were completely paralysed at the commencement). The extensor muscles of the big toes were still completely paralysed, so that the big toes dropped. The patient carried a five-gallon paraffin tin full of water and without a handle to his room. On March 3rd sensation had returned in the toes. The skin of the feet and toes was very delicate and thin, but otherwise it was moist, smooth, and normal. The patient had now a complete set of new and normal toe-nails.

On April 1st no trace of disease was left anywhere, except that there was still slight paresis in the extensors of the big toes, the patient being able to raise them about half an inch. The treatment was now stopped and he was kept under observation until the following November, when, by consent of the Free State Government, he was sent to his home. He was seen by five medical friends at various times while under treatment. All Free State lepers were examined and certified by two independent medical men, just as in the case of lunatics, before they were deprived of their liberty.

(To be continued.)

FIVE CASES OF INGUINAL BUBO.

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THE five cases recorded below were admitted into St. Bartholomew's Hospital under the care of Mr. D'Arcy Power, and I am indebted to him for permission to publish them. They are recorded because they are common cases and because the method of treatment in cases of bubo is not as satisfactory as one could wish. It is probable that if it had been possible to admit these patients at once as in-patients to the hospital some of them would have been spared the long illnesses which were their lot. It would have been possible to watch the course of their disease more accurately and to operate if necessary at a time of election rather than be driven to operate by the adverse course of the disease, but it is impossible to admit all such cases as in-patients because of the lack of accommodation.

In the first place it will make the description shorter if the area of infection as a possible cause of inguinal bubo is mapped out. The exact boundaries of any lymphatic area are somewhat indefinite, especially towards the middle line of the body, and the arrangement of the glands and terminal lymphatics is subject to considerable variation, but allowance can be made for this clinically. The superficial inguinal lymphatic glands, as a whole, occupy Scarpa's triangle and include the following three chief sets, named according to their disposition with respect to the saphenous opening.

1. A supero-external or inguinal group situated obliquely, parallel with, and just below Poupart's ligament. There are from four to seven of these glands and when they become enlarged the collective swelling often extends slightly above

the level of Poupart's ligament. Their afferent vessels are derived from the superficial lymphatics of the back and outer part of the thigh and buttock, from the superficial lymphatics of the abdominal wall below the level of the umbilicus, except from those of the lower and inner part of this area, which pass to Group 2, and one or two from the front and outer part of the thigh. The efferent vessels pierce the upper and inner portion of the femoral sheath and pass through the crural canal to the deep femoral or external iliac glands.

2. A supero-internal or pubic group of from two to four glands situated near the pubic spine and to the inner side of the internal saphenous vein. Their afferent vessels are derived from the superficial lymphatics of the lower and middle portions of the anterior abdominal wall, from the upper and inner parts of the thigh, from the skin covering the external genital organs, the perineum, and anus. They also receive lymphatics from the lowest part of the rectum, from the membranous and spongy portions of the urethra, and from the glans penis. The efferent vessels pass to Groups 1 and 2 and through the saphenous opening to the deep femoral and external iliac glands.

3. An inferior or femoral set of from three to six glands grouped vertically around the upper end of the internal saphenous vein. Their afferent vessels come from all the superficial lymphatics of the thigh and leg except from a few on the upper and outer aspect of the thigh which pass to Group 2 and one or two which pass to Group 1, except also from the lymphatics on the outer side of the leg behind the fibular region which follow the course of the external saphenous vein to the popliteal glands and drain an area on the outer border of the foot near the heel. There is an excellent demonstration of these superficial lymphatics in a specimen in the Musée au Filat, in Paris, of a mummified lower limb, which shows that this last-mentioned lymphatic is much smaller than is usually depicted in the textbooks of anatomy. In the specimen referred to there are only two lymphatics of any size in the area on the outer side of the leg which do not pass across the middle line either on the front or the back of the leg to join the lymphatics along the course of the internal saphenous vein. The efferent lymphatics of Group 3 pass *via* the saphenous opening to the deep femoral or external iliac glands.

A fourth group must be mentioned in enumerating the glands in this region. It is named deep femoral and consists of three or four glands situated to the inner side of the common femoral vein and partly in the crural canal. The afferent vessels are derived from the deep lymphatics of the front and outer side of the thigh and knee, from the efferent vessels of the other deep lymphatic glands of the lower limb, from some of the efferent vessels of Groups 1 and 2, and from those of Group 3. The efferent vessels pass through the crural canal to the external iliac glands. In addition some of the deep lymphatics of the lower limb, derived chiefly from the back of the thigh, pass through the glands situated at the great sacro-sciatic foramen to the internal iliac glands and a few reach the same destination *via* the obturator foramen.

When therefore in the description of the cases it is stated that no source of infection was found as a cause of the bubo it is because careful search was made over the whole of the area specified without positive result. The slightest sign of uncleanliness, abrasion, inflamed piles, anal ulcer or fissure, balanitis, posthitis, gonorrhoea, and soft sore was very carefully searched for, and in every case except one (Case 5) was found wanting. In this case the connexion is doubtful in point of time. It may be objected that an abrasion or soft sore, if ever present, had healed some time before the patient came to the hospital. All these patients were in the hospital for periods varying from three to six weeks and during this time it was possible to find out how far they could be trusted to give the histories of their diseases honestly and correctly, and it was also possible to check their statements by questioning their relatives and friends. In every case the presence of a soft sore was denied. Most of these patients were of the better class of hospital patients, and they were all people earning a good livelihood. A soft sore is painful, and a patient who is affected is unable to do his work satisfactorily without advice and treatment. It is also taught that a temporary scar is left when the true skin has been involved. In no case did the patient leave his work until he came with the swelling in the groin and in no case was a sign of soft sore detected, though it was looked for carefully. In no case was there any urethral discharge after the urine had been

when these precautions are taken, the gauze drain is left for 36 hours. At the end of that time the dressing is lightly raised at the upper end and the gauze drain is drawn out. The dressings are quickly replaced and the bandage is firmly re-applied. The skin sutures are removed on the ninth or tenth day and the patient gets up about the fourteenth. When the discharge of serum is copious the wound is dressed more frequently and every effort is made to do this anaerobically. The layer of gauze next the foil is not removed. Should the case have been operated on relatively late in the disease the probability is that the edges of the wound will not heal and that the wound will discharge pus in considerable quantity. The quickest way then is to open it right up and lightly fill it daily with iodoform gauze. In one such case (Case 4) swabbing with tincture of iodine seemed to aid the process of healing and was not painful, but it is difficult to be sure whether the healing was actually more rapid in consequence of the use of iodine.

The advantage of the method outlined above is that in the great number of cases valuable time is saved to the patient. It is probable that his illness will be one of a month or less instead of lasting three months or more. Case 3 is a good instance. In a hospital case also the saving of money would be considerable. These patients are greatly relieved in their minds when the swelling has been removed. They often think it is a rupture of some kind, and have been seen wearing trusses to press on the swelling. Although the whole question is difficult of solution and each case has to be taken on its merits the general impression left by a study of the five cases recorded here is that the best line of treatment to adopt in an average case is that which has just been outlined.

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THE TREATMENT OF PROSTATIC CONGESTION BY ELECTRICAL METHODS.¹

By JOSEPH S. BOLTON, M.D., EDIN., M.R.C.S. ENG.

THE functions of the prostate have not been fully worked out and the causes of its enlargement are but imperfectly understood. That the prostate belongs to the generative rather than to the urinary tract is evident from its embryology and comparative anatomy. Prostatic fluid is probably useful chiefly as an accessory and diluent of the secretion from the testicle. Testicular secretion is alkaline. Prostatic secretion is acid and may therefore be required for neutralisation. Removal of the seminal vesicles and prostate from white rats does not diminish the sexual passion but prevents entirely the fertilisation of the ova. In boyhood the prostate is chiefly muscular. At puberty glandular tissue develops. As old age advances some enlargement is very usual. John Hunter showed by experiment that castration of young animals prevented the development of the prostate and that in adult animals castration caused the prostate to atrophy and waste away. In certain animals, as the mole, the prostate enlarges during the rutting season of the year and shrinks again when this is past. Dogs are very subject to hypertrophy of the prostate and castration has often proved a satisfactory remedy. These facts led Dr. J. William White in 1893 to advocate castration of old men who were suffering from enlarged prostate. This operation, though occasionally successful, never became general. It was disliked by the patients and it was by no means devoid of danger.

Recent investigations with the x rays have shown that this agent has a remarkable effect upon the sexual apparatus, the spermatozoa being destroyed or rendered functionless by its action. It is natural, therefore, to ask the question—Will the x rays by their effect upon the testicles produce any amelioration of the condition of a patient suffering from enlarged prostate? Will the x rays produce an effect similar to castration, without any mutilation of the body or danger to the individual? Before this effect of the x rays upon the testicles had been demonstrated Dr. Moszkowicz of Vienna had been investigating the effects of the direct action of the x rays upon the prostate. He exposed the prostate through a cylindrical rectal speculum, the anus and adjoining parts being protected by a leaden mask. Three applications of 15 minutes' duration on alternate days were given.

The size of the prostate was much diminished and the patients were able to micturate without instrumental aid. Dr. Carabelli treated two patients by the x rays without any rectal tube and with equally good result. But he also protected the surrounding parts with a leaden mask. This protection is unnecessary and also unwise. For the effect of the x rays upon the testicles would certainly tend to increase the beneficial effect.

There are, however, other electrical methods which have been used with advantage in the treatment of enlarged and congested prostate. But before considering these it will be well to remind ourselves of the conditions with which we have to deal, and so far as we may their causes. The conditions are: (1) enlargement of the prostate; (2) congestion of the prostate; and (3) atony of the muscles of the bladder.

It is now generally recognised that enlargement of the prostate takes place in late middle life, but that this enlargement causes no symptoms for some years, not, indeed, until through advanced age the muscular fibre of the bladder loses its tone. Even then but little is noticed to attract attention till some irritant sets up congestion of the prostate, when any accidental overfilling of the bladder may bring about acute retention.

The causes of congestion of the prostate are numerous, coming as they do from the three systems with which it is so intimately connected—the alimentary, the urinary, and the sexual systems. There is a close relationship between piles and congested prostate, and both are frequently attributed to a chill. But the usual cause of congestion is undoubtedly an irritable condition of the urine owing to decomposition through detention behind an enlarged prostate. But sexual irritation must not be forgotten. A man who had no trouble till he reached the age of 75 years attributed his symptoms to the death of his wife which had occurred some months previously and his consequent failure to obtain sexual relief.

A patient presenting himself for treatment for prostatic trouble is usually found to be suffering from piles and congestion of all the parts about the anus. The large submucous veins of the prostatic urethra are engorged with blood and the prostate is like a sponge distended with fluid. The weakened bladder is unable to force the urine through the blocked urethra. The indications for treatment are the relief of local stasis and restoration of the circulation and the improvement in tone of the muscular fibres of the bladder. These indications are met by electrical applications. As electricity will relieve, and in many cases cure, chronic piles, so will it relieve prostatic congestion. Dr. Benham Snow of New York has had considerable experience in treating these cases by static electricity. He affirms that "in electricity we have a certain relief for all cases except those in which a malignant or tubercular process is present, or cases in which there is fluctuation from the presence of pus. The degree of success of the treatment depends upon the amount of hyperplasia or degeneration that has taken place in the structure of the gland. In the early stages of the affection a complete cure is uniform."

I have only two cases of my own to report but they tend to confirm the above conclusions. They were treated with high-frequency currents.

In April, 1906, I was called in by a man, aged 60 years, who was suffering from retention of urine. He had been troubled with enlarged prostate for two years and on several occasions had been obliged to be relieved by the catheter. I drew off his urine, which I found turbid and gritty but free from albumin. He benefited somewhat under urotropine and became able to pass his urine again. But the urine remained unhealthy and there were much scalding and irritation in passing it. The prostate was moderately enlarged and there was much congestion about the anus. He had very little comfort day or night owing to frequent calls to micturate. In May I decided to try the effect of electrical treatment upon him. I passed an electrode into his rectum and by means of the high-frequency current apparatus I electrified him for about ten minutes. This I repeated three times a week. At the early sittings I used a metal electrode but later I used a glass vacuum electrode. Within three weeks a great improvement was manifest, so that on June 15th I note, "he rises only once or twice in the night to pass water, and seldom has any discomfort." Still the urine continued turbid and gritty. On July 6th my note records: "Urine clear and acid." The treatment was interrupted at the end of July for three weeks, but as the symptoms showed some tendency to return it was resumed

¹ The physiology and pathology of this article are taken from an excellent work by Dr. Deaver of Philadelphia on Enlargement of the Prostate.

quite well until Feb. 1st, 1905, when he first noticed a swelling in the right groin. He said that he had been treated for hernia from Feb. 10th to the 24th and during this time some external piles had been removed. There was no history of previous illness, gonorrhoea, or syphilis, and none of sores on the area mentioned before. On admission there was present in the right groin a swelling with its long axis parallel to and one inch below Poupart's ligament and measuring 4 inches by 2 inches by 1½ inches, adherent to the skin which was red and through which fluctuation could be elicited. The upper margin of the swelling extended one and a half inches above the line of Poupart's ligament. There were three palpably enlarged glands in the left groin. The only sign of a possible previous infection was the presence of a small healthy scar situated at the right hand margin of the anus and also the presence of three external piles. The skin between these was healthy and clean. A rectal examination revealed one internal pile and no pain was caused during this examination and none was complained of during or after defecation. The urine was natural. The temperature was 99° F., the pulse was 82, and the respirations were 20. On March 6th, under general anaesthesia, the skin having been prepared, an elliptical incision was made through the skin around the long axis of the swelling and the inguinal lymphatic glands were removed *en masse*. A quantity of pus also escaped. The incision was closed with silk-worm-gut sutures and the cavity was drained in an upward and outward direction and dry dressed. The wound healed by first intention at either end but not at the central part. Healing finally took place on May 14th, 1905. The enlarged glands on the left side subsided without local treatment. The total duration of the illness was 15 weeks. This patient at the present time is in good health. The scar is supple, sound, and painless. There has been no swelling of the right lower limb.

The question that naturally arises from a study of these cases relates to the best method of treatment. It seems that in the case of a patient who is able to get about and go to work the disease does not, as a rule, clear up of its own accord. In such case the disease progresses, pus forms, the pain is great, and by reason of it the patient becomes worn and ill. The abscess is opened and usually healing is slow. These cavities show more periaadenitis than adenitis and the glands exposed come out of the wound whole. The edges of the ulcers are thick, they are not level with the base, which is deep, and the surrounding skin is purple. They thus present a sluggish and not a healing appearance. There is some danger of complications later, such as thrombosis of the internal saphenous vein (Case 1), and secondary hemorrhage (Case 4), and it is possible that the latter might, from the situation of the ulcer, prove exceedingly dangerous to life. In any case when, apart from complications, the disease runs this course the patient is in for a long illness and it greatly facilitates a proper understanding between him and the surgeon if this is explained at the outset. The patient then makes the necessary arrangements and makes up his mind to a long illness and there is no further trouble. On the other hand, when in the early stage the patient is put to bed and any apparent source of infection is treated, the disease may clear up, as in the case of the swelling on the left side in Case 5. It seems reasonable to regard this second swelling as similar in nature to that on the right side. It is said that the exercise of continuous uniform pressure on the swelling aids resolution. It was not tried in the case of these patients because during the early stages they were out-patients. The pressure of a truss is certainly most irritating and pus forms quickly. Absence of movement at the hip-joint seems to be the chief aid to resolution and a rational course to pursue is to put the patient to bed lying on his back with his hip- and knee-joints on the affected side slightly flexed by means of a pillow placed under the knee, to give him a light nutritious diet, to attend to his general health according to the indications, and to measure and record the size of the swelling. The change in size in these swellings is a gradual one, and although the general course can be gauged by palpation it is more certain to outline the mass and measure it and then to repeat the observation some three days later. Moreover, much handling impedes the process of resolution. When once it is clear that the swelling is increasing and not diminishing in size, or when the case does not come under observation until the stage of commencing softening, probably the best thing to do is to dissect out the mass of glands whole, paying attention to the following points, which are emphasised because the operation is a useful one and is not described in books on operative surgery.

The patient is prepared for the anaesthetic and his skin is shaved and prepared as for any operation. The patient lies on his back and is anaesthetised. The thigh on the affected side is extended and an elliptical incision as long as the long axis of the mass to be removed is made over the swelling, care being taken to include in the area of the ellipse rather more than less of the skin over the most prominent part of the swelling. This is advisable for two reasons. In the first place there is often pus beneath where none is previously suspected and the skin is already infected

at its most prominent part. In the second place the removal is going to be free and wide of the glands and there is usually left an ample supply of skin to cover in the wound. When the vertical set of superficial femoral glands is enlarged the incisions are best planned so that their upper and outer ends meet at a point half an inch above the junction of the outer and middle thirds of Poupart's ligament, while their lower and inner ends meet an inch below and an inch to the outer side of the pubic spine. As already mentioned, the outer part of the swelling may extend above the line of the ligament. The long axis of the inclosed ellipse is situated obliquely. These incisions give a very good exposure of all the glands involved and allow drainage in an upward and outward direction, while should pus collect in the lower end the removal of the lowermost stitches allows free drainage. Every case has to be taken on its merits, but the incisions described answer very well for the majority of the cases. The incision having been planned and made, the flaps are dissected back and the glands are removed in one piece so as to have as large a margin of healthy tissue as possible and thus avoid infecting the wound; the possibility of the disease being sarcoma has also to be considered. This dissection is a tedious one and takes one hour to perform. On the inner side the exit of the spermatic cord from the superficial abdominal ring comes into view and the glands often have to be separated from the cord. In the middle line of the limb below Poupart's ligament the common femoral artery and to its inner side the vein are in danger of injury. The glands are usually densely adherent to the femoral sheath, and even when the sheath is removed with them it is impossible to avoid letting out pus, as indeed occurred at this stage in Case 4, although the glands were relatively small. The continuation of the sheath over the crural canal is carefully preserved intact and left *in situ*. The upper end of the internal saphenous vein is ligatured at this stage, clamped, and divided between ligature and clamp. It is usually easier to tie the vein again an inch and a half lower down and to remove the intervening portion with the mass of glands, and this is most conveniently done from above downwards. The lymphatic vessels passing to and from the glands are readily seen in a case taken in hand early. They are clamped serially and tied off and divided between the ligature and the clamp which is left in place, both to prevent infection and to aid the removal of the mass. Catgut is used throughout for the ligatures. A vulsellum forceps should not be used to make traction on the glands, for the liability of infecting the wound from a punctured gland is very great. The glands are generally friable and become torn if much traction is made by means of pressure forceps. Judging from the fact that the saphenous opening and crural canal are the situation through which practically the whole lymph stream passes out from the lower limb the glands here should be disturbed as little as is consistent with the removal of the offending mass. Especially should care be taken not to cut off the lymphatic path at the lower end of the superficial femoral glands and between them and the crural canal if possible is left undisturbed, though the glands here ought to be removed if it is judged at the time that they are diseased. The necessity for this was probably the cause of the oedema of the right lower extremity which followed in Case 4 and lasted for two months and of the intermittent oedema in Case 2. In a case taken in hand early and treated on the lines here given such a necessity would be avoided and the chance of a copious serous exudate from the wound would also at the same time be greatly diminished. The removal of the glands having been accomplished all bleeding points are ligatured, the wound is thoroughly swabbed out with iodoform emulsion—for iodoform has been found of benefit in such cases—a gauze drain is inserted in the upper angle of the wound where the risk of sepsis is least, and the skin is brought together with silk-suture. The line of suture is generally found to worm-gut sutures. The formation of pus in such a case is more copious when air is admitted and it might therefore be better to dress such a wound with sterilised silver foil in the usual way, placing the gauze and wool over this. A firm pad of the wool is advisable because the cavity left by removal of the glands is relatively large, but the pressure on the skin should be quite even. A spica bandage is applied, one turn being taken around the opposite thigh, and the patient is put back to bed.

After-treatment.—When the discharge is slight, as it is

then these precautions are taken, the gauze drain is left for 36 hours. At the end of that time the dressing is lightly raised at the upper end and the gauze drain is drawn out. The dressings are quickly replaced and the drainage is firmly re-applied. The skin sutures are removed on the ninth or tenth day and the patient gets up about the fourteenth. When the discharge of serum is copious the wound is dressed more frequently and every effort is made to dress anaerobically. The layer of gauze next the foil is not removed. Should the case have been operated on relatively late in the disease the probability is that the edges of the wound will not heal and that the wound will discharge pus in considerable quantity. The quickest way then is to open it right up and lightly fill it daily with iodoform gauze. In one such case (Case 4) swabbing with tincture of iodine seemed to aid the process of healing and was not painful, but it is difficult to be sure whether the healing was actually more rapid in consequence of the use of iodine.

The advantage of the method outlined above is that in the great number of cases valuable time is saved to the patient. It is probable that his illness will be one of a month or less instead of lasting three months or more. Case 3 is a good instance. In a hospital case also the saving of money would be considerable. These patients are greatly relieved in their minds when the swelling has been removed. They often think it is a rupture of some kind, and have been seen wearing trusses to press on the swelling. Although the whole question is difficult of solution and each case has to be taken on its merits the general impression left by a study of the five cases recorded here is that the best line of treatment to adopt in an average case is that which has just been outlined.

St. Bartholomew's Hospital, E.C.

THE TREATMENT OF PROSTATIC CONGESTION BY ELECTRICAL METHODS.¹

By JOSEPH S. BOLTON, M.D. EDN., M.R.C.S. ENG.

THE functions of the prostate have not been fully worked out and the causes of its enlargement are but imperfectly understood. That the prostate belongs to the generative rather than to the urinary tract is evident from its embryology and comparative anatomy. Prostatic fluid is probably useful chiefly as an accessory and diluent of the secretion from the testicle. Testicular secretion is alkaline. Prostatic secretion is acid and may therefore be required for neutralisation. Removal of the seminal vesicles and prostate from white rats does not diminish the sexual passion but prevents entirely the fertilisation of the ova. In boyhood the prostate is chiefly muscular. At puberty glandular tissue develops. As old age advances some enlargement is very usual. John Hunter showed by experiment that castration of young animals prevented the development of the prostate and that in adult animals castration caused the prostate to atrophy and waste away. In certain animals, as the mole, the prostate enlarges during the rutting season of the year and shrinks again when this is past. Dogs are very subject to hypertrophy of the prostate and castration has often proved a satisfactory remedy. These facts led Dr. J. William White in 1833 to advocate castration of old men who were suffering from enlarged prostate. This operation, though occasionally successful, never became general. It was disliked by the patients and it was by no means devoid of danger.

Recent investigations with the x rays have shown that this agent has a remarkable effect upon the sexual apparatus, the spermatozoa being destroyed or rendered functionless by its action. It is natural, therefore, to ask the question—Will the x rays by their effect upon the testicles produce any amelioration of the condition of a patient suffering from enlarged prostate? Will the x rays produce an effect similar to castration, without any mutilation of the body or danger to the individual? Before this effect of the x rays upon the testicles had been demonstrated Dr. Moszkowicz of Vienna had been investigating the effects of the direct action of the x rays upon the prostate. He exposed the prostate through a cylindrical rectal speculum, the anus and adjoining parts being protected by a leaden mask. Three applications of 15 minutes' duration on alternate days were given.

The size of the prostate was much diminished and the patients were able to micturate without instrumental aid. Dr. Carabelli treated two patients by the x rays without any rectal tube and with equally good result. But he also protected the surrounding parts with a leaden mask. This protection is unnecessary and also unwise. For the effect of the x rays upon the testicles would certainly tend to increase the beneficial effect.

There are, however, other electrical methods which have been used with advantage in the treatment of enlarged and congested prostate. But before considering these it will be well to remind ourselves of the conditions with which we have to deal, and so far as we may their causes. The conditions are: (1) enlargement of the prostate; (2) congestion of the prostate; and (3) atony of the muscles of the bladder.

It is now generally recognised that enlargement of the prostate takes place in late middle life, but that this enlargement causes no symptoms for some years, not, indeed, until through advanced age the muscular fibre of the bladder loses its tone. Even then but little is noticed to attract attention till some irritant sets up congestion of the prostate, when any accidental overfilling of the bladder may bring about acute retention.

The causes of congestion of the prostate are numerous, coming as they do from the three systems with which it is so intimately connected—the alimentary, the urinary, and the sexual systems. There is a close relationship between piles and congested prostate, and both are frequently attributed to a chill. But the usual cause of congestion is undoubtedly an irritable condition of the urine owing to decomposition through detention behind an enlarged prostate. But sexual irritation must not be forgotten. A man who had no trouble till he reached the age of 75 years attributed his symptoms to the death of his wife which had occurred some months previously and his consequent failure to obtain sexual relief.

A patient presenting himself for treatment for prostatic trouble is usually found to be suffering from piles and congestion of all the parts about the anus. The large submucous veins of the prostatic urethra are engorged with blood and the prostate is like a sponge distended with fluid. The weakened bladder is unable to force the urine through the blocked urethra. The indications for treatment are the relief of local stasis and restoration of the circulation and the improvement in tone of the muscular fibres of the bladder. These indications are met by electrical applications. As electricity will relieve, and in many cases cure, chronic piles, so will it relieve prostatic congestion. Dr. Benham Snow of New York has had considerable experience in treating these cases by static electricity. He affirms that "in electricity we have a certain relief for all cases except those in which a malignant or tubercular process is present, or cases in which there is fluctuation from the presence of pus. The degree of success of the treatment depends upon the amount of hyperplasia or degeneration that has taken place in the structure of the gland. In the early stages of the affection a complete cure is uniform."

I have only two cases of my own to report but they tend to confirm the above conclusions. They were treated with high-frequency currents.

In April, 1906, I was called in by a man, aged 60 years, who was suffering from retention of urine. He had been troubled with enlarged prostate for two years and on several occasions had been obliged to be relieved by the catheter. I drew off his urine, which I found turbid and gritty but free from albumin. He benefited somewhat under urotropine and became able to pass his urine again. But the urine remained unhealthy and there were much scalding and irritation in passing it. The prostate was moderately enlarged and there was much congestion about the anus. He had very little comfort day or night owing to frequent calls to micturate. In May I decided to try the effect of electrical treatment upon him. I passed an electrode into his rectum and by means of the high-frequency current apparatus I electrified him for about ten minutes. This I repeated three times a week. At the early sittings I used a metal electrode but later I used a glass vacuum electrode. Within three weeks a great improvement was manifest, so that on June 15th I note, "he rises only once or twice in the night to pass water, and seldom has any discomfort." Still the urine continued turbid and gritty. On July 6th my note records: "Urine clear and acid." The treatment was interrupted at the end of July for three weeks, but as the symptoms showed some tendency to return it was resumed

¹ The physiology and pathology of this article are taken from an excellent work by Dr. Deaver of Philadelphia on Enlargement of the Prostate.

quite well until Feb. 1st, 1905, when he first noticed a swelling in the right groin. He said that he had been treated for hernia from Feb. 10th to the 24th and during this time some external piles had been removed. There was no history of previous illness, gonorrhoea, or syphilis, and none of sores on the area mentioned before. On admission there was present in the right groin a swelling with its long axis parallel to and one inch below Poupart's ligament and measuring 4 inches by 2 inches by 1½ inches, adherent to the skin which was red and through which fluctuation could be elicited. The upper margin of the swelling extended one and a half inches above the line of Poupart's ligament. There were three palpably enlarged glands in the left groin. The only sign of a possible previous infection was the presence of a small healthy scar situated at the right hand margin of the anus and also the presence of three external piles. The skin between these was healthy and clean. A rectal examination revealed one internal pile and no pain was caused during this examination and none was complained of during or after defecation. The urine was natural. The temperature was 99° F., the pulse was 82, and the respirations were 20. On March 6th, under general anaesthesia, the skin having been prepared, an elliptical incision was made through the skin around the long axis of the swelling and the inguinal lymphatic glands were removed *en masse*. A quantity of pus also escaped. The incision was closed with silk-worm-gut sutures and the cavity was drained in an upward and outward direction and dry dressed. The wound healed by first intention at either end but not at the central part. Healing finally took place on May 14th, 1905. The enlarged glands on the left side subsided without local treatment. The total duration of the illness was 15 weeks. This patient at the present time is in good health. The scar is supple, sound, and painless. There has been no swelling of the right lower limb.

The question that naturally arises from a study of these cases relates to the best method of treatment. It seems that in the case of a patient who is able to get about and go to work the disease does not, as a rule, clear up of its own accord. In such case the disease progresses, pus forms, the pain is great, and by reason of it the patient becomes worn and ill. The abscess is opened and usually healing is slow. These cavities show more perladentitis than adenitis and the glands exposed come out of the wound whole. The edges of the ulcers are thick, they are not level with the base, which is deep, and the surrounding skin is purple. They thus present a sluggish and not a healing appearance. There is some danger of complications later, such as thrombosis of the internal saphenous vein (Case 1), and secondary hæmorrhage (Case 4), and it is possible that the latter might, from the situation of the ulcer, prove exceedingly dangerous to life. In any case when, apart from complications, the disease runs this course the patient is in for a long illness and it greatly facilitates a proper understanding between him and the surgeon if this is explained at the outset. The patient then makes the necessary arrangements and makes up his mind to a long illness and there is no further trouble. On the other hand, when in the early stage the patient is put to bed and any apparent source of infection is treated, the disease may clear up, as in the case of the swelling on the left side in Case 5. It seems reasonable to regard this second swelling as similar in nature to that on the right side. It is said that the exercise of continuous uniform pressure on the swelling aids resolution. It was not tried in the case of these patients because during the early stages they were out-patients. The pressure of a truss is certainly most irritating and pus forms quickly. Absence of movement at the hip-joint seems to be the chief aid to resolution and a rational course to pursue is to put the patient to bed lying on his back with his hip- and knee-joints on the affected side slightly flexed by means of a pillow placed under the knee, to give him a light nutritious diet, to attend to his general health according to the indications, and to measure and record the size of the swelling. The change in size in these swellings is a gradual one, and although the general course can be gauged by palpation it is more certain to outline the mass and measure it and then to repeat the observation some three days later. Moreover, much handling impedes the process of resolution. When once it is clear that the swelling is increasing and not diminishing in size, or when the case does not come under observation until the stage of commencing softening, probably the best thing to do is to dissect out the mass of glands whole, paying attention to the following points, which are emphasised because the operation is a useful one and is not described in books on operative surgery.

The patient is prepared for any operation. The patient lies on his back and is anaesthetised. The thigh on the affected side is extended and an elliptical incision as long as the long axis of the mass to be removed is made over the swelling, care being taken to include in the area of the ellipse rather more than less of the skin over the most prominent part of the swelling. This is advisable for two reasons. In the first place there is often pus beneath where none is previously suspected and the skin is already infected

at its most prominent part. In the second place the removal is going to be free and wide of the glands and there is usually left an ample supply of skin to cover in the wound. When the vertical set of superficial femoral glands is enlarged the incisions are best planned so that their upper and outer ends meet at a point half an inch above the junction of the outer and middle thirds of Poupart's ligament, while their lower and inner ends meet an inch below and an inch to the outer side of the pubic spine. As already mentioned, the outer part of the swelling may extend above the line of the ligament. The long axis of the inclosed ellipse is situated obliquely. These incisions give a very good exposure of all the glands involved and allow drainage in an upward and outward direction, while should pus collect in the lower end the removal of the lowermost stitches allows free drainage. Every case has to taken on its merits, but the incisions described answer very well for the majority of the cases. The incision having been planned and made, the flaps are dissected back and the glands are removed in one piece so as to have as large a margin of healthy tissue as possible and thus avoid infecting the wound; the possibility of the disease being sarcoma has also to be considered. This dissection is a tedious one and takes one hour to perform. On the inner side the exit of the spermatic cord from the superficial abdominal ring comes into view and the glands often have to be separated from the cord. In the middle line of the limb below Poupart's ligament the common femoral artery and to its inner side the vein are in danger of injury. The glands are usually densely adherent to the femoral sheath, and even when the sheath is removed with them it is impossible to avoid letting out pus, as indeed occurred at this stage in Case 4, although the glands were relatively small. The continuation of the sheath over the crural canal is carefully preserved intact and left *in situ*. The upper end of the internal saphenous vein is ligatured at this stage, clamped, and divided between ligature and clamp. It is usually easier to tie the vein again an inch and a half lower down and to remove the intervening portion with the mass of glands, and this is most conveniently done from above downwards. The lymphatic vessels passing to and from the glands are readily seen in a case taken in hand early. They are clamped serially and tied off and divided between the ligature and the clamp which is left in place, both to prevent infection and to aid the removal of the mass. Catgut is used throughout for the ligatures. A vulsellum forceps should not be used to make traction on the glands, for the liability of infecting the wound from a punctured gland is very great. The glands are generally friable and become torn if much traction is made by means of pressure forceps. Judging from the fact that the saphenous opening and crural canal are the situation through which practically the whole lymph stream passes out from the lower limb the glands here should be disturbed as little as is consistent with the removal of the offending mass. Especially should care be taken not to cut off the lymphatic path at the lower end of the superficial femoral glands and between them and the deep set which in part lie in the crural canal. The crural canal if possible is left undisturbed, though the glands here ought to be removed if it is judged at the time that they are diseased. The necessity for this was probably the cause of the oedema of the right lower extremity which followed in Case 4 and lasted for two months and of the intermittent oedema in Case 2. In a case taken in hand early and treated on the lines here given such a necessity would be avoided and the chance of a copious serous exudate from the wound would also at the same time be greatly diminished. The removal of the glands having been accomplished all bleeding points are ligatured, the wound is thoroughly swabbed out with iodoform emulsion—for iodoform has been found of benefit in such cases—a gauze drain is inserted in the upper angle of the wound where the risk of sepsis is least, and the skin is brought together with silk-sepsis is least, and the skin is generally found to worm-gut sutures. The formation of pus in such lie below Poupart's ligament. The formation of pus in such a case is more copious when air is admitted and it might therefore be better to dress such a wound with sterilised silver foil in the usual way, placing the gauze and wool over this. A firm pad of the glands is relatively large, but the left by removal of the glands is advisable because the cavity pressure on the skin should be quite even. A spica bandage is applied, one turn being taken around the opposite thigh, and the patient is put back to bed.

After-treatment.—When the discharge is slight, as it is

A Mirror

OF

HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et ciborum et dissectionum historias, tum aliorum tum proprias legas habere, et inter se comparare.—MORSEANI *De Sed. et Caus. orb.* lib. IV., Proœmium.

ROYAL ALEXANDRA MILITARY HOSPITAL,
LONDON, S.W.

- (1) A CASE OF ARTERIO-VENOUS ANEURYSM OF THE ORBIT; AND (2) A CASE OF GUNSHOT FRACTURE OF THE FEMUR WITH DIVISION OF THE GREAT SCIATIC NERVE.

Under the care of Major C. G. SPENCER, R.A.M.C., Professor of Military Surgery, Royal Army Medical College.)

CASE 1.—A gunner, aged 23 years, received a blow in the right eye from a fist on June 12th, 1906, at Standerton, Transvaal. He was sitting down at the time and the blow was quite unexpected. The man who struck him was wearing a ring on one finger. An ordinary "black eye" resulted and the skin was not broken. Three weeks later he began to be troubled with "buzzing noises" in the head, which got worse, and on examination six weeks after the injury a pulsating swelling, with thrill and murmur, was detected in the orbit. He was treated by compression of the common carotid and calcium chloride was given internally, but the swelling increased in size and he was invalided to England. On arrival at Netley in November there was marked proptosis of the right eye, with some swelling of the lids and lachrymation. A pulsating swelling of about the size of a hazel-nut projected under the upper eyelid; the pulsation was expansile, there were a distinct thrill and a loud musical whirring murmur, and it seemed that the main bulk of the aneurysm was deep in the orbit, the small swelling being apparently only an offshoot of it. Vision was $\frac{1}{2}$ in each eye, and there was slight diplopia on looking upwards and to the right. The fundus was normal and the conjunctiva was healthy. He was transferred to London on Nov. 29th and on Dec. 5th the right common carotid was ligatured. Pulsation entirely disappeared on tightening the ligature but a slight thrill could still be felt over the right eyebrow. On Dec. 11th the stitches were removed, the wound being healed, and now pulsation was beginning to reappear but was confined to the small prominent swelling and no longer gave the impression of being deep in the orbit. On the 20th a small incision was made through the upper eyelid and the small swelling, which proved to be a fusiform dilated vessel, was dissected out between two ligatures. All pulsation and thrill at once disappeared and he has had no further trouble. At the present time (March, 1907) no trace of the symptoms remains beyond a slight fulness in the right orbit.

CASE 2.—A man, aged 35 years, was admitted to hospital on Oct. 27th, 1905. He had been shot through the right thigh in South Africa on Sept. 19th, 1901, receiving a compound comminuted fracture at the junction of the middle and lower thirds of the femur, the great sciatic nerve being divided. The fracture was treated on a Hodgson's splint and united slowly, union not being complete for three months. At the end of that time there was good union, with one and a half inches of shortening. There were paralysis of the leg muscles and anesthesia in the distribution of the injured nerve. He was invalided to England in January, 1902, and was treated by massage and electricity but suffered from ulcers on the right foot at various times between March, 1902, and the end of 1903. In November, 1903, he was admitted to the Royal Herbert Hospital, Woolwich, where the sciatic nerve was sutured. This operation was followed by partial recovery, but only the internal popliteal division of the nerve regained its functions, the external popliteal division remaining paralysed. As he suffered a good deal of pain in the leg and foot and the foot was useless and liable to ulcers he was desirous of having it removed. On admission there was marked muscular wasting in the leg, which with the foot was colder than the sound leg. The calf muscles and flexors of the toes were contracted and he was unable to

move the ankle or foot, the heel being drawn up and the foot flexed and inverted. There was anesthesia of the outer side of the leg and foot. Owing to the condition of the heel, the outer part of which was anæsthetic, it was considered inadvisable to perform Syme's amputation, so on Nov. 16th, 1905, amputation was done through the malleoli by an internal flap. This gave a very satisfactory result; healing took place by first intention and the resulting stump was very good. He was discharged on Feb. 9th, 1906, wearing a Syme's boot and able to walk well and bear his whole weight on the stump.

Remarks by Major SPENCER.—Case 1 is of interest, as it is very unusual for such a condition to be produced by a blow from a fist. It is, perhaps, doubtful whether ligature of the carotid was really necessary; possibly local intervention would have succeeded, and the patient would in that case have been spared the risk of the major operation, but the appearance of the aneurysm was sufficiently formidable to defer one from attempting to deal with it directly in the first instance.

Case 2 is of interest as illustrating the special vulnerability and slight tendency to recovery seen in the external popliteal nerve, a point noted by Makins.¹ I am indebted to Major F. W. Begbie, R.A.M.C., for the history of this case.

ROYAL ALEXANDRA HOSPITAL FOR SICK
CHILDREN, BRIGHTON.

TWO ABDOMINAL CASES.

(Under the care of Mr. GEORGE MORGAN.)

FOR the notes of the cases we are indebted to Dr. John Allan, late resident medical officer.

CASE 1.—The patient was a male infant, 11 months old, who was sent into hospital on June 28th, 1906, as a case of acute intussusception. The history was that on the evening of June 26th he vomited. He was given a dose of castor oil. The bowels acted twice, some mucus and blood being passed. The child screamed out frequently as if in pain. Vomiting took place after almost every feed. Blood was passed per rectum on June 27th and again at 5 P.M. on June 28th. The medical man who had been called in advised his removal to hospital.

On admission the child was found to be a stout, well-developed infant. The face had a drawn, anxious expression, and he cried out frequently, drawing his legs upon the abdomen. In the intervals he lay quiet in a state of semi-collapse. The abdomen was much distended and attempts to examine it were resisted. On palpation the abdominal muscles were found on guard. The abdomen was very resistant, especially in the upper part of the right side. A tumour could not be definitely made out before an anæsthetic was given. Percussion revealed a resonant note with slight impairment over the right abdomen. The temperature was subnormal, but the pulse was fairly good. About 8 P.M. (which was practically 48 hours after the onset) under chloroform the abdomen was opened in the middle line. An ileo-cæcal intussusception was found and this was easily reduced. The infant was rather collapsed when put back to bed and he did not sleep that night. Ten minims of brandy were given every four hours and saline solution was administered per rectum.

On June 29th the child was very restless all day. A draught containing carbonate of bismuth, bromide of potassium, and tincture of opium was ordered to try to get the child to sleep. He was given one drachm of peptonised milk every hour for nourishment. He did not sleep and was very restless. On the 30th the sedative draught was repeated in the evening and he slept two and a quarter hours after 5 A.M. On July 1st one and a half ounces of peptonised milk were given every two hours. A mixture containing small doses of strophanthus and strychnine was given every four hours. The temperature rose after the operation. At 6 A.M. and 6 P.M. on the three days after the operation the temperature was 103° 2', 103° 2', 103°, 103° 8', 104°, and 102° 8' F. Thereafter it gradually fell to normal and on the evening of July 4th it was just below normal. The bowels moved three times on June 29th and some blood was passed in each of the motions. On the 30th they moved twice and there was a trace of blood each time. On July 4th real broth was given for nourishment and on the following

¹ Surgical Experiences in South Africa, p. 361.

and continued for several weeks longer. The result may almost be described as a symptomatic cure, for though his prostate is still large all his urgent symptoms have gone. He enjoys good health, performs his daily work in comfort, sleeps well at night, but still rises once at least to pass urine. Also there is occasionally a little delay in starting the stream of water.

The other case that I have to report is of quite a different type. The patient's present age is only 54 years and he has been troubled with his prostate for ten years. His profession, that of a minister of the Gospel, subjects him to considerable nervous exhaustion. It was on a Sunday night after preaching that he first became aware of something wrong. He spent a restless night, having to rise frequently to pass urine, which was of a cloudy character. This experience was repeated on many occasions, but it caused him little trouble for several years. About three years ago he went out as a missionary to the West Indies. For the first two years of his sojourn there he was remarkably well, but after this he began to suffer from prostatic cystitis and became so ill that he was obliged to return home. Indeed, his medical attendant sent him home for operation. When he came under my care he was thoroughly broken down in health and looked a perfect wreck, many years older than his actual age. He had almost constant trouble with his bladder, and the slightest nervous strain was sufficient to bring on an acute attack. He would first pass a quantity of clear urine, at frequent intervals; then the urine would become turbid, smaller in quantity, and cause scalding, and this would continue till he was completely worn out. I found on examination that his prostate was somewhat enlarged, hard below, softening gradually off higher up, and somewhat too sensitive to the finger in the rectum. He had piles, both internal and external, and a congested condition of the neighbouring parts. I passed a sound but failed to detect any stone. The passage of the instrument through the prostate caused great pain. Before coming under my care he had been taking urotropine and a buchu mixture. I advised him to try the effect of high-frequency currents. To this he agreed, and I commenced to treat him at the end of September of last year. The improvement in this case was most remarkable. He obtained relief after the first few sittings. His bladder symptoms began to yield at once and soon passed completely away. In a few weeks he showed signs of new life and vigour. He lost the haggard look and his whole aspect was completely changed. Early in December he was able to return to the West Indies.

The editor of *Advanced Therapeutics* in commenting upon this treatment says: "The employment of high potential electricity and mechanical vibration in the treatment of prostatitis will revolutionise the management of this unfortunate condition. The most rational treatment of this affection now is the employment of static currents, applied by placing a metal or glass electrode, either posteriorly in contact with the gland or by the employment of one through the urethra."

We in England are, perhaps, less sanguine than the Americans, but we have good reason to believe that this treatment—which is quite painless and not unpleasant in application and causes no shock, so that it can be borne by the aged and the feeble—will bring relief to many an old man whose life has become a miserable existence but who has not the strength or the courage to undergo a serious operation.

Nottingham.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

ROENTGEN RAYS IN THE TREATMENT OF ULCERATIVE BLEPHARITIS.

By T. L. BUNTING, M.D. EDIN., F.R.S. EDIN.

Schiff and Freund some time ago reported some cases of blepharitis treated by Roentgen rays; since then little seems to have been recorded as to the action of the rays in this condition. The following notes on a very old-standing case may therefore be useful.

A man, aged 25 years, had an attack of measles 16 years ago. This was immediately followed by the blepharitis,

which attacked both eyes. The trouble had gradually got worse and he had had frequent attacks of conjunctivitis and keratitis in both eyes. He had been under treatment many times in the course of the disease, and for the last 18 months before coming to me he had been constantly treated at the Newcastle Eye Infirmary. Mr. A. W. Messer, assistant surgeon to the infirmary, who sent the case to me, informs me that all ordinary methods of treatment had been tried without benefit. The patient came to me on July 6th, 1906. The whole of the four lid margins were then involved, and the ulcerative process covered also both the inner and outer surfaces of both lower lids. The lids were all much swollen and they sometimes bled on being touched. There were no eye-lashes and no scabs, but a constant watery discharge. Conjunctivitis and keratitis were present in both eyes and there was some ulceration of the left cornea. There was constant and often severe pain.

During treatment the eyes were kept closed to protect the conjunctiva from the rays, and the healthy skin was covered by a lead shield with a horizontal slit just large enough to expose the diseased surfaces. The tubes used varied in spark gap from 3½ to 5 inches and gave rays of 3–7 Benoist. Exposures of from eight to ten minutes were given about every five days, each eye being treated separately. After two exposures the pain disappeared and never returned. Epithelium began to form on the right lids after seven, and on the left after nine, exposures, and the margins and outer surfaces then healed very rapidly. In subsequent treatment I drew down the lower lids with sticking-plaster so as to expose their inner surfaces, of which the greater part healed as rapidly as the outer surfaces. But I have been unable to obtain healing of a narrow strip in the depth of the recess where the lids meet the eyeball. In spite of all that one can do by evert the lids the rays can only fall on this strip obliquely, and it seems impossible to give a sufficient dose to it without giving so much as to harm the surrounding parts. The patient has now had 24 exposures to each eye, of which the later ones have been devoted to the attempt to heal this narrow strip.

For all practical purposes the patient is now cured. The external appearance is quite normal except for the absence of lashes. There is no pain and the inflammation of the conjunctiva and cornea has disappeared, so that the patient, who has had to spend the greater part of each previous winter indoors with his eyes shaded, has this winter gone about freely.

Newcastle-on-Tyne.

A CASE OF TURPENTINE POISONING

By GUY H. COLTART, M.B. LOND., M.R.O.S. ENG.,
L.R.C.P. LOND.

At this season of "spring cleaning" the following case may be of interest:—

A girl, aged eight years, after having been exposed to the fumes from newly painted woodwork for nearly a fortnight, was seized on March 10th last with headache, vomiting, and swelling of the left tonsil, causing pain and difficulty in swallowing. There was also pyrexia, her evening temperature being 102.5° F. The next day there was pronounced hæmaturia; the urine was bright red in colour and contained albumin. Her temperature was 99°; the bowels had acted and there was no further vomiting; the tongue was furred. On the 12th the urine was nearly black, having the appearance of stout, and contained nearly one-third albumin; both tonsils were enlarged. Her temperature was 102.5°. In the afternoon she was removed to a nursing home, where her temperature was found to be 103.6° on arrival. On the 13th the patient's tongue was cleaner and she had less difficulty in swallowing, but the tonsils were still swollen. The temperature had fallen to 101.5°. The urine was still very dark and loaded with albumin. From the 14th to the 19th there was a steady improvement, the temperature gradually fell to normal, the albuminuria rapidly diminished, and all swelling of the tonsils disappeared. The patient was removed home on the 19th. The urine still contained a trace of albumin, but in every other respect she was quite well. The treatment consisted of rest in bed in a warm room, milk diet, saline aperients every morning, and a mild diaphoretic mixture. There were four other people living in the house, none of whom was affected in any way by the smell of paint.

Fulham-road, S.W.

optom and not as a disease. There were several forms of enteric; the two most defined were amœbic and bacillary enteric. In amœbic dysentery ipecacuanha might be regarded as a specific, whereas in the bacillary form the drug is of no service. On the other hand, the sulphates were of service in bacillary dysentery. Ipecacuanha had fallen into disrepute because it had been used in bacillary enteric. It was necessary to persevere with large doses of ipecacuanha for a long time. He was accustomed to give large doses for one week and smaller doses for a month. He did not use the drug as a routine treatment in cases of enteritis but he had used it with great benefit in cases of enteritis associated with dysentery. He would, however, use large doses in the treatment of cases of enteritis flowing on amœbic dysentery.—Sir LAUDER BRUNTON said that for a long time quinine was used as a specific for ague without the method of its action being known. Now, however, action on the plasmodium was well known. It would seem probable that ipecacuanha acted in a similar manner in amœbic dysentery. He had himself tried the drug in India in dysentery without any beneficial effect. Other remedies had, however, been equally unsuccessful.—Dr. JOHN ANDERSON said that the possibility of being able to diagnose the preputative stage of hepatitis by an examination of the blood was a matter of the greatest importance. He referred to the nausea and vomiting produced by large doses of ipecacuanha and said he had found that it was to a large extent prevented by the simultaneous administration of chloral hydrate.—Mr. J. CANTILE said that he had frequently seen the temperature subside after the puncture of the liver by the needle even when only blood was withdrawn and he did not feel convinced that the fall in temperature was necessarily due to the administration of the ipecacuanha. He thought that most chronic forms of dysentery were amœbic in origin and that a chronic form of bacillary enteric did not occur. He regarded ipecacuanha as a specific for amœbic dysentery.—Major ROGERS said in reply that he did not think that the liver should be punctured until a full trial had been given to ipecacuanha, for in not a few cases fatal results had followed puncture of the liver.

Major ROGERS also read a paper on a Common Sporadic Seven-day Fever of Indian Ports simulating Dengue. He described a short fever, which was the commonest met with in Europeans in Calcutta, although hitherto returned as either malaria or "simple continued fever," which had been differentiated by himself in the course of a study of 1350 consecutive cases of fever by means of the blood changes and clinical notes during the last two years' work in Calcutta. It began suddenly with severe headache, pains in the back and limbs, and pyrexia of a peculiar "saddle-back" type of from six to seven or slightly more days in the great majority of the cases, but sometimes presenting a continued type which was often mistaken for typhoid fever for a time, especially as it was accompanied by a very slow pulse relatively to the temperature. Just about half the cases were admitted during the terminal rise of temperature of about two days' duration, and as it rapidly fell during the inevitable use of quinine, such cases had been always returned as malaria hitherto, although the slow pulse was typically seen at this stage, and was in marked contrast to the rapid one of malaria during high fever. This seven-day fever had a very definite seasonal incidence during the late hot weather and early monsoon months in Calcutta, and declined just when the principal malarial rise of the year took place at the end of the rainy season, the two fevers together constituting one curve through both seasons and hence had been looked on as malarial. The seasonal prevalence differed totally from that of influenza, which the symptoms of the new fever closely resembled in some respects. It had also been regarded as dengue by some previous writers and quite recently had been stated to be only a sporadic form of that disease, although it was wanting in some of the chief characteristics of that disease, while its temperature curve differed widely from the classical descriptions of dengue both in leading text-books and in the accounts of previous great epidemics in India in 1824 and 1872, as was shown by quotations from the old writers on those outbreaks, so that the fever now described was probably a new one hitherto confused with malaria and dengue, for if it was but a sporadic form of dengue the present descriptions of that disease were quite inadequate to cover it, and would require most extensive modification. A bacillus cultivated from the blood of the seven-day fever cases was also described.—Dr. JOHN ANDERSON said that the

description of the fever given by Major Rogers reminded him of a fever known in India as "ardent fever." This occurred in the hottest part of the hot season and especially in those exposed to the sun. All such patients did well. He did not think that quinine was of any service but bromide was of some use.—Sir PATRICK MANSON said that Major Rogers had set himself a difficult task in the diagnosis of the various fevers in tropical countries. There were a large number of undifferentiated fevers, of which the one here described was one. He did not think that the disease described resembled dengue, of which he had seen a good deal, for in that disease the pains were a marked feature and there was a definite eruption which was frequently followed by desquamation. The fever described corresponded to the simple fever described by Crombie. He mentioned a three-day fever followed by intense mental depression, which occurred at Chital and affected Europeans and Goorkhas, but did not affect Hindoos; these fevers had been designated fever of acclimatisation but they were probably specific fever having a limited distribution.—Major ROGERS replied.

MEDICAL SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on April 8th, Dr. PASTER, a Vice-President, being in the chair.

Dr. C. W. CHAPMAN exhibited two cases of Aneurysm of the Aorta. The first was a case of aneurysm of the third part of the thoracic aorta in a man, aged 37 years. He had been shown at the Medical Society two years ago and the details of the case were recorded in Vol. XXVIII. of the Transactions of the society. The specific history depended solely upon that of a small itching venereal sore which had attracted but little notice and consequently escaped adequate treatment. The case was now exhibited to emphasise further the policy of allowing such patients to undertake light work when the disease is in a quiescent state. This patient had left the hospital three years ago and he had practically continued work up to the present time. In the second case, the patient, aged 41 years, was suffering from Aneurysm of the First Part of the Thoracic Aorta. Pulsation was visible in the second right interspace but it was not well marked. Tracheal tugging was present. The superficial veins of the chest and abdomen were distended, especially on the right side. The right radial pulse could not be felt and the pupil on the same side was contracted. The x ray photograph confirmed the result of the physical examination.—Mr. F. DE HAYLAND HALL discussed the case and referred to a similar one under his own care in which the patient had practically recovered. When distended veins were present it generally indicated an intrathoracic neoplasm.—Dr. PASTER also emphasised the last point.

Dr. J. PORTER PARKINSON exhibited a case of Adiposis Dolorosa associated with Myxedema in a woman, aged 60 years. She had noticed some of the fatty lumps in the arms for ten years and some had appeared recently. She had had much aching and shooting pains in both arms. Both the upper arms were abnormally fat, the circumference being 12½ inches on the right side and 13 inches on the left. There was also a good deal of diffuse fat. The patient also presented atrophy of the thyroid and other signs of myxedema and Dr. Parkinson discussed the possible connexion of this disease with adiposis dolorosa.

Dr. A. F. VOELCKER exhibited a case of Multiple Serositis in a boy, aged nine years. There was no family history of tubercle nor of rheumatism but three people in the same tenement had recently died from tuberclosis and the boy was very frequently with them. The present illness began in December, 1905, when the patient was said to have had an attack of "pneumonia" from which he never recovered. On admission to the Hospital for Sick Children in May, 1906, he was short of breath and cyanosed. 40 ounces of clear, sterile fluid containing numerous lymphocytes but no tubercle bacilli were withdrawn from the right pleura. Three weeks later 20 ounces of similar fluid were removed from the left pleura. A week later ascites developed. During August and September, 1906, he was under the care of Dr. F. J. Poynton in University College Hospital with a definite attack of pericarditis. During October he again had definite pericardial friction, signs of fluid in both pleural cavities, and ascites. The case was probably tuberculous in origin,

day ordinary milk and lime water. There was now no difficulty in getting the child to sleep; indeed, he had generally to be wakened to have his nourishment. On the afternoon of the 6th three stitches were removed, as the wound looked perfectly healed. In the evening the child was found with the abdominal wound right open and several feet of intestine outside the abdominal cavity. The intestine was at once covered with cloths wrung out of sterilised water and under chloroform the intestine, after being drenched with saline solution, was returned to the abdominal cavity and the abdominal wall was stitched in layers. The child had a fairly good night's rest. On the following day the temperature rose to 101.2° and for the next three days it kept slightly above normal. On the 8th he had diarrhoea and was sick frequently. The abdomen was very distended and tender. Albumin water was given for 24 hours. On the 9th whey was given, on the 10th Benger's food made with water, and on the 11th peptonised milk. The diarrhoea and sickness lasted for about 48 hours. The abdominal distension and tenderness likewise soon subsided. On the 16th the infant was having bread and milk and on the 20th he was having full diet for a child of his age. The brandy and stimulants which had been gradually diminished were now stopped and he was given cod-liver oil emulsion. After the catastrophe which followed the removal of the stitches on the first occasion no hurry was displayed in removing sutures this time. It was a fortnight after the operation before the first stitch was removed, and it was over three weeks before all were removed. The child was discharged on August 15th.

CASE 2.—The patient was a school boy, aged ten years, who was admitted to hospital on Dec. 7th, 1906. From the history it appeared that about 9.30 A.M. he was seized when running with severe pain in the right groin and a swelling appeared there. He felt sick but did not vomit. This sickening pain continued and he was taken to the hospital about 2.30 P.M. He walked there, but suffered excruciating agony. He had to be assisted when walking and he limped badly.

On examination the patient was found to be a slenderly built lad of fair muscularity. His face was drawn and anxious-looking, and he moved his right leg very slowly and deliberately. When placed in the dorsal decubitus he lay with his right thigh slightly flexed on the abdomen. A tense globular swelling was found in the right groin. This swelling was exquisitely tender to the touch and there was no impulse on coughing. It could not be reduced. The temperature was subnormal and the pulse-rate was only slightly accelerated. A diagnosis of strangulated inguinal hernia was made and he was admitted to hospital. About 4.30 P.M. an operation was performed and a tightly strangulated right inguinal hernia was found. Though the strangulation occurred only some seven hours previously the bowel was quite dusky and was losing its glistening appearance. The gut was freed and returned to the abdomen and the wound was then closed.

The patient had a fairly comfortable night. On the next morning the temperature was 98° F., and for the five days following the operation it remained subnormal. The pulse-rate was 86 per minute and the respirations were 32 a minute. On Dec. 8th he vomited three times and during the next three or four days he was sick once or twice each day in spite of the most careful feeding. On the day after the operation the bowels moved well after two enemata had been given. Until the 12th his progress was fairly satisfactory, except that he was occasionally sick and he had occasional slight pains in the abdomen, but on that date symptoms of acute mischief developed. He complained of very severe pain in the abdomen and vomited frequently. The abdomen was distended and tympanitic and he had some tenesmus. The bowels remained confined and there had been no action since the 8th. The temperature was 97.8° , the pulse was 80 per minute, and the respirations were 30 a minute. About 7 P.M. the symptoms became even more severe, and he vomited about every half hour. About 11 P.M. an opening was made in the middle line and on carefully examining the abdominal contents a mass like a thickened appendix could be felt in the right iliac region. As this mass was apparently better to attack it through an incision was closed. On examining the mass through an opening in the right iliac fossa it was found to be a commencing intussusception, and a small portion of the gut

which had been previously damaged had become adherent to the abdominal parietes. The invaginated portion of bowel was released, the adhesions were broken down, and the wound was closed. All the acute symptoms were relieved and the patient's progress thereafter was satisfactory. He had no more sickness. On Dec. 14th his bowels moved slightly after an enema had been administered and on the following day they moved well after an enema had been given. Nothing of note occurred during convalescence. He was allowed up about the middle of January of this year and was discharged early in February.

Remarks by Dr. ALLAN.—Both cases are interesting because they had to undergo abdominal section twice in a week. Case 1 helps to prove that success attends prompt laparotomy in intussusception. In Case 2 it is of interest to note that the bowel was distinctly damaged, although the strangulation had occurred only a few hours before. It demonstrates the fact that in cases where the strangulation is tight prompt operative interference is necessary, otherwise there is great risk of gangrene of the strangulated piece of intestine supervening. In this case a damaged portion of bowel became adherent to the abdominal wall and proved an important factor in the causation of the intussusception. I have to thank Mr. Morgan for kind permission to use these notes.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

The Early Diagnosis and Cure of the Pre-suppurative Stage of Amoebic Hepatitis.—A Common Sporadic Seven-day Fever of Indian Ports simulating Dengue.

A MEETING of this society was held on April 9th, Mr. J. WARRINGTON HAWARD, the President, being in the chair. Major LEONARD ROGERS, I.M.S., read a paper on the Early Diagnosis and Cure of the Pre-suppurative Stage of Amoebic Hepatitis. He described 16 cases of fever, nearly all accompanied by acute hepatitis and a leucocytosis of a peculiar type, which he regarded as the early stages of hepatitis set up by an active or a latent amoebic dysentery, which commonly passed on to the stage of suppuration and then constituted amoebic abscess of the liver, which was so common in certain tropical countries. In nearly all these cases large doses of ipecacuanha were administered, in spite of the absence of all symptoms of dysentery nearly all of them, with a view to curing the latent disease in the large bowel, which, according to his view, was the cause of the hepatitis present. The result had been a rapid cure of the hepatitis and of the dysentery, and in all present, the early cessation of the fever, and in all probability the prevention of the cases drifting on into the very fatal suppurative stage of the disease. In a few of the cases there were no actual symptoms even of hepatitis, the cause of the fever being entirely obscure, until an examination of the blood revealed the leucocytosis, and led to the adoption of the ipecacuanha treatment, with the result that the fever rapidly ceased as in the other cases. In one third of the cases the hepatitis was so marked that exploratory operation was carried out for liver abscess with negative results, yet after this they cleared up rapidly under the ipecacuanha treatment, which Major Rogers urged should always be resorted to before operative measures were undertaken in every case in which any doubt remained as to whether liver abscess had already formed or not. It was anticipated that the early diagnosis by the blood changes and the prompt adoption of the line of treatment advocated would lead to a considerable reduction in the number of cases of fever, which now frequently drift on into liver abscess, while being treated as malaria or some other disease, and in this way the present loss of life among Europeans, who came early under treatment, from amoebic abscess of the liver might be materially reduced when the methods advocated were generally adopted in the tropics. Sir PATRICK MANSON said that the method of treatment advocated by Major Rogers was of the greatest importance. There were two schools with regard to the treatment of the dysentery, those who believed in the administration of the sulphates and those who advocated large doses of ipecacuanha. Dysentery should, however, be regarded as a

as inflamed in his case, or that the auto-toxæmia from which the patient undoubtedly suffered was of cervical origin. He thought the phlegmasia and other symptoms in Mr. Malcolm's cases were secondary to infection of the pelvic cellular tissue. The disadvantages of the removal of the cervix should be carefully considered. The mortality of pan-hysterectomy was distinctly greater. Taking over 1000 cases collected by Pezzi, of each of these two forms of hysterectomy he found the percentage mortality of pan-hysterectomy was 10.4, whilst the mortality of the subtotal operation was only 7.4. The subtotal operation could be performed more quickly and there was less hæmorrhage and the hæmorrhage was more easily controlled; sepsis was much more likely to occur if the vaginal canal were opened up. The length of the vagina was maintained if the cervix was retained and colpocela could be avoided by drawing the stumps formed by the ligation of the uterine and ovarian vessels together on each side. This procedure was useless in pan-hysterectomy. There remained, too, the question of internal secretion and it was quite certain that such a glandular structure as the cervix must serve one. If organs were to be removed for possible dangers in the future, where was the line to be drawn? He did not think that Mr. Malcolm had made out his case.

Dr. T. W. EDEN said that he had performed a large number of hysterectomies for fibromyoma by the supravaginal method and a small number by the total method, and he was equally satisfied with both. He was not at all convinced by Mr. Malcolm's arguments that the total operation possessed any real advantages over the other. Mr. Malcolm's objections to the supravaginal operation were two in number: (1) the blood-supply of the cervical stump was impaired by the operation and it was therefore more liable to become infected; and (2) the mucous membrane of the cervix was a greater source of danger than that of the vagina. With regard to the first objection it must be recollected that the blood-supply of the cervix consisted of the circular artery from the uterine and anastomosing branches from the vaginal arteries. In the supravaginal operation the uterine arteries were divided above the origin of the circular branches, while the vaginal arteries were uninjured; the blood-supply of the cervix was therefore not affected in any way by this operation. With regard to the second objection he thought that bacteriology showed the vaginal flora to be much oftener pathogenic than those of the cervix. The clinical evidence brought forward by Mr. Malcolm in support of his contention upon this point was singularly unconvincing. The occurrence of localised cellulitis around the stump after the supravaginal operation might be due to faulty technique; he had seen such cases himself and he explained them in that way. On the whole, he was not convinced that there was any practical advantage in the total operation. It was argued that better drainage was obtained by the removal of the cervix, but in ordinary circumstances drainage ought not to be required; it was much better to arrest hæmorrhage completely before sewing over the peritoneal edges. It certainly appeared to him that prolapse of the bladder was more likely to occur after the total operation, especially if vaginal drainage were employed for a few days afterwards. Since it could be more rapidly performed he should continue to prefer the subtotal operation except in special circumstances.

The PRESIDENT said that he had performed total abdominal hysterectomy for fibroids to the entire exclusion of the partial operation for the past six years and agreed with the main conclusions of Mr. Malcolm that total abdominal hysterectomy was superior to supravaginal amputation, but he did not think that Mr. Malcolm had produced much evidence of its superiority. He (the President) had given the points of superiority of the total operation at the Manchester meeting of the British Medical Association, in Albutt, Playfair, and Eden's "System of Gynecology," and in that society. He had not seen any evidence brought forward which led him to modify his opinion as to the superiority of the total operation when performed by Doyen's method. It was superior in that it had a lower mortality (as is shown in Sanger and Herff's extensive statistics¹), it provided for drainage, it gave security against injury to the bladder and ureters and against unrecognised hæmorrhage, and it removed the cervix which might become infected, slough, contain unrecognised malignant disease or develop malignant disease subsequently. It was also less likely to be followed by intestinal obstruction if the peritoneum were closed by a purse-string suture.

He had never seen prolapse or trouble with the bladder caused by the operation. Bumm had noticed these troubles after Wertheim's operation and attributed them to the use of gauze drainage. The President had not employed gauze drainage after abdominal hysterectomy for fibroids for several years past and knew that it was unnecessary and believed it to be injurious. The supposed advantage of the internal secretion of the cervix and the slight shortening of the vagina by the removal of the cervix could not be seriously set off against the above-mentioned advantages. Their importance was disproved by the excellent results of vaginal hysterectomy.

Mr. MALCOLM, in reply, said he was quite aware that his arguments would not be conclusive to those who thought the supracervical the better operation. He had brought forward all the clinical evidence he possessed against the view he advocated as well as that in its favour. Nevertheless, he had come to a very decided opinion, founded on the facts stated, that the complete operation was the better one. Of course, it was open to anyone to say that the complications which arose were due to faulty technique, but every care was taken and the first two cases offered no difficulties of manipulation, so that he himself was confident that so far as he was concerned these cases should have given no trouble. Mr. Doran had pleaded for long after-histories. Mr. Malcolm had not tackled this extremely laborious investigation in a series of cases and it might be that he heard most of his successful operations but he had plenty of long histories in which the results were all he could hope for. He had not met with trouble from weakness of the pelvic floor or from cellulitis around the bladder. He did not pack the vagina.

The following specimens were shown:—

Dr. H. RUSSELL ANDREWS: Sarcoma of the Cervix.

Dr. J. H. DAUBER: Fibromyoma containing a Calcified Fibroid lying free in the Uterine Cavity.

Dr. C. LOCKYER: Primary Tuberculous Salpingitis.

Dr. ROBERT WISE: Placenta from a case of Twins.

MANCHESTER MEDICAL SOCIETY.

Acute Appendicitis.

A MEETING of this society was held on March 27th, Dr. S. MORITZ, the President, being in the chair.

Dr. J. DRESCHFELD opened a discussion on the Diagnosis and Treatment of Acute Appendicitis and, considering that the affection as regards treatment is becoming more and more a surgical one, confined his remarks chiefly to the etiology, symptomatology, and diagnosis of the affection. That inflammation of the appendix was of such common occurrence was, he said, explained by its structure and function. On account of its richness in lymphatics and glandular follicles, the slow peristaltic movements, and the stagnation of secretion owing to the small opening into the cæcum, it formed a favourable soil for the development and growth of micro-organisms, and the presence of faecal matter and concretions might easily lead to ulceration, necrosis, and perforation. Obliteration of the opening or lumen easily occurred and led to dropsy or empyema of the appendix, and its variability in length and position, together with the meagre blood-supply by a small terminal artery, explained the occurrence of twists, kinks of the appendix, and of slough and necrosis. Hence the frequent occurrence of appendicitis in infectious diseases (influenza, typhoid fever, dysentery, &c.) and after even slight traumatism. Appendicitis occurred more frequently in the young and middle-aged, as in the old the appendix, according to Ribbert and others, underwent involution, though in many old people the atrophic condition of the appendix was due to an affection of the appendix which might have occurred earlier in life and remained latent; its diminished frequency in women was, according to some, due to the fact that in the female the appendix was supplied by a second artery running in the ovario-appendicular ligament (Da Cott). Clinically a distinction was made between the acute, chronic, recurring, and latent form. The classification of acute appendicitis into catarrhal, suppurative, ulcerative, perforative, and fulminating forms was not a satisfactory one, as one form might develop from another, and even in the catarrhal form Sahli and others believed that there was a primary focus of pus, and appendices removed by operation early in the catarrhal form had shown the presence of hæmorrhages and small collections of pus. The symptoms by no means corresponded to the pathological changes found, yet appendicitis might be divided into mild and more severe

¹ *Encyclopedia of Gynecology and Gynaecology*, 1900, part 2, p. 51.

though there were no certain evidences. Sodium chloride was at one time excluded from the diet, at another time administered in excess, but without effect in either instance.—Dr. POYNTON remarked that he had observed five cases of multiple serositis, four of which were fatal. Three of the five were of tuberculous origin and these had developed the symptoms, and after death revealed the evidences, of tuberculous meningitis. The remaining two cases were of rheumatic origin and from these the rheumatic diplococcus had been obtained.—Dr. DE HAVILLAND HALL referred to a case of undoubtedly tuberculous origin in which the ascites had improved under daily inunctions of guaiacol ointment (ten minims to the drachm).

Dr. POYNTON exhibited a case of Multiple Exostoses in a boy, aged six and a half years, who had presented certain nodular swellings on the bones of the extremities and trunk, dating almost from birth. There was no definite history of rickets, but the case had at one time been diagnosed as such. An exostosis springing from the head of the left radius had interfered with the movements of supination and pronation.—Mr. H. B. ROBINSON referred to the possible surgical treatment of the left elbow-joint.—Dr. VOELCKER discussed the origin of such lesions and suggested irregular ossification associated with rickets as the cause in this case.

Dr. L. A. CLUTTERBUCK exhibited a case of Infantile. The child, a female, was 14 years of age, but exhibited the anthropometric measurements and weight of six years old. Radiographs were exhibited showing that the retarded development extended to the centres of ossification. The bridge of the nose was depressed but there was no history of syphilis, the child being the eldest of eight healthy children. There were no symptoms of cretinism, microcephaly, achondroplasia, congenital heart disease, or rickets.—The case was discussed by Dr. POYNTON, Mr. ROBINSON, and Dr. PASTEUR.

Dr. F. PARKES WEBER exhibited a case of Chronic Myelocytosis (Spleno-medullary) Leukæmia treated by the Roentgen Rays. The patient was a woman, aged 46 years. There were extreme enlargement of the spleen and only very little enlargement of the lymphatic glands. There was considerable cutaneous pigmentation of the face, trunk, and extremities. The patient began to suffer from pains on the left side of the abdomen about the commencement of 1906. On admission to the German Hospital on Jan. 30th, 1907, the hæmoglobin was found to be only 40 per cent. of the normal and there was leucocytosis. She had been given arsenic and for about one week she was treated by exposure of the spleen, sternum, and both thighs to the Roentgen rays for ten minutes at a time. The white cells diminished in number, but on discontinuing the treatment the white cells began again to increase in number. Dr. Weber also exhibited a case of Great Enlargement of the Liver and Spleen of uncertain origin in a man, aged 42 years, who had been in the tropics, which was discussed by Dr. DE HAVILLAND HALL, Dr. CHAPMAN, and Mr. CAMPBELL WILLIAMS.

Mr. ROBINSON exhibited a case of Multiple Sarcomatous Tumour of the Left Femur in a girl, aged 14 years. Three weeks before Christmas, 1906, she noticed a painless swelling of her left thigh. Since that time it had ached occasionally but not especially at night. The tumour of the thigh involved the lower half of the femur. There was fluid in the knee-joint but no thickening of the synovial membrane. On the inner side of the head of the tibia were some swelling and tenderness and a skiagram showed a deposit in this situation. There were a greatly enlarged hard gland just below Poupart's ligament, some small glands along the iliac vessels, and a hard flattened gland of about the size of a two-shilling piece in the right axilla.—Mr. C. S. WALLACE believed that there were certain evidences in favour of osteomyelitis rather than sarcoma, but, on the whole, he was inclined to support Mr. Robinson's diagnosis.

OBSTETRICAL SOCIETY OF LONDON.

Advisability of Removing the Cervix in Performing Hysterectomy.—Exhibition of Specimens.

A MEETING of this society was held on April 3rd, Dr. HERBERT R. SPENCER, the President, being in the chair.

Mr. J. D. MALCOLM read a paper on the Advisability of Removing the Cervix in Performing Hysterectomy. It was pointed out that after a partial hysterectomy the cervix uteri, with its blood-supply to some extent cut off, and with its narrow central tube lined by mucous membrane which might

be chronically inflamed, offered a favourable nidus for the development of pathogenic micro-organisms in the divided uterine tissue, whilst the provision for drainage of discharges was imperfect. Two cases were recorded in which local signs of insidious septic change in the cervix uteri were accompanied by evidences of irritation elsewhere, one patient suffering very severely from phlegmasia dolens and the other from a painful oedematous swelling in the side and in the joints. Both recovered. Notes of a third case were given, in which, after a partial operation by another surgeon, the cervix was found actively inflamed with a fairly copious muco-purulent discharge from the os and giving rise to much irritation of the lower bowel. A note of all Mr. Malcolm's fatal cases of hysterectomy was given. Excluding malignant cases (two deaths), those treated by the old-fashioned serrencut (eight cases, of which six had already been published in detail), and one of enucleation of a fibroid, there remained six deaths. In two of these large fibroids so involved the cervix that the greater part of it was necessarily removed; in one the normal uterus was partially removed, and in one it was completely removed because in each case it was so incorporated with an ovarian tumour deeply buried in the broad ligament that its removal was easier than leaving it. These four cases died within 48 hours of the operations from the severity of the necessary procedures. In two other cases of panhysterectomy death was due to lung complications. It was held that these cases, although in five of the six the whole uterus was removed, offered no guidance to treatment on the main question raised in the paper. The effects of the various methods on the symptoms of the artificially induced menopause were also regarded as not giving very satisfactory indications for treatment, excellent results having been obtained by all methods. The removal of the cervix was therefore urged on the theoretical consideration that leaving it gave an increased opportunity for the development of septic mischief, and because of the belief that in practice the convalescence was smoother by this method. It was urged that in performing hysterectomy the cervix should be removed, that before operating the patient's health should be made as good as possible, and that no woman should be advised to retain a uterine tumour of any considerable size or which had become definitely prejudicial to her health. These were the points to be attended to with a view to improving the results of this, which was already one of their most successful operations.

Mr. ALBAN H. G. DORAN admitted that Mr. Malcolm had most ably pleaded for panhysterectomy, yet for several reasons, in part admitted by himself, his arguments could hardly persuade them that the so-called "subtotal" operation ought to be abandoned. In the first place the cervix was an important part of the pelvic floor which should not be treated as a negligible quantity by the operator. They knew how safely it could be spared when the body of the uterus had been damaged during the removal of an adherent ovarian tumour had to be sacrificed. In the second place, there was reason to believe that in order to insure the full benefits which should follow the saving of more or less of the ovaries in hysterectomy it was advisable to leave a portion of the endometrium as well; in other words, not only the cervix but a little more of the uterus should be spared. Mr. Doran had brought forward evidence, based upon long after-histories, of 60 subtotal hysterectomies showing the value of this practice. Mr. Doran laid great stress on long after-histories, for a woman convalescent from hysterectomy for fibroid was never so sure of permanent benefit as was a patient convalescent from ovariectomy for a non-malignant tumour. The method of Crawford Thomas should be applied to all series of subtotal and panhysterectomies, and it would be instructive to hear some day of Mr. Malcolm's results after passing a test of that kind.

Dr. AMAND ROUTH did not consider that Mr. Malcolm had proved his contention. Hitherto, panhysterectomy in fibromyomatous uteri had been urged from the point of view that the cervix was apt to become malignant if not removed. It had not, however, been proved that fibroids predisposed to uterine cancer, and still less had it been shown that the cervix was especially prone to malignant changes if fibroids were present in the uterine body. Mr. Malcolm had advocated the removal of the cervix "on the theoretical consideration that leaving it gives an increased opportunity for the development of septic mischief." Dr. Routh thought that this was theory alone, and that Mr. Malcolm had advanced no sufficient proof that the cervix

on a boy, 14 years of age, who, his mother said, had always been an idiot. About Christmas, 1906, he was struck behind the ear, where a lump subsequently arose, and at an operation performed on Jan. 12th this was found to be a suppurating hematoma; the mastoid cells were also trephined, but no particular sign of disease was found. On further exploration a suppurating track was found leading down through the occipital bone from which pus was slowly oozing. On the 5th the skull was trephined and the brain was explored for abscess, but none could be discovered. Five days afterwards the boy died. At the necropsy a large cerebellar abscess, which had opened of itself on the under surface, was found on the right side.

Mr. K. E. L. G. GUNN exhibited specimens of Sarcoma of the Femur and of Tuberculous Disease of the Knee-joint. Both of these cases presented symptoms of chronic inflammation of the knee-joint, which was believed to be tuberculous. In one instance the diagnosis was correct; in the other it was very much mistaken.

Mr. SETON S. PRINGLE read a paper on a Sacro-coccygeal Teratoid Tumour with Formation of Metastases in the Groin. The growth had been removed from a man, aged 57 years, who had first noticed it 35 years previously as a small lump on the middle line behind the anus. Since that time the tumour had grown slowly. At the time of the operation it measured 15 inches over all, from the lower to the upper extremity, and 11 inches from side to side. Two metastatic growths, each of the size of a large hen's egg, were present in the right inguinal region; one of these had appeared 33 years and the other 20 years prior to the time of examination.

Mr. ROBERT J. HARVEY described a case of Cerebro-spinal Meningitis occurring in a girl, aged ten years. While swallowing a piece of liver she choked, and, not getting much relief, she was taken to a hospital where she developed great tenderness down the spine. She passed into a comatose condition; her eyes were open but there was no corneal reflex. She died the same night. On the next morning Mr. Harvey drew off some cerebro-spinal fluid by lumbar puncture. The slides which he had prepared showed a diplococcus in great numbers, even in the original fluid. They were distinctly non-Gram staining. One of the slides showed a capsule round the cocci, but some observers believed that such capsules did not exist.—Professor ARTHUR H. WHITE said that with regard to the cocci which exhibited capsules he had found the same in some of the organisms which he had got from certain cases this year. Weichselbaum and his school denied absolutely the existence of a round capsule in his cocci, but Jäger, who had considerable experience, stated that capsules were frequently seen. Between the supporters of the two there was considerable difference of opinion, both on that point and also as to whether the organisms were always Gram negative. The former school said that those organisms which were Gram positive were not the specific organisms. He mentioned the fact that sub-cultures of an apparently pure non-Gram staining organism became Gram-staining as showing that the question of staining was not yet settled.—Dr. CHRISTOPHER GUNN said that he had seen the child in the hospital. He was inclined to think that she had been ill for a longer period than the parents made out and that the choking was probably some defect of swallowing. About one and a half hours before death there were five or six fairly typical spots on her limbs. After death the body was almost covered with them.

HUNTERIAN SOCIETY.—A meeting of this society was held at Poplar Hospital on March 27th, Mr. John Poland, the President, being in the chair.—Mr. T. H. Openshaw showed the following cases: 1. A boy, aged 18 years, who had old Tuberculous Disease of the Knee-joint resulting in nine inches' shortening of the leg. 2. A little girl with Double Congenital Dislocation of the Hip successfully treated by Lorenz's method. The reposition was functionally perfect on both sides and anatomically perfect on one side. Mr. Openshaw said that by this method, out of 20 cases, six perfect results, nine functionally but not anatomically perfect results, and five cases in which relapse occurred might be expected. 3. A case of Rheumatic Ankylosis. The knees, ankles, and hips were ankylosed and for five years the patient did not walk at all. Now, with HESSING's apparatus with elastic traction, he could walk fairly well. 4. A Characteristic Groove on the Tibia. Mr. Openshaw considered that such cases were due to intra-uterine fracture.

5. An infant with Congenital Shortening of one Femur and Absence of Fibula. 6. A girl with Scoliosis and Rigidity of the Cervical Spine, possibly of rheumatic origin. 7. A child with Congenital Absence of the Left Tibia and Partial Absence of the Right Tibia, probably the result of intra-uterine fracture. 8. Ankylosis of Both Hips and Knees due to Gonorrhoeal Arthritis. The patient was able to walk with splints fitted with elastic traction.—Mr. Hugh M. Rigby showed the following cases: 1. A boy with Both Forearms fixed in a position of Pronation. The head of the radius on each side was displaced and there was ankylosis of both radio-ulnar joints. 2. A woman, aged 37 years, who had suffered from ascites in childhood. A few months ago her abdomen was opened in another hospital and fluid was removed. She was admitted into Poplar Hospital under the care of Dr. Theodora Thompson with ascites and intestinal obstruction. Mr. Rigby opened the abdomen and found great distension of the small intestine. There was gradual narrowing of the lower end of the ileum and the caecum and ascending colon were like those of a child, evidently a congenital condition. The patient made a good recovery after an ileo-sigmoid lateral anastomosis. 3. A boy from whose Ureter a Stone had been removed by a para-sacral incision. Mr. Rigby considered that this incision was indicated when a stone was impacted within two inches of the bladder, the operation by this method being easier and affording better drainage than the usual method.—Dr. H. Theodore Thompson showed the following cases: 1. A woman with a To-and-fro Aortic Murmur, Syncopal Attacks, and Tabes Dorsalis. He considered that she had syphilitic aortitis. 2. A man with an Abscess of the Lung treated by administration of creosote internally up to half-drachm doses and inhalation of creosote and iodine. He had gained 18½ pounds in weight in three months and was practically well. 3. A typical case of Disseminated Sclerosis.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on March 27th, Dr. E. H. Lawrence Oliphant, the President, being in the chair.—Dr. Kelly showed a Ruptured Tubal Pregnancy, for which an operation was performed 24 hours after the onset of the symptoms.—Dr. J. M. Munro Kerr showed a Large Multilocular Ovarian Cyst removed from a patient, aged 24 years.—Dr. A. N. McLellan showed a Large Thin-walled Hydrosalpinx.—Dr. John Lindsay described two specimens of Malformation of the Fœtus.—Dr. J. Nigel Stark read notes on a case of a Fibroid of the Cervix Uteri, weighing 17 pounds and measuring 34 inches in circumference and 27 inches from side to side. It was removed by abdominal section and the operation was rendered somewhat difficult owing to the size of the tumour and to adhesions with the omentum and bowel. The body of the uterus could be seen perched upon it in front, freely moveable and not implicated in its mass. The tumour was subperitoneal in origin and grew from the posterior median part of the cervix; there was no pedicle to be found. The patient was 40 years of age and had had four children. She made a good recovery.—Dr. Munro Kerr said that in most cases of cervical fibroids the tumour could be shelled out of its bed and the uterus left intact. He had removed a tumour weighing 14 pounds and had fixed the uterus to the anterior abdominal wall, the patient subsequently menstruating.—Dr. Russell read notes on several cases of Pruritus Vulvæ which he classified under two headings—namely, those cases due to local conditions and those due to general conditions. The treatment was often unsatisfactory, local applications of heat and ointments being used. When the patient's health was suffering the parts ought to be excised. The danger of subsequent malignant disease occurring had to be kept in view in the treatment of these cases of pruritus.—Dr. Russell and Dr. J. Edgar communicated notes on several cases of Eranosis Vulvæ.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on April 5th, Dr. J. B. T. Conner, the President, being in the chair.—Mr. Elmore W. Brawerton demonstrated the following eye cases:—1. So called "Embolus" of Arteria Centralis Retinæ in a woman, aged 54 years, who one year ago developed sudden total loss of sight in the right eye while recovering from right hemiplegia. There was now well-marked optic atrophy, the disc was blanched, and the arteries appeared as white threads. The so-called "embolism" was probably an endarteritis with subsequent thrombosis and was seldom found in association with endocarditis,

forms without symptoms of suppuration, appendicitis with suppuration, appendicitis with perforation and followed by general peritonitis, and the fulminating or septic appendicitis. Dr. Dreschfeld discussed the various symptoms corresponding to the several forms of acute appendicitis, each one of which might be absent, though in most cases the pulse, the fever (remittent with or without rigors), the muscular rigidity with the presence of an intumescence either in the right iliac region or the pelvis (rectal examination should never be neglected), and leucocytosis showed the presence of pus. The diffuse and general peritonitis and the fulminating type were recognised more by the aspect and general conditions of the patient than by the local symptoms. Dr. Dreschfeld briefly spoke of the complications, such as venous thrombosis, pyelophlebitis, subphrenic abscess, liver abscess, empyema, meningitis, perinephritic abscess, &c., which might occur when the acute symptoms had subsided, and then spoke of the differential diagnosis. Primary typhlitis was rare, but did occur, as shown by post-mortem examination, where the appendix was found healthy and ulcers were found in the cæcum; it could not clinically be distinguished from appendicitis. Stagnation of faeces in the cæcum (stercoral typhlitis) occurred chiefly in old people and gave rise to no pyrexia and often very little pain in the ileo-cæcal region, and faecal masses were often detected in other parts of the large intestine. Tuberculous appendicitis generally ran a chronic course; in children, however, it might set in more or less acutely. In children intussusception and acetonaemia brought on by errors of diet might give rise to symptoms simulating appendicitis but their recognition was not difficult. Mucous colitis, intestinal spasms, enteralgia, and the appendicular neurasthenia or hypochondriasis were chronic non-febrile affections. Of other affections which might simulate acute appendicitis they had to consider typhoid fever, which during the first few days might simulate appendicitis at a time when Widal's reaction could not be made use of, but the cultivation of the typhoid bacillus from the blood on a medium containing bile was possible early. Appendicitis might occur during the course of typhoid fever and be due to typhoid ulcers either during the third week or during convalescence or the fever might rouse a latent appendicitis into activity. Cholecystitis, especially if there were adhesions and the gall-bladder was dragged down, might simulate appendicitis and in females affections of the ovaries gave rise to symptoms difficult to distinguish from appendicitis; moveable kidney and hydronephrosis should also be mentioned as closely resembling in their symptoms acute appendicitis; also hæmorrhagic pancreatitis. The perforation of a gastric or duodenal ulcer or of a pyosalpinx causing perforative peritonitis was often only to be recognised by the history previous to the perforation. As croupous pneumonia at its onset had sometimes been mistaken for appendicitis it was well to examine the chest repeatedly if there be any suspicion of a pneumonic affection. As regards medicinal treatment, Dr. Dreschfeld only drew attention to the points now well recognised. The important question in which cases and when to operate Dr. Dreschfeld left his surgical colleagues to discuss, and he would only remark that from his own experience he was in favour of an early operation and that he remembered no case in which he regretted having advised operation, whilst in some cases an operation earlier might have prevented some of the most serious complications.

Mr. F. A. SOUTHAM made some remarks on the advisability of early surgical interference in acute appendicitis and mentioned details of a number of cases which illustrated the good results of the so-called "early" operation (viz., within the first 48 hours), as compared with those which attended operation at a later period in the course of an attack. As regards the indications for early operation, attention was called to the fact that whereas in the initial stage the pulse-rate and temperature bore no constant relation to the severity of the attack, painful rigidity of the abdominal wall most marked over the region of the appendix, with absence of abdominal respiration, the breathing being mainly or entirely thoracic, were symptoms usually pointing to the onset or the presence of the destructive form of appendicitis, and indicative either of perforation or of gangrenous changes taking place in its walls. The chief advantages of the "early" operation were that the appendix could be removed before suppuration had taken place, and if it had not perforated or become gangrenous the operation was an aseptic one. If suppuration had taken place, even though not encysted or surrounded by a barrier of lymph, in the early stage the pus would usually be limited to the region of the appendix; in these

circumstances its evacuation together with the removal of the appendix, if followed by free drainage, generally checked the spread of the suppuration, which otherwise so often tended to become general.

Mr. A. H. BURGESS thought that too much stress had been laid on the difficulties of diagnosis of acute appendicitis and considered that of all the acute diseases to which the human abdomen was liable acute appendicitis was the least difficult to diagnose. Its symptoms were of a definite character and, as had been shown by Murphy and other surgeons, followed one another in a characteristic order—viz.: (1) pain, felt at first around the umbilicus, later over the appendix; (2) nausea, which in many cases, but not in all, proceeded to vomiting; (3) localised tenderness, most marked over the appendix; (4) rigidity of the overlying abdominal muscles of the "involuntary type"; and (5) rise of temperature and pulse. The importance of a rectal examination in every suspected case was strongly insisted upon, as was also the avoidance of morphine until the decision for or against operation had been made. Attention was drawn to the deceptive improvement in the symptoms which not infrequently manifested itself at the time when the appendix became gangrenous or perforated, due to a temporary cessation or diminution of toxin-absorption—an improvement which had been frequently overlooked and had led to fatal delay in advising operative treatment. The advantages of early operation, while the infection was still limited to the appendix, were enumerated, and the chief objections that had been raised to its universal adoption were considered. Having regard to (1) the minimum of risk attending removal of the appendix while the infection was limited to it; (2) the impossibility of foretelling whether the infection would remain so limited; (3) the greatly increased risk of operations carried out after extension of the infection to the peritoneum; and (4) the many disadvantages (apart from risks) which attended operations in the "abscess" stage (prolonged convalescence, weak abdominal scar, numerous adhesions, and appendix often left behind), Mr. Burgess advocated removal of the appendix as soon as a definite diagnosis of acute appendicitis had been made, believing that only in this way would the mortality of appendicitis be reduced to a minimum.

Mr. J. E. PLATT agreed with the remarks of previous speakers as to the necessity for early operation in acute appendicitis and expressed the opinion that at no distant date operation would be regarded as just as urgently required in these cases as in cases of strangulated hernia or ruptured gastric ulcer.

Mr. E. STANMORE BISHOP thought that most surgeons would agree as to the advisability of an operation during the first 48 hours, if that could be obtained, but it was not always possible, first through doubt as to the diagnosis, and secondly through refusal on the part of the patient to submit. The main difficulty, however, was not then, but in the period immediately after—that of the intermediate operation as it was called. It was only necessary to look at the second of Mr. Southam's tables to recognise the great mortality of which attended operations during that period, whereas if it were in any way possible to wait until a quiescent period the mortality was nil. His own experience tallied precisely with that. Moreover, they did not always get these cases during the first attack. Many patients had a previous history of several more or less mild recurrences. If such a patient came during the early period of one of these secondary attacks, was it wise to operate? He thought it was infinitely preferable to wait if that were possible, since such appendices were frequently buried beneath adhesions or behind the cæcum, needing long and sometimes tedious dissection to enucleate them, whilst the risk of setting free small collections of virulent pus was great. He believed that no hard and fast rule was possible. Each case must be judged on its own merits.

Dr. J. E. HELM, Dr. A. MACDOUGALL, and Mr. G. A. WRIGHT also took part in the discussion.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Exhibition of Specimens.—*Sacro-coccygeal Tumour.*—*Cerebro-spinal Meningitis.*

A MEETING of this section was held on March 15th, Dr. W. R. DAWSON being in the chair. Dr. W. BOXWELL exhibited a Cerebellar Abscess taken

of the problems of health and disease with the biological problems of evolution, heredity, and variation, and since the publication of his work, "The Present Evolution of Man," the discovery of Mendel's researches has shed a fresh light on many puzzling questions connected with heredity. The results thus obtained within the past five years are of such practical value that some handbook is called for which presents to the public in small compass a summary of this recent progress.

With the reservations noted below Mr. Lock's volume supplies this want. As the preface states: "So far-reaching are the results already arrived at both in their scientific interest and in their probable influence upon human affairs, that it seemed desirable to give an immediate account of these and of kindred lines of recent study." In the first two chapters a brief summary is given of the various theories regarding the origin of species—the Lamarckian, Darwinian, and the mutation theories of Hugo de Vries—and also of the proofs of inorganic and organic evolution. Natural selection is next discussed and the chief arguments in favour of and against the inheritance of acquired characters are considered. One chapter deals with the remarkable results obtained by the methods of biometry introduced by Sir Francis Galton and now carried on so ably by Professor Karl Pearson. Another chapter is devoted to an exposition of the mutation theory, and the concluding third of the book is occupied by a description of Mendel's law, some of the intricate problems it sets or explains, and illustrations of its practical results. Readers of the discussions in our columns in 1899 and in 1903¹ are aware of the confusion of thought existing even in scientific circles as to the transmission of acquired characters. It behoves all medical men who desire to study heredity to try to understand very clearly this intricate problem; the attitude assumed by the medical profession towards this question will in the near future be of extreme importance to the welfare of the community. Most of the evidence to-day available points to the non-transmission of acquired characters; examples apparently pointing to the opposite conclusion are usually due to the difficulty of distinguishing between the inborn variations and the variations acquired during the lifetime of the individual when several successive generations are exposed to identical environmental conditions. Before the researches of de Vries and the recent discovery of Mendel's work (which was carried out at the same time as that of Darwin and then lost to the world for 40 years) Mr. Lock points out that the methods of plant and animal breeders depended upon guess-work or practical experience, but, he adds, "we are now within sight of the day when a complete system of precise scientific methods will have been elaborated. The time required for the development and application of these methods must chiefly depend upon the apathy or enterprise of those in whose hands rests the means of subsidising this kind of work, for without proper resources the progress of any such study must of necessity be slower than it would be if properly equipped establishments were at the disposal of duly trained experimenters receiving an adequate remuneration." With these words we cordially agree. The inadequate endowment of scientific research in almost every department in this country is matter for grave apprehension as to our future progress. As a nation we "muddle through" by experience after many blunders, and valuable time, energy, and money are wasted irretrievably where foresight gained by science would have yielded quicker and more profitable gains. Mr. Lock proves his point by his examples of the rust-free and other desired strains of wheat which have been obtained by the application of Mendel's

laws to the cultivation of wheat. Medical men will be interested to learn that Mr. W. Bateson of Cambridge from his study of the pedigrees of animals believes it is highly probable that certain congenital diseases in man are inherited in accordance with Mendel's law.

Towards the end of his book the author states that "the nearly historical order in which the subject-matter has been presented has inevitably rendered the treatment a little disjointed." We regret to have to confirm this statement. This historical survey has, moreover, rendered the arguments difficult to follow, and the constant references to counter-arguments in future or previous chapters break the line of the reader's thought and distract the attention. The subject to be condensed into 290 odd pages is so complex, so packed with facts, that only the most salient features should have been selected, and these should have been presented with concise definitions, uninvolved, methodical arguments and a straightforward style, such as is adopted by writers of students' text-books. To understand Mr. Lock's chapters on Mendelism the student would require to refer to Mr. R. C. Punnett's admirably clear little book on that subject. Mr. Lock is, in fact, hampered by too much knowledge, and his somewhat laboured style of writing will, we fear, prevent the volume receiving the welcome and wide reception from the general public which its subject matter so greatly deserves. We regret exceedingly to find these faults in a book so conscientious and thorough.

Midwifery for Nurses. By H. RUSSELL ANDREWS, M.D., B.S. Lond., M.R.O.P. Lond., Assistant Obstetric Physician, London Hospital. With illustrations. London: Edward Arnold. 1906. Pp. 308. Price 4s. 6d. net.

THIS little work has been written by Dr. Andrews for the use of pupil midwives. A perusal of it gives a good idea of the amount of knowledge a midwife is required to have at the present day, and the amount certainly is considerable. It is fairly easy for the writer of such a work, now that he has the regulations of the Central Midwives Board to guide him, to refrain from going into details which are not necessary. It is, however, certainly surprising to find the amount of detail which is given in a book of this kind, and while we feel that the modern midwife at any rate should be well trained yet we wonder whether the ordinary type of pupil midwife is really capable of learning and retaining such an amount of information. Dr. Andrews has certainly done his work well, his book is clearly written and well illustrated, and if we find certain statements to which we may take exception, our criticism does not mean that we do not approve of the general style of the book, which is excellent. We regret to see that the old-fashioned and unsatisfactory method of treating the nipples with eau de Cologne or some similar astringent is still recommended; we would advise as a much better plan the use of lanoline or any ordinary antiseptic ointment. On p. 43 is the statement that if a woman continues to suckle her child when pregnant uterine contraction may be set up and abortion induced. We wonder what authority the author has for this statement. Cases of lordosis so marked as to simulate pregnancy are so uncommon that it seems hardly worth mentioning them in a book intended for midwives. Personally, in a very considerable experience we have never seen such a case. The account of abdominal palpation is, as it should be in a book of this description, especially good. In the instructions for passing a catheter the nurse is told if there is any difficulty in finding the urethra to place the patient on her back. As a matter of fact such difficulty is much more likely to be met with in this position than when the patient is on her side, the position we suppose Dr. Andrews would recommend, although no instructions are given upon this

¹ THE LANCET, October and November, 1899, and July, August, September, and October, 1903.

but often occurred in cases of hemiplegia either before or after the attack. 2. A girl, aged 20 years, whose right eye showed absence of the Arteria Centralis Retinæ, probably due to a congenital abnormality and a reversal to the type met with in the carnivora, especially the wolf. 3. A girl, aged nine years, with Spurious Optic Neuritis which had existed for three years without affecting the vision. The condition was that of congenital swelling of the disc due to a form of opaque nerve fibres. 4. Pseudo-Glioma in a baby, aged ten months, showing shrunken right eye, small anterior chamber with retracted angle, old iritis, and greatly decreased tension—signs which all pointed away from true glioma. The usual history was that a child had had convulsions, was extremely ill generally, had general congestion of the eye, and had no fundus reflex. Pseudo-glioma was probably due to a septicæmia, so was really a form of septic infarct into the vitreous, which got filled with purulent, but not very virulent, material. The condition subsided and left a dense cicatricial mass in the vitreous. The treatment was to leave the eye alone.

Reviews and Notices of Books.

Anæsthetics: their Uses and Administration. By DUDLEY W. BUXTON, M.D. Lond., M.R.O.P. Lond. Fourth edition. (Lewis's Practical Series.) London: H. K. Lewis. 1907. Pp. 415. Crown 8vo. Price 7s. 6d.

A HANDBOOK which has so well justified its existence as to have reached a fourth edition needs little in the way of commendatory criticism, but we deal at some length with the latest issue of Dr. Dudley Buxton's excellent and well-known volume because there are contained in it several important new features to which attention may profitably be drawn, while a word of praise must be given to the complete manner in which the writer has covered all the wide field comprised in the practical side of anæsthesia. A valuable chapter deals with the use of anæsthetics in obstetric practice. This is an aspect of the matter to which the text-books commonly pay too little attention and a precise knowledge of which is of the greatest service to the general practitioner. It is not merely that a patient's comfort is so materially enhanced by the presence of some degree of anæsthesia in labour, but, further, the safety and the proper progress of a confinement are directly aided by the employment of chloroform in the various stages of the birth. Dr. Buxton points out in a series of epitomised rules the degree of anæsthesia to be reached in the various circumstances of normal and abnormal cases of confinement, and we consider his directions in this matter to be one of the most valuable portions of the volume. The old objections to administering chloroform during labour are nowadays widely abandoned, but there are still many whose fears are justified in the absence of exact knowledge in the matter. Better no chloroform in many cases than chloroform wrongly used. To all who may be swayed by such a feeling we most warmly recommend a perusal of this chapter on the matter in Dr. Buxton's little book.

The present edition has been brought up to date by considerable additions. The new matter relates mainly to dosimetric apparatus for the administration of chloroform, to ethyl chloride and allied drugs, and to spinal anæsthesia. The last is a topic which is often omitted from books upon anæsthetics and we are glad to see it included in a volume of this nature, which is designed to give to the student and the practitioner a good general survey of the entire subject of anæsthesia. With the large amount of literature that has accumulated quite recently upon matters germane to anæsthetics, such as, for instance, shock and the gases of the blood, Dr. Buxton has wisely not attempted to cope. He prefers, generally speaking, to lay down the practical rules deduced

from the scientific work of physiologists rather than to give an account of the work itself. The author finds ethyl chloride not good for alcoholic cases, which opinion is in interesting contrast with that of some other anæsthetists who in this very class of case select it as against nitrous oxide. He does not consider posture as of much importance in the case of this drug except where the aged are concerned.

With regard to the administration of chloroform Dr. Buxton is a warm supporter of Professor Vernon Harcourt's apparatus, of which he gives an excellent account and from which he has obtained highly satisfactory results. In the chapter upon Spinal Anæsthesia an accurate account is given of the exact method to be employed, with a couple of figures, supplied by Dr. J. Mackenzie Davidson, to show the position of the needle. The author prefers stovaine to other drugs for spinal anæsthesia when this method is employed, but he thinks that at present its dangers are greater than those of chloroform in skilled hands. He enumerates a formidable list of after-effects that may be evoked. A short account of regional anæsthesia is also given, as well as a comprehensive description of local analgesics. The volume concludes with an interesting chapter upon the Medico-legal Aspects of the Administration of Anæsthetics. Here the cases are discussed wherein persons have alleged that they were chloroformed against their will and with astounding rapidity, and the attitude is considered of the person who is conscious but powerless to resist. Discussing the possibility of anæsthetising people during sleep the author relates the experience of Dolbeau who in one series of nine persons anæsthetised six without awakening them.

In a chapter upon the accidents of anæsthesia and how to treat them Dr. Buxton wisely alludes first to the precautions which must be taken to avoid the occurrence of accident. It is in the prevention of accident far more than in its treatment that an anæsthetist's skill and experience are commonly exhibited, and it may be laid down as an axiom that the more accomplished the administrator the less often will he require skill in the treatment of dangerous conditions. Dr. Buxton, we are glad to see, lays stress upon the ill effects of an enema given shortly before operation; not uncommonly severe shock is caused by this proceeding. Even in the case of rectal operations there should be at least one hour's interval between the administration of the enema and the commencement of the inhalation of an anæsthetic. Dr. Buxton has nothing to say in favour of the use of alcohol before the administration of an anæsthetic.

Recent Progress in the Study of Variation, Heredity, and Evolution. By ROBERT HEATH LOCK, M.A., Fellow of Gonville and Caius College, Cambridge. London: John Murray. Pp. 299. Price 7s. 6d. net.

A COMPREHENSION of the laws of heredity is so important for those who work for the improved physique of the human race that it is matter for regret that so little is known about the subject with any certainty. Medicine has been so fully occupied by the study of disease in the individual, and the study of sanitary and other sciences concerned with its prevention, that the attention of the medical profession has not until quite recently been directed to the power of heredity and environment on the physical and mental nature of man. When it is remembered that Darwin's "Origin of Species" was only published in 1859, and that for many years after that event the problems Darwin had given to the world had of necessity to be confirmed and worked out in detail by those engaged in the study of botany and zoology, this indictment is scarcely so grave as it would at first sight appear. Dr. Archdall Reid has pointed out in a manner that challenged and held the interest of both the medical and scientific public the vital connexion

THE LANCET.

LONDON: SATURDAY, APRIL 13, 1907.

Thomas Henry Wakley, F.R.C.S. Eng. In Memoriam.

THE personal sorrow which those who are immediately connected with THE LANCET are feeling at the death of their venerable senior editor will appeal to the sympathy of our readers all the world over. Under the dispensing will of Providence the directing hand of the oldest of our councillors is for ever at rest. We do not intend, either here, or in the more detailed biographical notice which will be found in another column, to speak at any great length of him whose long, active, and useful career has just been closed by death, but we consider it appropriate to say a few words respecting the late senior editor of THE LANCET beyond what is merely biographical.

It is natural that at this moment we should look back some 20 years when the death of JAMES GOODCHILD WAKLEY, THOMAS WAKLEY's youngest brother but predecessor in our editorial chair, occurred; and it is interesting to see how extremely appropriate the words then written under THOMAS WAKLEY's direction concerning his brother are applicable to himself. The brothers had great community of personal characteristics and temperament, although their preliminary education differed widely. The life-work of each as far as it was connected with THE LANCET was very similar, the parallel having originated in the fact that each regarded his position as editor of THE LANCET as a heritage from the father who founded the paper, and each conducted the paper with the same broad objects in view. "The unsparing rod wielded by his father against all enemies, and the sometimes too great admiration extended by his father to attached friends—extremes which are so commonly marked in men of the most powerful order—were extremes unknown to him," was written of JAMES WAKLEY, and is absolutely applicable to THOMAS WAKLEY. The following sentence is equally true in description of either: "He did not write much himself, but he was skilful and keen in discovering men who could write, and what they could write; and he read every line that was written by his staff in which there was anything controversial with the most scrupulous nicety and supervision. He was bold in exposing

evils of a general or public character; hearty in helping forward every public advancement; zealous to make THE LANCET the first chronicler of any new and promising progress in the science and art of medicine; and especially anxious to make it useful in works which were of a sound philanthropical and beneficent nature." It would not be possible to describe the journalistic attitude of him whose death we are now mourning more accurately.

No one occupying an important public post and exerting through it a daily living influence on the profession of medicine was ever more retiring from professional social life than the late THOMAS WAKLEY. On succeeding to the editorial chair he seems to have felt that the only way to preserve the unbiased judgment necessary for a right apprehension of the pros and cons of professional questions was to be as far as possible removed from personal conflicts himself. His father, the founder of THE LANCET, was essentially a public man; as politician, journalist, and public official he was welcome in all circles and enjoyed to the full the variety of a far-extending society, despite the manifold duties appertaining to his busy and complex career. THOMAS WAKLEY, the son, was totally different. His aim was ever to keep in the background, to subordinate himself to his public duty, as he conceived it, and to allow no extraneous influence of any sort to warp his judgment or deflect his just sympathies. He believed that in this way he could best serve his generation by means of THE LANCET, for as his father and his brother loved their journal, so did THOMAS WAKLEY love it. He lived for it and for the promotion of the causes which it advocated, and in a curiously exact way the journal walked hand in hand with him throughout his career. He was born almost contemporaneously with the first issue of the paper; while he was passing through the stress and excitements of boyhood the passionate proceedings of THE LANCET in the heyday of its youth were attracting the notice of the medical and legal professions. Early middle age found THOMAS WAKLEY an established success as a consulting surgeon, while the position of THE LANCET was at length secure, its wild oats having been sown; by the time that it fell to his lot to direct our councils he was well advanced in life, of set habits and opinions, while THE LANCET had a long career of useful work behind it and a definite place in the professional counsels of the country. The feeling that THE LANCET had grown up with him was always strong upon him, and increased his sense of responsibility for its conduct. He gave all his energies to the discharge of the task, and allowed no private influences to interfere between him and his sense of justice—and whatever eulogy we might add we could not draw a better picture of the man and his grasp of his duties.

point. There can be no question as to the marked superiority of the lateral position in passing a catheter. We regret to see that our old and tried friend tincture of iodine is said on p. 67 to be a weak antiseptic; that it is objectionable is true but that it is weak is wholly inaccurate, as any chemist will tell the author. In the section on the mechanism of labour we notice that the old erroneous teaching about flexion of the head is perpetuated; no doubt this is not a matter of much importance in a text-book for midwives, but still accuracy is a good thing, and it has long ago been shown that at the commencement of a normal labour the head is already completely flexed. In the management of cases of unreduced occipito-posterior presentations instructions are given to flex the head by pressure on the forehead, but the necessary addendum that such pressure will only be of any value if applied during a pain is not given. We can hardly believe that even a modern midwife should be taught to rotate the head manually with the whole hand in the vagina, but so it appears they are taught, at any rate by the author. The statement that where the diagnosis is difficult the nurse should feel for an ear and that the lobe will point towards the occiput is inaccurate and misleading. Anatomically, Dr. Andrews should remember that the lobe of the ear is the lobule and as a matter of practice the groove between the pinna and the skull is a much more easily appreciated and trustworthy guide than the direction of the pinna as a whole, which we suppose is what is meant. The section on the artificial feeding of infants is good and clear. We think, however, that all milk given to a baby should, at any rate, be scalded if it is not sterilised. We presume that sterilised is meant when the statement is made that boiled milk gives rise to scurvy. This is certainly not true of scalded milk even if it be true of sterilised milk. No doubt cases of scurvy do occur from time to time but they are infinitely rare and the risk is so small that we certainly think it is almost negligible. It is far better for the ordinary baby to run the very slight risk of scurvy than to drink unboiled milk. Pasteurisation, in our opinion, is quite unfeasible for the ordinary poor mother, while any woman, however careless, can scald her baby's food. On the whole there are a good many little points of detail in this text-book on which we differ from the author, but none the less the book is a fair example of its kind, although the arrangement of the chapters is rather wanting in method. No doubt many of these faults will be corrected in any future edition.

LIBRARY TABLE.

Aids to Dental Surgery. By ARTHUR S. UNDERWOOD, M.R.C.S. Eng., L.D.S., and DOUGLAS P. GABELL, M.R.C.S. Eng., L.R.C.P. Lond., L.D.S. London: Baillière, Tindall, and Cox. 1907. Pp. 126. Price 2s. 6d.—This second edition is really the work of Mr. Gabell but he has had the advantage of Mr. Underwood's supervision. Mr. Underwood has read all the proofs and given valuable aid. The arrangement of the matter has been considerably altered to harmonise with more modern ideas and two new chapters on bacteriology and the hygiene of the mouth have been introduced. The whole book is brought up to date. The object of the authors is to treat most fully those matters the discussion of which comes obviously within the range of the theoretical portion of examinations. That portion of dental surgery which is purely manipulative is entirely omitted. The book is what it pretends to be, an "aid" to dental surgery, and it will, we think, be appreciated by the large body of dental students. The book is well arranged and well written.

The Municipal Year Book of the United Kingdom for 1907. Edited by ROBERT DONALD. London: Edward Lloyd, Limited. 1907. Pp. 684. Price 3s. 6d. net.—This is a compilation containing a mass of information, among which every ratepayer will find something to interest or to distress

him as the case may be. The complex methods of modern life strike the reader as more wearing than ever when he sees them set down, as in this book, in masses of figures and tables.

The Medical Annual. A Year-book of Treatment and Practitioner's Index. 1907. Twenty-fifth year. London: Simpkin, Marshall, Hamilton, Kent, and Co. Bristol; John Wright and Co. Pp. 863. Price 7s. 6d. net.—We have, in noticing previous issues of this annual, almost exhausted the language of eulogy, so that little more need be said now than that the present edition is worthy of its predecessors. It is the oldest of the annuals and the accumulated experience of many years has enabled the editors to bring the work to a very high degree of perfection. The contributors are all known to be experts in those branches of the medical sciences with which they deal and much judgment is shown in the selection of the material dealt with and in the comments which are made. Coloured plates have always formed a great feature of the annual and the increased circulation has enabled the publishers to be very generous in the provision of coloured illustrations. This year they include several relating to cancer and two picturing *spirochæta pallida*. For any busy practitioner who wishes to keep himself up to date no better volume can be found.

JOURNALS AND MAGAZINES.

Folia Therapeutica: a Periodical Journal relating to Modern Therapeutics and Pharmacology for Medical Practitioners. Edited by J. SNOWMAN, M.D. Brux., M.R.C.P. Lond. London: John Bale, Sons, and Danielsson. January, 1907. Pp. 31. Price 1s.—This forms the first number of a new medical publication which it is proposed to publish quarterly. The idea of the proprietors is to devote the journal to publications on the progress of modern therapeutics and pharmacology, and to present in a brief and concise manner the methods of treatment and preparations which can be safely recommended for use and which constitute a real advance in therapeutics. The evidence given for the trustworthiness of any treatment or drug will consist in the authority of the authors by whom or under whose supervision the investigations have been made. It is intended that the journal shall contain original contributions from British and continental authorities on therapeutics and pharmacology; reprints, translations, and abstracts from British and continental medical journals relating to therapeutics, and reports from leading clinics and hospitals. This first number faithfully carries out these intentions. Professor O. A. Ewald (Berlin) contributes an interesting article on the Treatment of Gastric Ulcer and its Complications. He dwells particularly on the course of treatment to be pursued after recent hæmatemesis and considers rest the most important point in the measures to be adopted. He speaks favourably of the use of gelatin in combination with fat in the treatment of those cases of gastric ulcer in which hæmorrhage has taken place. Dr. Adolf Baginsky (Berlin) writes on the Subcutaneous Injection of Physiological Saline Solution in the Treatment of Diseases of Children. Such injections have produced favourable results in his hands in cases of severe summer diarrhoea of children. Amongst other contributions to this number are the following: On Yeast Therapy, by Professor E. Roos; the Scope of Digitalis, with Special Reference to Chronic Kidney Disease, by Dr. N. Tirard; Some Observations on the Therapeutics of Chronic Heart Disease, by Dr. F. J. Wethered; and Uterine Hæmorrhage treated by Stypol, by Dr. M. Handfield-Jones. There are several abstracts from articles on therapeutics culled from various sources, and also a list of contributions to medical literature which have recently appeared. The journal is well printed on good paper.

observed, such as ptomaine poisoning and septicæmia in association with erysipelas, acute periostitis, and extensive burns, and he found in eight out of the 13 that early changes occurred in the Betz cells of the cortex, though no changes were observed in the cells of the medulla and cord. This greater susceptibility of the more highly evolved cells to toxic influences is noteworthy and of interest, as Dr. BUZZARD points out, in connexion with the easily produced exhaustion after voluntary effort familiar in association with toxæmic states. In regard to changes observed in the nerve fibres in these cases the diffuse fatty myelin change was frequently observed, while the Wallerian type was observed only once and then of slight degree.

The second lecture was entirely devoted to a consideration of the disease usually known as infantile spinal paralysis, for which Dr. BUZZARD prefers the title of "acute poliomyelitis." The pathological histology and pathogenesis of the condition were carefully described and illustrated by the appearances observed in three fatal early cases. The most widespread and constant changes are congestion of the blood-vessels and an intense cellular infiltration of their walls, the veins and the capillaries showing the greatest degree of infiltration. These cells are for the most part mononuclear and their origin is still a matter of dispute, but they are probably chiefly derived from cells existing in the walls of the vessels; at any rate, there is no evidence of their neuroglial origin. Round-celled infiltration of similar character occurs in the meninges, especially over the lower part of the cord and on its anterior aspect. There are also masses of cells scattered more or less irregularly through the grey matter, particularly in the anterior horns but not confined to them; these masses Dr. BUZZARD regards as probably due to neuroglial proliferation and lymphocytic infiltration. The ganglion cells of the anterior horn, of Clarke's column and of the posterior horn all suffer in varying degrees, the general but not invariable rule being that those cells most closely involved in the inflammatory exudation show the most marked changes, these varying from early chromatolysis to a condition in which it is difficult to detect the outline of the cell. In discussing the pathogenesis of the disease in the light of his own observations and those of other writers Dr. BUZZARD rejects the old view that it is the result of a primary degeneration of the anterior horn cells with secondary changes in the interstitial tissues and also the so-called "vascular" theory—viz., that it is due to primary thrombosis of the vessels of the cord—and concludes that the process is inflammatory and is probably due to some micro-organism or its toxin, circulating in the blood (but possibly in the lymph). He further concludes that the same morbid process underlies some cases of encephalitis, both of the brain stem and the cerebrum, including probably many examples of infantile hemiplegia.

The third lecture was devoted to a study of acute ascending myelitis, of Landry's paralysis, and of acute toxic polyneuritis. The first of these is regarded as an acute infective disease, not of specific character, and produced by various micro-organisms. Evidence was offered in support of the view that this bacterial infection affects the lymphatic system of the spinal cord. In three cases of Landry's paralysis practically the only change observed

apart from diffuse myelin degeneration in the white matter of the cord and in the peripheral nerves was in the ganglion cells of the spinal cord, which showed early pericentral chromatolysis. From a study of the bacteriological and pathological observation so far on record this disease is to be regarded as "possibly a species of spinal lymphatic intoxication." The condition of acute toxic polyneuritis is one which offers some difficulty in diagnosis from Landry's paralysis. It is less often fatal, but in such cases the lesions have been found to be limited to the lower motor neuron, or to the lower motor and sensory neurons, and are probably parenchymatous degenerations of those structures produced by a toxæmia.

Death Certification and Amendment of the Coroners Acts.

WE referred recently¹ to the proposals set before the Lord Chancellor by a deputation from the London County Council and the Medico-Legal Society. It is of interest to consider somewhat closely the bearing of the proposed changes upon general medical practice in connexion with a more detailed account of the deputation (see p. 1034). One of the most important suggestions for amending the Coroners Acts is that which insists that the medical certificate shall show the fact of death as well as its cause and should vouch for the identity of the deceased. This means that the medical man who signs the certificate of death shall also visit the body after death, so as to be able to state not only that the death has occurred but that the body is that of the person named. In some cases this practice of identification may mean a long journey, and who is to pay for this? At present the death certificate is given by the medical attendant without charge, but it cannot be expected that he shall pay the compulsory visit of identification for nothing. Who is to pay for this visit, the friends of the deceased or the State? At the very low estimate of 1s. per inspection the sum would amount (it is calculated) to about £20,000 a year, whilst if the fee is made equal to that given for the compulsory notification of infectious disease the cost would be two and a half times as much, or a matter of £50,000 a year. Anyhow, the prospect of so large a sum of money being paid out of public funds might make the Government hesitate before proceeding with the measure, unless the usual attempt is made to secure gratuitous medical service.

The section providing that independent medical men should be appointed to assist the coroner in preliminary inquiries, in scrutinising the causes of death, and in making post-mortem examination is a very radical change, one that is chiefly if not solely necessitated by the preponderating number of purely legal coroners and by the imperfect qualifications of their subordinate officers. The dangerous habit of certain coroners of dispensing with medical evidence has been frequently commented on in our columns. Granted that the existing law requires alteration, there is no excuse for coroners breaking the law, while in many recorded instances the absence of medical evidence has been a direct menace to the public safety. In numberless cases it is the practitioner

¹ THE LANCET, March 30th, 1907, p. 900.

The Goulstonian Lectures.

THE widespread disturbances of function resulting from acute toxic or infective conditions of the nervous system are well known to clinical observers and have long been recognised by them, but the knowledge of the underlying anatomical or structural changes is of much more recent acquisition and is less generally current. Modern histological research on the normal structure of the central and peripheral nervous system has resulted in the discovery of methods which have proved fruitful subsequently when applied to the investigation of morbid conditions of those organs. The methods are in many cases complex and the results obtained by them have been in the past difficult to interpret; indeed, even at the present time there are differences of opinion as to how far the appearances observed are to be regarded as *ante mortem*, but the study of the *rationale* of these methods by histologists and neurologists has invested them with a real value and given them a definite significance. Dr. E. FARQUHAR BUZZARD is to be congratulated on having availed himself of the opportunity afforded him by the delivery of the Goulstonian lectures before the Royal College of Physicians of London to draw attention to these matters and to bring forward his own work on the subject. In these lectures, which have already appeared in our columns,¹ he has carefully analysed the pathological features of certain selected conditions of acute paralysis of widespread distribution, and presumably of toxic or infective origin, and in so doing has made a useful *résumé* of the main facts known in regard to the pathology of those diseases; while by his own observations he has brought forward valuable information regarding obscure points in connexion with them.

His first lecture was largely devoted to a general consideration of the effects upon the structures of the nervous system, especially those subserving motor functions, of various toxic agents, including some which apparently have a specific affinity for these structures and others for purposes of comparison or control of more general and widespread activity. The motor cells comprising the large pyramidal or "Betz" cells of the motor region of the cortex cerebri, the cells of the anterior horn of the spinal cord, of the motor cranial nerves, and of the nucleus ambiguus, all belonging to the so-called "stichochrome" class, have been studied by many observers in various abnormal states by the agency of the method of Nissl, which is that almost universally employed for the purpose. It depends upon the selective activities of certain basic aniline dyes and demonstrates that these cells present two separate substances—one basophile, called the chromatic substance, found in the nucleolus, the nuclear membrane, and in the form of certain masses in the protoplasm of the cell body and its dendrites, to which the name of Nissl bodies has been applied; the other substance is non-basophile and is therefore called achromatic. This substance is regarded by various observers as pervading the cell body and the axis-cylinder process in the form of a fine granular network, the meshes of which inclose the Nissl bodies. In the normal cell of the stichochrome class the general outline of the cell is polygonal with

concave borders between the bases of its processes, the nucleus is of rounded form and usually centrally placed, the nucleolus being in turn situated at its centre, while the Nissl bodies are usually arranged along pericentric lines—that is, lines more or less parallel with the borders of the cell. This method applied to the study of the cellular changes produced by various abnormal states or conditions has shown that those resulting from toxins are very similar to, if not indistinguishable from, those resulting from other influences, such as high temperatures, artificial anæmia, and great cellular activity; moreover, the so-called "axonal reaction"—that is, the alteration in the cell consequent on injury or degenerative conditions of its axis-cylinder process—closely resembles the changes induced primarily in the cell by toxic agents. The problems involved, therefore, in elucidating the effects of such agents are obviously complex and require careful unravelling.

In describing the acute toxic changes in these cells Dr. BUZZARD recognises three types: early forms in which the cell is little altered in shape, but in which the chromatin granules or Nissl bodies are breaking into fine particles especially around the nucleus or near the periphery of the cell, changes which are described as perinuclear and peripheral chromatolysis respectively. In another form of early change the cell is somewhat swollen and the whole cell body stains more deeply owing to the fragmentation of the chromatin particles and to the achromatic substance becoming more susceptible to the stain. In the second variety of change, referred to as the moderate type, the cell is round and swollen, the nucleus is no longer central, and there is complete, or almost complete, chromatolysis. In the third, or advanced, type the cell is globular in shape, of homogeneous or vitreous appearance, and the nucleus is either near the surface, or actually extruded from the protoplasm, while in another form of this type, the cell having retained something of its original shape, is, together with the nucleus, uniformly lustreless, the nucleolus alone being distinguishable. The general conclusions arrived at are that the histological appearances observed are not distinct from those obtained in other conditions and that no poison exerts a change which is recognisably different from that evoked by other poisons.

For the study of early changes in nerve fibres the Marchi method or the "Busch" modification of it is usually employed, and Dr. BUZZARD describes two different conditions as occurring in acute toxic states—the first practically indistinguishable from the well-known Wallerian degeneration but not necessarily secondary to changes in the corresponding cells; the second the appearance of numerous fine rounded drops of fat or rather of material stained by the Marchi process in the white fibres of the central nervous system or in the peripheral nerves. These droplets usually lie within the myelin sheath but are seldom large enough to occupy more than half of the transverse diameter of the fibre. This second form, which he has observed in toxic states of all kinds, Dr. BUZZARD regards as a fatty degeneration of the myelin sheath analogous to the fatty change found in other organs in toxic conditions. For purposes of comparison he has studied the condition of the nervous tissues and of the muscles in 13 cases of general toxæmia in which paralysis was not

¹ THE LANCET, March 16th (p. 706), 23rd (p. 785), and 30th, 1907 (p. 863).

authority and seldom do so. A good example of the advantage which may sometimes be gained by timely intimation to the medical officer of health of cases of this kind appears in the annual report for 1906 of Dr. G. Arbuckle Brown, the medical officer of health of Partick, who gives a detailed account of a case of tinned meat poisoning which occurred last year in that burgh in circumstances specially favourable for investigation. The incriminated tin was a large one and contained about four pounds of ox beef manufactured by a Chicago firm. It was opened by a Partick provision dealer who was in the habit of selling canned beef in small quantities, about a quarter of a pound at a time, to customers of the poorer class. The beef was turned out on to a plate provided with a cover, and portions of it were purchased on Saturday night, May 26th, or on the following Monday morning, by persons in five different households. Out of 19 persons constituting the five families as many as 12 were affected. In each family those who had not partaken of any of the suspected meat escaped, while those who partook of the meat, in some cases only in very small quantity, were attacked. The symptoms were mainly those of acute gastro-intestinal irritation. Within two or three hours, or less, of eating the meat the patients were attacked by severe abdominal pains, vomiting, and purging, together with, in some cases, severe prostration, collapse, and marked cyanosis. No fatal case occurred, although for a time the condition of some of the sufferers was very grave. Recovery was rapid and apparently complete after two or three days in nearly all the cases. A house cat which had been given some of the meat also suffered from acute intestinal irritation. Fortunately a portion of the suspected meat remained at the purveyor's shop and was available for examination. No trace of metallic poison could be detected in it. The observations recorded by Dr. Brown appeared to negative the assumption that the meat became poisonous as a result of bacterial action after the tin was opened. Having regard to the rapid onset of symptoms, to the absence of anything like an incubation period in any of the cases, and to the rapidity of recovery, it seemed that the poison must have been already present in the meat at the time of ingestion, and probably existed as a toxin of bacterial origin. The matter was put to further trial by testing the agglutinating action of the blood of eight of the patients on a stock culture of Gaertner's bacillus. In all cases a strong reaction (20 to 30 minutes with dilutions between 1 in 30 and 1 in 60) was obtained. Bacteriological examination of the meat did not reveal any evidence of the presence of living Gaertner's bacillus. It is known, however, that cultures of this bacillus may be killed by heat but yet remain poisonous in consequence of the endotoxin they contain, and Dr. Brown on review of the agglutination tests and of the whole investigation points to the strong probability that in this case the meat, before being tinned, was infected by the Gaertner bacillus and that at the time of heating and sterilisation endotoxins were set free from the destruction of the bacilli, thus giving rise to immediate symptoms of poisoning on ingestion.

A CASE OF POISONING BY NITROBENZENE.

In the *Boston Medical and Surgical Journal* of Feb. 14th Dr. John L. Ames records a case of poisoning by nitrobenzene. The patient, aged 47 years, drank from a bottle containing nitrobenzene thinking it to be sarsaparilla. It burned his throat and he immediately became ill. When taken into hospital he was cyanotic, the blue appearance of the skin and mucous membranes being very marked. The surface of the body was cold and the temperature was 97° F., the pulse was 130, weak and irregular, and the respiration was 30. The patient was semi-conscious and

there was marked prostration. The blood was chocolate-coloured and very thick and viscid. A pint was withdrawn, in a thick tarry condition, by venesection and was replaced by normal saline solution. Stimulants, liquids, and oxygen were administered freely. He responded well to the treatment and began to improve after 12 hours. After two or three days cyanosis disappeared and the blood became normal. Poisoning by nitrobenzene is rare; the symptoms are similar to those of acetanilid poisoning, only they are more intense. The condition of the blood is one of methæmoglobinæmia. In the case under notice the urine was negative except for an increase in the urophens.

THE SMELL OF PAINT.

THE smell of paint occasions distress to a good many people and the spring-cleaning season, when it involves the painting as well as the cleaning of the house, is dreaded, not on account merely of its interfering with the ordinary comforts and conveniences of the home, but because also in not a few cases a distinct disturbance of health is threatened. Persons who are sensitive to the vapours of paint, or, what is the same thing, to the turpentine and oils contained in the paint, are well advised to resign their home until the drying influence of the air has dissipated the volatile oils. Turpentine, even in the form of vapour diluted with air, undoubtedly affects the health of some persons, the disturbance manifesting itself in the shape of giddiness, headache, deficient appetite, and anæmia—a typical case is recorded this week. There were headache, vomiting, swelling of the tonsil, albuminuria, and a marked rise in the temperature apparently due to an exposure to the emanations of wet paint for nearly a fortnight. That such a case should now and then arise is not surprising when regard is paid to the toxic effects which turpentine vapour is capable of setting up. Turpentine, in short, is a poison and cats and rabbits are so susceptible to its action that if kept exposed to its vapour for some minutes, they exhibit marked toxic symptoms ending in death if they are not removed from the sphere of action of the vapour. Personal idiosyncrasy, however, is clearly an important factor, for many persons and probably the majority do not seem to be affected by turpentine vapour to any serious degree. A very sensible precaution during the painting season for those to take who are compelled to endure the nuisance is to leave bowls of water in the freshly painted rooms. Some, at any rate, of the paint emanations are thus absorbed, as will be seen by the oily film on the surface of the water so exposed. An even more powerful absorbent is fresh milk which reduces the smell of paint in a room in a remarkable way. The poisonous effects of paint emanations do not appear to be connected in any way with the lead contained in the paint, the colic of painters being due to the actual contact of the person with the substance of the paint.

THE BRITISH LEGATION AT TOKIO AND ITS MEDICAL OFFICER.

IN THE LANCET of Oct. 14th, 1905, p. 1119, we called attention to the fact that the medical officer to His Majesty's Legation at Tokio was not only a foreigner—namely, Dr. Wansch of German nationality—but a medical man who did not possess a qualification registrable in Great Britain or Ireland. We pointed out that although any unregistered person could practise medicine in the British Empire, provided that he did not imply that he was registered, yet that an unregistered practitioner could not hold certain appointments and could not sign certain necessary certificates. We alluded to some correspondence which had passed between Mr. Sidney Gerald Gomes, F.R.C.S. Edin., a British subject practising in Tokio, and Sir Claude Macdonald, H.B.M. Minister, Tokio, in

in attendance on the deceased who can alone complete the story. His place as a witness cannot be taken by an independent medical investigator who never saw the deceased in the flesh. Such a witness can only help the non-medical coroner to appreciate rightly the evidence of the practitioner. In the public interest the account of the cause of death, and if necessary of the result of the post-mortem examination, should be exact and true, and if, as the petitioners recommend, "the records of all such inquests should be public property," it would be well that they should be made by an independent and specially competent person. Medical practitioners, who not unfrequently suffer from the ignorance of the coroner as well as of the jury of the elements of medical science, would welcome the innovation. The cost of the independent medical assessors would, of course, be borne by the county, and the provision as to the number and the emoluments of these special referees would be made by grouping towns and country districts together. The proportion of uncertified to total deaths varies from 1.2 per cent. in London to 8.5 per cent. in North Wales, and to 42 per cent. in Inverness-shire—a proportion which caused great astonishment even to the Lord Chancellor. No doubt the large percentage of 42 is due, as was explained, to the scattered population, but whatever difficulty exists ought to be grappled with and remedied, for there can be no doubt that the possibility of burial without due certification and registration does actually exist.

The recommendation of the Medico-Legal Society put forward by the deputation—that there should be mortuaries with proper equipment for thorough investigation into the causes of death—is so manifestly sensible that there can only be surprise that at the present day it is necessary to call attention to such a want. Recent research in morbid anatomy and bacteriology has made it essential that the mortuary of the future must be properly equipped. Whilst agreeing with most of the recommendations and views placed before the Lord Chancellor in excellently plain terms we must again call attention to the difficulties that would attend the carrying out of regulations as to medical assessors or independent investigators. The words of the recommendation are, "That medical investigators should be appointed to inquire into the causes of all uncertified deaths." It must be remembered that an uncertified death does not necessarily mean that the deceased has died without any medical attendance, and due provision must be made for securing the attendance and the payment of the medical man who may have looked after the deceased during the last illness. It may fall to him to make the post-mortem examination himself, while if the case resolves itself into one of, say, unusual poisoning where special assistance is necessary, he should be summoned to the aid of the official medical investigator. But we may hope that there will be a quick response to the urgency of correct registration of the real causes of death and of actual inspection of the body by the person who signs the certificate. The public as well as the medical profession is in a state of uncertainty because of the conviction that things are at present in a state of confusion. A movement for reform is now backed up by medical concurrence, for the most part well considered, and we may reasonably expect action to follow.

Annotations.

"Ne quid nimirum."

LORD LISTER'S EIGHTIETH BIRTHDAY.

Lord Lister's eightieth birthday, which fell on Friday last, April 5th, was the occasion of his receiving congratulatory letters and addresses from all parts of the world. To this universal tribute the congratulations of THE LANCET may be very sincerely added. A meeting was held at the Royal College of Surgeons of England on April 4th, under the chairmanship of Mr. Henry Morris, the President of the College, with the object of deciding upon a means of celebrating the anniversary. Our readers are aware that the decision had already been arrived at by the committee appointed to make a fitting recognition of the anniversary to republish Lord Lister's works. The following gentlemen were appointed as an editorial committee: Sir Hector O. Cameron, Mr. W. Watson Cheyne, Mr. Rickman J. Godlee, Dr. Dawson Williams, and Dr. O. J. Martin. It was also agreed to preface the volumes with a sketch of Lord Lister's scientific work, so that the various steps in his discoveries may be rightly appreciated. This sketch is to be in no sense a biography of the man, but is to represent his work in due sequence, so that the reader may understand the development of the doctrines which led to the revolution of surgery.

CANNED MEATS AND "PTOMAIN" POISONING.

IN connexion with the American "packing-house scandals," which received so much public attention last year, questions have been raised as to the risk which is entailed by eating canned meat which, before being cooked, has been exposed to uncleanly conditions leading to contamination by the "meat poisoning" bacteria. It is sometimes represented that the objection to such foods may be well founded on wholesome sentiment, but is not strongly supported by evidence of actual poisoning. This view appears to be based mainly on three considerations: 1. Cases of poisoning due to canned meat foods do not often come to the notice of medical officers of health or sanitary authorities. 2. In well-known outbreaks of poisoning by prepared meat such as the Mansfield "potted meat" and the Derby pork-pie epidemics, the food in question has not been canned, and apparently the contamination of the meat has taken place after cooking. The illness which has resulted has been due, principally at all events, to infection by living bacteria of one or another kind, especially the bacillus enteritidis of Gaertner, and the symptoms of poisoning in most cases have appeared only after a definite incubation period during which the bacilli have multiplied within the body of the patient. 3. Canned meat foods have nearly always been subjected to a high temperature for a period sufficient to kill the bacteria in question. These facts can readily be admitted, but they by no means justify the conclusion sought to be drawn from them. It is obvious that the effects of a batch of contaminated canned meats could never be traced in the same way as a batch of pork pies which have all to be consumed within a few days of being made, and mainly by persons living in a few localities. The canned-meat poisoning, when due to toxin and not to living bacteria, produces symptoms which come on within a few hours at most and in all but the severest cases pass off comparatively quickly as the toxin becomes eliminated. Milder cases probably often do not come under medical treatment at all, while medical practitioners who see isolated instances of "ptomain" poisoning are under no obligation to report them to the sanitary

case of the drivers of motor omnibuses the question is particularly important, not only because the guidance of these monstrous machines through streets congested with traffic demands so constant an exercise of attention and judgment, but also because the chauffeurs under the new dispensation are necessarily influenced to some extent by the tradition of industrial drinking which flourished amongst their predecessors of the whip and which may still be fostered by the continuance of the practice of selecting public-houses for stopping places. In the interest of the public security it is not too much to demand that men while in the actual discharge of such responsible duties shall not be permitted to take alcoholic liquors. Nor should the approximate attainment of this ideal present any very great practical difficulty; engine drivers and chauffeurs already for the most part wear a distinctive dress and it would therefore be comparatively easy to make it a penal offence for a licence-holder to serve them with liquor while on duty." A similar prohibition applying to police constables in uniform was advocated in both the majority and the minority reports of the last Royal Commission on the licensing laws and the recommendation will no doubt be embodied in the Bill which is to be brought before Parliament this session. All that would be needed, therefore, to secure the measure of prohibition advocated by our correspondent would be to extend this clause so as to make it apply also to railway and motor drivers under similar conditions. The suggestion appears to us interesting and worthy of attention, but we think that more evidence than is at present under our hands connecting accidents in mechanical traffic with the drinking habits of the drivers must be forthcoming before any change in the law will be made.

POISONING BY CHEESE.

It is only occasionally that cases of poisoning by cheese are recorded, which is, perhaps, somewhat remarkable considering how readily toxins develop in stale milk. The conclusion would seem to be justified that, on the whole, the manufacture of cheese is conducted with due regard to hygienic considerations. As far back as 1683 a toxic principle known as tyrotoxin was separated from cheese which on being eaten had given rise to severe toxic symptoms. The same substance was extracted from stale acid milk. It proved to act as a violent poison, producing sickness, diarrhoea, and muscular spasms. There is little doubt, however, that similar symptoms had been traced to cheese long before the date that tyrotoxin was recognised.¹ We published an article which appeared in THE LANCET of March 28th, 1829, under the heading of a "Case of Poisoning by Cheese," in which a whole family, consisting of a middle-aged man, his daughter, a girl aged ten years, and a female relative about 60 years of age, had been suddenly seized with symptoms of poisoning as violent colic pain, vomiting, diarrhoea, and tenesmus, within an hour of eating a cheese recently bought. Another family who had purchased cheese from the same shop were attacked in a similar way. In those days the methods of chemical analysis were necessarily less refined than they are at the present time; nevertheless an examination of the cheese and of the vomited matters led to the extraction, by means of alcohol, of a substance which, from the description given, was evidently identical with the toxic substance now known as tyrotoxin. Since that date several instances of poisoning by cheese have been recorded and in every case a poisonous principle has been extracted which has proved to be identical with tyrotoxin. We have occasionally examined specimens of cheese which were suspected to contain copper, but the presence of this metal proved on the whole to be rare, while in cheese which had

occasioned irritant poisoning there was obtained an extract suspiciously like tyrotoxin and which at any rate responded to the chemical tests which are regarded as characteristic of that substance.

THE AFTER-CARE ASSOCIATION FOR POOR PERSONS DISCHARGED RECOVERED FROM ASYLUMS FOR THE INSANE.

THE After-Care Association has recently issued its report for 1906. This report again illustrates the excellent work done by this society in finding work for and in other ways assisting poor persons who have recently been discharged recovered from asylums and mental hospitals. Experience has demonstrated that many patients discharged from asylums and hospitals for the insane are quite capable of work if suitable occupation be found for them, but are unable to stand the anxiety and strain of procuring it for themselves. During the year 1906, 308 applications (184 for women and 124 for men) for assistance were received, which again shows an increase compared with former years. The report states that of these "many have been assisted as in the past by being boarded out in cottages in the country, by grants of money or clothing, and by finding occupation or in other ways as the council has thought best." This association is almost entirely dependent upon annual subscriptions and donations for carrying on its useful and charitable work. Many persons have a relapse of their mental illness largely owing to the difficulty that they experience in finding occupation after a nervous breakdown, and efforts for restoring such individuals once again into the ranks of workers deserve every support, especially when we realise that it is the only charity of the kind in the United Kingdom. We note that contributions of clothing and money are gratefully received by the association secretary, Mr. H. Thornhill Roxby, Church House, Dean's Yard, Westminster, London, S.W.

DUST REMOVAL AND A DIFFICULTY.

THE Marylebone borough council in its endeavour to fulfil its duty by removing the dust and refuse from a house in the Marylebone-road has met with a difficulty of an unusual character. Two women occupy respectively the basement and the ground floor, and to one of them the accumulation of dust is apparently due, but each denies that she is responsible for it. This, it might be supposed, would scarcely be of great importance as the council's dustman would remove the dust with impartiality to whichever it might be said to belong. There are, however, two ways by which it can be carried out to the dustcart, the one passing through the basement and the other along the ground floor, and each woman refuses to permit the dustman to take through her passage refuse which, she says, is due to her neighbour, although the one living on the ground floor will allow him to enter. The solicitor acting for the borough council has applied for a warrant, to which he is entitled if he proves a "refusal or failure to admit" to premises from which refuse ought to be removed, but Mr. Plowden has declined to interfere on the ground that the refusal has been not to admit but to permit to pass out. The last time the subject was mentioned in his court he proposed to send a constable "to show himself at the door," in the hope presumably that the minatory presence of a police officer would induce one or both of the recalcitrant occupiers to give way, and he seemed seriously to be of the opinion that his powers ended there, although inclined to be jocular in criticising the situation generally. If the difficulty has arisen through the borough council having failed to attach responsibility for the dust upon either of the strong-minded ladies who have resisted it, we can understand a temporary failure on its part to

¹ "Looking Back," THE LANCET, March 30th, p. 934.

which Sir Claude Macdonald excused the appointment of a foreigner by saying that he had been unable to find a British practitioner suitable for the post, and we further said that Dr. Wunsch's position was peculiar. Some 18 months have elapsed and the position, so far as we know, is unaltered. We now learn that the question will probably be raised in the House of Commons, and while we consider that an unregistered practitioner should not hold such a post as medical officer of an embassy we must not be taken to imply that Dr. Wunsch is in any way unfitted for the post so far as his professional knowledge is concerned. Whether it is right from a question of high politics that a foreigner should be practically a member of a staff under the British Foreign Office is not a matter upon which we have any knowledge to speak.

BAPTISM EXTRAORDINARY.

OUR Vienna correspondent forwards a story which many might be tempted to regard as a unique instance of religious bigotry. The circumstances were that at a hospital in Salzburg an operation had to be performed upon a woman in the third month of pregnancy. It was decided to induce abortion on account of eclampsia, but during the operation it was found necessary to remove the entire uterus. The nurse in attendance was a nun and she asked the surgeon to open the uterus before removing it and to baptise the fœtus. As the surgeon refused to do so she became very persistent, urging him to "abide by the laws of religion." At last an assistant made the ingenious suggestion that the baptismal water should be drawn up into a Pravaz syringe and then injected into the uterus, thus baptising the fœtus. This was accordingly done, the surgeon justifying his action by saying that "the conscience of the holy sister was thereby satisfied without anything being done to endanger the life or the prospects of the patient." A reference to a work that has long added to the gaiety of nations will prove that history has once more repeated itself, as witness these lines from the twentieth chapter of "The Life and Opinions of Tristram Shandy": "Madam, be pleased to ponder well the last line but one of the chapter where I take upon me to say, 'It was necessary I should be born before I was christened.' Had my mother, Madam, been a Papist, that consequence did not follow." And this statement the sly Sterne upholds in the following footnote: "The Romish Rituals direct the baptizing of the child, in cases of danger, before it is born; but upon this proviso, That some part or other of the child's body be seen by the baptizer:—But the Doctors of the Sorbonne, by a deliberation held amongst them, April 10th, 1733,—have enlarged the powers of the midwives by determining, That though no part of the child's body should appear,—that baptism shall, nevertheless be administered to it by injection,—*par le moyen d'une petite canulle*,—Anglicè *a squirt*.—'Tis very strange that St. Thomas Aquinas, who had so good a mechanical head, both for tying and untying the knots of school-divinity,—should, after so much pains bestowed upon this,—give up the point at last, as a second *La chose impossible*.—'Infantes in matris utero existentes (quoque St. Thomas!) baptizari possunt nullo modo.' O Thomas! Thomas!" The chapter finishes with a copy of the original French memoir presented to the reverend doctors by "un Chirurgien Accoucheur," and the weighty deliberations by which they felt themselves entitled to overturn the patristic authority. So scared, however, were these worthy prelates of a too hasty iconoclasm that they added this rider: "Dependant comme il s'agiroit, en autorisant la pratique proposée, de changer une règle universellement établie, le Conseil croit que celui qui consulte doit s'adresser à son évêque, et à qui il appartient

de juger de l'utilité, et du danger du moyen proposé, et comme, sous le bon plaisir de l'évêque, le Conseil estime qu'il faudroit recourir au Pape, qui a le droit d'expliquer les règles de l'église, &c." It would be hard to discover a stranger concurrence between religion and science and we can only hope that the evolution of modern thought will prevent the recurrence of a practice that appears equally discreditable to both.

ALCOHOL AND TRAFFIC ACCIDENTS.

THE recent occurrence of several railway catastrophes in which the fault has apparently lain with the human factor on whose integrity, however cunning be our mechanisms, we must in the last resort place our reliance, has drawn attention in a very forcible manner to the need of exercising a closer supervision than has hitherto been customary of the various conditions that may interfere with the nervous efficiency of persons in responsible charge of locomotive machinery. Of these conditions the use of alcohol is notoriously one of the most important, one of the most frequently operative, and one of the most controllable. Nowadays, with the high speed of railway travel and the increasing complexity of railroad systems, with the extension of the use of electric traction, and with the ever-growing numbers of motor omnibuses hurtling through our streets the appalling risks that may accrue from the intoxication of an engine-driver or a chauffeur are too obvious to need mention. But what is not so clear to the public mind is that, even when its effects fall far short of overdrunkenness, a too free use of alcohol exercises an influence on nervous function which is sufficiently serious to make a very questionable whether it should be allowed in such circumstances to men while actually engaged in such avocations. The researches carried out by Kraepelin and his pupils, and published in the "Psychologische Studien" edited by that distinguished alienist,¹ confirmed as they have been by the investigations of other observers, have, in fact, conclusively shown that, at all events in a large proportion of individuals, even relatively small doses of alcohol diminish very materially the extent and the accuracy of visual perception. When, for instance, series of letters, figures, and syllables are exposed for short periods of time to the eye of an observer who endeavours to identify them, it is found that the errors and still more the omissions, become much more numerous after the ingestion of even so moderate a quantity of alcohol as would be equivalent to little more than a pint of "four ale." With larger doses, of course, the disturbance of perception is proportionally more pronounced. When it is further borne in mind that, at the same time that it thus obscures the perceptions on which judgment is founded, alcohol also accelerates the motor impulses which translate that judgment into action, it is easy to see how much it may contribute, and doubtless very often has contributed, to the commission of fatal errors in the driving of an express train or a motor. With such evidence before us we need not incur the reproach of being teetotal faddists if we suggest that the drinking habits of chauffeurs and engine-drivers ought to be under stricter control, and that when the law requires that such persons shall not be under the influence of liquor, that time-honoured phrase should be interpreted in the sense of the experimental psychologist rather than in accord with the less exigent standard of the police constable. A correspondent whose communication has led us to make these remarks recognises that though the psychologist uses absolute alcohol in his experiments, yet he employs it in doses corresponding to those which the workman imbibes in his beer. We may conclude the consideration of a most important subject by quoting his own words. "In the

¹ Engelmann, Leipzig, 1896 et seq.

old, indeed, be that no "optician" should be permitted to set an "optical" defect until a certificate had been obtained from a medical practitioner that the defect in question was either increased nor complicated by disease. This is, in reality, the last word to be said upon the question; unless it be that, upon the whole, it would probably be better for a child to be left to struggle with his or her visual difficulties than that the correction of the defects by which these difficulties are produced should be committed to the hands of anyone incapable of dealing with them by the light of scientific and pathological knowledge.

A SIMPLE TEST OF THE PURITY OF CHLOROFORM.

CHLOROFORM is so easily decomposed by the action of air, light, and moisture that it is important for the surgeon to be able to verify its purity for himself. The decomposition of chloroform is always accompanied by the production of hydrochloric acid, but in the early stages of decomposition the presence of minute traces of the acid is not always detectable by silver nitrate. In a recent number of the *Revue Médicale* M. Breteau and M. Woog have described a simple test of the purity of chloroform. A small cylinder of elder pith is dyed in a saturated solution of Congo red in absolute alcohol and placed in the chloroform. If decomposition has only just begun this indicator serves to detect it by changing rapidly in colour from bright red to blue, owing to the presence of hydrochloric acid among the products of decomposition. We have tried this method and have found it to be extremely delicate. It can be recommended as an automatic indicator of the purity of chloroform, whether kept in a midwifery bag or in the shelves in a surgery. By dyeing the pith the chloroform does not undergo contamination with the colouring matter. A piece of the dyed pith should be put into a bottle of chloroform when it is first opened and kept there until the bottle is empty. It can be used over and over again so long as it remains bright red in colour. M. Breteau and M. Woog call attention to the danger of inclosing chloroform in ampoules or sealed glass bulbs, owing to the decomposition of traces of chloroform around the point where the glass is sealed. Each ampoule, they consider, should contain a minute plug of dyed elder pith in the glass stem to indicate the condition of the chloroform when it is required for use. The impurities may be removed by distilling the chloroform over lime or by shaking with caustic soda solution.

TUBERCULOUS MENINGITIS WITHOUT TUBERCLES.

At a meeting of the Société Médicale des Hôpitaux of Paris on March 15th M. A. Siredey and M. Tinel called attention to the fact that although tubercles of various forms anatomically characterise tuberculosis, yet in some cases they are absent. This is especially true of the tuberculosis of the central nervous system. Armand Delille has shown that the classical symptoms of tuberculous meningitis may be present and yet tuberculous granulations of the meninges may be absent. A diffuse bacillary infiltration, and even the tuberculous toxins, may provoke tuberculous meningitis. Though these facts are well known to experimental pathologists they often cause surprise to practitioners. Hence the interest of the following case. A boy, aged 16 years, was admitted into hospital comatose on Oct. 31st, 1906. He had been ill for a fortnight with headache and vomiting and gradually became comatose. Rigidity of the neck, photophobia, wasting, mydriasis, irregularity of the pulse, the meningeal streak, Kernig's sign, and lesions at the apices of the lungs left no doubt as to the diagnosis of tuberculous meningitis. Lambar puncture

showed marked lymphocytosis of the cerebro-spinal fluid and some polynuclear cells. The case ran the ordinary course, and death occurred on Nov. 11th. At the necropsy the most minute examination failed to show any tubercles on the meninges or in the cerebral cortex. To the naked eye the changes consisted in an intense congestion of the nervous centres of which the vessels were much distended. The meninges had lost their transparency and at several points showed a slight thickening with a milky tint, little pronounced. The meninges could be raised without tearing the adjacent cerebral substance. The subarachnoid space and the ventricles contained a notable quantity of liquid. The lungs showed diffuse tuberculous lesions, large granulations of the size of a lentil confluent in some places, disseminated in others. Microscopic examinations revealed numerous tubercle bacilli in these granulations. To the naked eye the kidneys showed nothing abnormal but the microscope disclosed little tuberculous nodules. Microscopic examination of the meninges showed a diffuse leucocytic infiltration without any tuberculous granulations. In some places the cells were agglomerated into little nodules, but nowhere was there a definite tubercle. The cases exactly corresponded to the type described by Delille as "diffuse leucocytic infiltration, predominantly perivascular, and with tendency to nodules." In no preparations could giant cells or caseous degeneration be seen—nothing suggestive of formation of tubercles. But a large number of tubercle bacilli was disseminated wherever there was leucocytic infiltration of the membranes. They were especially grouped around the blood-vessels, forming in certain places little agglomerations without modification in the form or grouping of the neighbouring cells.

PATENTS FOR CHEMICAL INVENTIONS.

It was recently pointed out in the columns of THE LANCET by a legal contributor that it is possible in this country to obtain patent rights in perfectly well-known chemical processes for the production of medicinal compounds. For example, a patent was granted last year in respect of the manufacture of eserine sulphite by the action of sulphurous acid on the alkaloid, although that process had been known for many years and is the one which any chemist would naturally use. The fault has been that the Comptroller of Patents, while compelled by the Patents Act of 1902 to have the records of previous specifications searched when a patent is applied for, has had no power to entertain an objection on the ground of want of novelty unless the process has actually been anticipated in a prior patent specification. This defect of the law will be remedied if the Patents and Designs Bill, introduced in the House of Commons by the President of the Board of Trade, is passed in its present form by Parliament. Clause 6 of the Bill enlarges the grounds of opposition to the grant of a patent by providing that an application may be opposed before the Comptroller on the ground "that the invention has been published in this country prior to the date which the patent would bear if granted." The Bill also contains a clause giving the Comptroller powers to demand the submission of samples in the case of patents for chemical inventions. The necessity for this clause has arisen from the fact that in the past some patentees have framed their specifications in such a way as to secure proprietary rights in whole classes of imaginary chemical processes and have not tried to make all the substances covered by the specifications. Trouble has subsequently arisen when real inventors have found their inventions shut out by one of these roving prior claims. So far as Mr. Lloyd-George's Bill tends to prevent the unfair assumption of

secure its object. We find it less easy to believe that Acts of Parliament and local by-laws which provide for the compulsory admission of scavengers or any other persons to places where it is desirable that they should go, do not thereby give them the power to pass out and complete the work for which they are admitted. Apart from the question arising out of the presence of two occupiers referred to above, Mr. Plowden can hardly mean that the ordinary householder can with safety admit the dustman to his premises and defeat the intention of the law by refusing to let him leave them carrying the dust. The *impasse* so created would resemble that suggested by the clergyman who, when he was told that the Prayer-book must be taken to forbid that which it did not in express terms order or permit, asked what then was to be done at a baptism, in regulating which the rubric directed him to "take the child into his hands" but said nothing about his giving it back. A divisional court should be able to solve the problem raised by Mr. Plowden's literal interpretation of the phrase employed should the point be brought before it by an appeal.

THE RELATION OF HOSPITALS TO THE EMPLOYERS' LIABILITY ACT.

IN the *Times* of April 8th an admirable letter appears from Mr. Michelli, secretary of the Seamen's Hospital, Greenwich, pointing out a way in which the new Workmen's Compensation Act may inflict a real injustice on our general hospitals. In repeating the substance of his letter we desire strongly to endorse his argument. It is quite obvious that all hospitals which treat accident cases have in the past restored to health quickly many injured working people who would otherwise have been for a prolonged period a charge upon employer or insurance company; it is equally certain that under the new Act the assistance thus rendered to the latter will be very materially increased and, at the expense of their supporters, the hospitals will save many thousands of pounds for employers of labour and insurance companies. Unfortunately, past experience has not shown that such impersonal, though none the less real, obligations are frequently taken to heart by those who should feel the responsibility of them, and the case upon which Mr. Michelli has based his letter shows no exception to the rule. It appears that a very large employer of labour in South-East London addressed an equally important insurance company suggesting that the latter should contribute to the Seamen's Hospital on the considerations that we have set down above. The appeal met with a flat refusal, based upon the ingenious argument that in fixing the premium to be paid by the firm "they had taken all existing circumstances into consideration"; this letter was written by order of the directors, who thereby tacitly acknowledged that in the conduct of their business affairs they considered themselves entitled virtually to appropriate a subsidy from the pockets of the charitable public. This begins ill enough, but worse remains behind, for—we quote Mr. Michelli's own words: "The hospitals will suffer most by the withdrawal of support that will follow the enforcement of the Act. Employers of labour who hitherto have contributed to the hospitals in recognition of services rendered to their employees are now notifying the withdrawal of their contributions, as they will have to provide for compensation under the Act, and they feel no longer any obligation (moral or otherwise) to support the hospitals." It would thus seem that the Act may prove a double-edged weapon to assail hospital treasures, and it will tax the resources of secretaries and committees to guard against it if those who have power to wield it do not temper might with right. Fair play undoubtedly demands

that each insurance company should pay towards the maintenance in hospital of men to whom compensation is due, for it is to meet medical and nursing expenses that such compensation goes when it is awarded to an individual who is treated in his own home. It will probably be a difficult task to get insurance companies as a whole to recognise the justice of this appeal, but something may be done by its being pointed out to individual members of their boards of directors, and this office we trust that some of our readers may, as opportunity occurs, take it upon themselves to carry out.

EPIDEMIC CEREBRO-SPINAL FEVER.

GLASGOW and Belfast continue to supply many cases of epidemic cerebro-spinal fever, but in most other localities where it has made its appearance the attacks are comparatively few. In London a recently published report by the medical officer of health of Stepney states that six cases have occurred in that borough during the last six weeks and that four of them have terminated fatally. Cases have also been reported at Salford in Lancashire, at Hanley and Tipton in Staffordshire, and at Oldbury in Worcestershire. In Glasgow there have been 61 deaths from the disease during the fortnight ended April 3rd, and on that day there were 110 cases under treatment. Cases have also been reported in Edinburgh, in Kilmarnock, in Dunfermline, and at various places in Aberdeenshire and Banffshire. In Belfast eight deaths occurred during the week ended April 3rd and on that day 40 patients were under treatment. On April 3rd the medical officer of health of Dublin stated that there had been no case of the disease in that city for a fortnight and that the total number in two months had been only 18.

CHILDREN'S SIGHT AND SPECTACLES.

AT a recent meeting of the subscribers to the Bristol Eye Hospital attention was called in the report to the amount of time devoted by the staff to the work of testing the eyes of school children, a work from which the committee desired to see its officers relieved. The publicity given to this desire has called forth a letter to the local papers from a correspondent named Dunscombe, who is possibly an optician, and who informs his readers that "none of the work complained of need go to the hospital; it is the work of the optician, and Bristol has qualified opticians capable of testing and correcting defects in vision, who would send all cases of disease and abnormality to the hospital, or an oculist, according to the circumstances of the person." It is difficult to imagine that this statement proceeds, as we would fain suppose, from honest ignorance. In children's eyes, especially in the large class which are tending to pass from hypermetropia into myopia, it is hardly possible to draw any line between disease and mere malformation; and the treatment required by the former has constantly to be combined with the optical aids called for by the latter. The attempt of opticians to obtain recognition of themselves, either from Parliament or by charter from the Privy Council, as persons qualified to "test sight," has so far failed; and it called forth from the General Medical Council an emphatic denial of the justice or validity of the claim. That body, in its report to the Privy Council on the subject, pointed out that "the admission of the petitioning opticians that 'where defective vision is due to other than optical conditions it should be treated by a duly qualified medical practitioner' was fatal to the rest of their contention, not only because, as a matter of fact, optical defects and diseased conditions constantly overlap and complicate each other but also because the latter cannot be either certainly recognised or certainly excluded by any but a medical practitioner." The natural corollary of the admission

guarantee of a true finding of the cause of death is clear from the ludicrous, and I trust exceptional, examples quoted before the Parliamentary committee—viz.: 1. "Death from stone in the kidney, which stone he swallowed when lying on a gravel path in a state of intoxication." 2. "Child, three months old, found dead, but no evidence whether born alive." It is believed that bodies are disposed of as still-born which are, in fact, those of live-born children, thus opening the door for crime, as the still-born are regarded by the law as non-existent. Again, the local registrar is appointed by one authority, controlled by another, and neither of these is the authority which appoints and pays the coroner. The local registrar is often unversed in medical terminology. Such a certified cause of death as the classical barbarism "angio-leucitis" might well overawe a local registrar, while it might also cover a case of blood poisoning, due to preventable cause. Then, again, the coroner's officer is an official unknown to the law and often little acquainted with medicine or law, yet he makes the delicate preliminary investigations on which the decision whether to hold an inquest or not is based. In some instances such officials have been found to be corrupt as well as uninformed. The percentage of reported cases in which inquests are held even in London varies from 90 in Westminster to 70 in a southern district of London. Even coroners are not always proficient in law and in medicine, though the London County Council in its recent appointments has endeavoured to secure men with the double qualification. As Lord Herschell once observed, "Certain legal and judicial qualities are essential to the efficient discharge of the coroner's duties. If you can find them pre-eminently in a medical man by all means appoint him; but I own I should no more expect to find them there than I should expect to find amongst my brethren of the bar one skilled in the diagnosis of disease." The Medico-Legal Society would therefore respectfully press upon your lordship that the law should be amended so that: (1) no human body, whether of one born alive or still, should be buried or otherwise disposed of without a certificate either by a competent medical man or by a coroner; (2) that such certificate should show the fact of death as well as its cause and also vouch for the identity of the deceased; (3) that specially qualified and independent medical men should be appointed as medical investigators or assessors to assist the coroner in preliminary inquiries, in scrutinising the causes of death, and in post-mortem examination; (4) that mortuaries with proper equipment for thorough investigation into the causes of death should be provided under the same authority as makes disbursements for inquests; (5) that the records of all such inquests should be public property; sixth and lastly, the society calls attention to an incidental advantage that should arise from such reforms—viz., the development of a school of medical jurisprudence in London worthy of the metropolis and associated with its University. This country has lagged behind France and Germany in the study and teaching of forensic medicine. The first work in English on the subject appeared in 1787, the first chair in Britain was founded at Edinburgh in 1801. Fodere, Orfila, and Tardieu had developed the science and Caspar in Germany had codified our knowledge in his classical work. By united effort and under improved administration a worthy school of forensic medicine should arise in London. We ask your lordship respectfully to give your best attention to these considerations. In turning over the pages of the autobiography of my kinsman, Sir Samuel Romilly, I alighted the other day on this passage: "Whatever just reforms are to be made in the civil and criminal jurisprudence of the country are wholly in the power of a Lord Chancellor." It is, my lord, because we fully realise the truth of that observation that we ask you, unlike your noble predecessors who, either from want of inclination or lack of opportunity, have left the Select Committee recommendations undealt with, to give your early and earnest consideration to securing a remedy for the unsatisfactory state of things which we have felt it our duty to lay before you.

The Lord Chancellor, in reply, promised to personally investigate the facts and to give his serious consideration to the whole matter laid before him.

MEDICINE AND THE LAW.

Dangerous Dogs and the Law.

RABIES has been stamped out in Great Britain by regulations which cause inconvenience to no one except those who are desirous of importing foreign dogs or who insist on dragging their pets about with them when they travel. Further advance towards securing the safety of those who do not keep dogs themselves has been made by two recent decisions in the King's Bench Division and by the publicity given to them. The first of these laid down no new version of the law, but only gave a final blow to a time-honoured superstition which has been kept alive by the catch-phrase to the effect that a dog is "entitled to his first bite." In the case in question a firm of dressmakers kept a Chow bitch in the garden behind their premises, which on the occasion complained of got into one of the workrooms and bit an apprentice. The county-court judge found as a fact from evidence before him that the bitch had a propensity to be vicious, either generally or when she had puppies (as she had at the time when she bit the plaintiff), and awarded damages accordingly, although there was admittedly no evidence that any one had been bitten by her before. In dismissing the defendant's appeal Mr. Justice Darling said that it was not necessary in such a case to show that the owner of the dog knew that it had already bitten someone or that it had in fact bitten someone. It was only necessary to prove knowledge by the defendant that the dog was likely to bite without provocation, either in particular circumstances or generally. Mr. Justice Lawrence concurred in this view and the same two judges a few days later, sitting with the Lord Chief Justice, had another case before them in which also a dog was concerned. On this occasion a man had been summoned for not keeping a "dangerous" dog under proper control, but the justices had refused to convict, after excluding evidence that the dog had been seen to kill lambs. The court, after referring to the case already mentioned, held that there was no reason why the word "dangerous" should have its meaning limited to danger affecting human beings and sent the case back to the magistrates to be further heard. These two decisions have, we believe, to some extent anticipated a private Bill dealing with dogs, the passing of which might have been postponed indefinitely, and they should have a wholesome effect if they cause those keeping vicious pets to consider their position. Hitherto many selfish people have been in the habit of disregarding the fears and even the remonstrances of their neighbours, secure in the knowledge that their dogs have not yet bitten anybody and being no doubt also of the opinion that the "first bite" would not be inflicted on their own persons.

Experiments as Legal Evidence.

Inquest juries repeatedly have to take refuge in a self-evident "open verdict" in cases where there is insufficient evidence adduced to enable them to decide whether the deceased met his death by an accidental or a homicidal act, the latter, of course, including an act of self-slaughter. The evidence of eye-witnesses of the fatal deed is rare, so that the decision rests on the balance of probabilities. Where the inquest closes the matter little harm is done by returning either an open or a definite verdict, but where proprietary claims may follow upon the death greater care is needed in arriving at or near the truth. Then the opinions of expert witnesses may be heard for what they are worth. Now an expert witness is one who poses as an authority on a given subject from the fact that he has devoted considerable time and study to that particular theme, and usually he has qualified to bear technical testimony by having made many personal tests and experiments bearing on the matters in dispute. The case of *Thackman v. The Brotherhood of American Yeomen*, recently tried in the North-Western courts of the United States of North America, gives an instance where previous experimentation by a witness was allowed to give him a status in court as one able to throw light upon a disputed cause of death. The action was on a mutual benefit certificate under which a claim was made but contested by the defendants on the ground that the assured deceased had put an end to his own life. It appeared that the deceased was seen to go into a barn to get his team; he was discovered an hour later dead, being asphyxiated by the neck from a tie strap attached to a bridle which was hanging on a peg whereon the deceased usually

LONDON TEMPERANCE HOSPITAL.—H.R.H. Princess Louise, Duchess of Argyll, has consented to open the new out-patient hall of the London Temperance Hospital on Tuesday, May 14th next.

proprietary rights in chemical processes and products which are of medicinal value, it will command the approval of the medical profession. The Bill does not affect so-called "patent medicines," which are rarely made under Letters Patent, but it may reduce to some extent the number of proprietary foreign-made synthetic remedies with which the drug market in this country is flooded at the present time.

THE next meeting of the Northern and Midland division of the Medico-Psychological Association of Great Britain and Ireland will be held, by the courtesy of Mr. F. Perceval, at the Lancashire County Asylum, Prestwich, near Manchester, on Thursday, April 18th, at 2.30 P.M. Dr. Bedford Pierce of York is the honorary secretary of the division and communications should be made to him.

His Grace the Duke of Northumberland, K.G., President, is to preside at the annual dinner of the Royal Sanitary Institute to be held at the Langham Hotel, London, on Wednesday, May 15th.

DEATH CERTIFICATION AND THE AMENDMENT OF THE CORONERS ACTS.

In our issue of March 30th we mentioned that the Lord Chancellor had received a deputation from the London County Council and the Medico-Legal Society. Mr. H. T. Anstruther, chairman of the London County Council Public Control Committee, represented the former body, and Sir William Collins, M.P., a former President of the Medico-Legal Society, represented the latter. We now print below the abstract of recommendations handed in to the Lord Chancellor by Mr. Anstruther, and the speech upon the points in question delivered by Sir William Collins, and we comment upon the proceedings in a leading article which appears at p. 1027:—

MR. ANSTRUTHER'S REPORT.

Notes on Council's Resolutions of 30th October, 1906.

Deputations from the Council attended before previous Lord Chancellors upon this subject in February, 1895, and November, 1896. On the first occasion Sir G. Harrie and Dr. (now Sir William) Collins addressed Lord Herschell. On the second occasion Mr. Haydon and Dr. Collins addressed Lord Halsbury. The Council has had ample opportunity for obtaining a knowledge of the subject. It is the only local authority in London with any jurisdiction in connexion with the holding of inquests. With certain exceptions, applying to about one-twentieth of the London area, the appointment of London coroners is vested in the Council. Their salaries and other inquest expenses are paid by the Council, and the Council has to provide coroners' courts and arrange coroners' districts. These important functions have been carried out for 18 years, and the relation of these questions to the needs of London to-day as compared with the position in 1889 when the Council was first charged by Parliament with the duties, show that the Council's proposals are founded on experience. They are also based on an examination of admittedly better conditions and systems prevailing elsewhere.

Notes on the Earlier Recommendations.

The Council has linked this subject with that of death certification. It is almost impossible to separate them and the Council in its conclusions has been largely assisted by the labours of the Death Certification Committee of the House of Commons of 1893. With the recommendations of that Committee the Council is in general agreement, and has incorporated in its scheme such of the recommendations as appear to bear directly upon the question of coroners' inquests. The report of the Inter-departmental Committee on Physical Deterioration also included one or two valuable suggestions having a connexion with coroners' inquests, and these have also been embodied in the Council's proposals. It has been suggested that there should be a dual delegation of duties in connexion with death certification: one to the registrar as at present but merely for the collation of vital statistics; the other to the coroner who should have cognisance of all deaths and himself select those needing inquiry. The Council has not felt justified in advancing this view but it seems only fitting to refer to it. There is no doubt that the machinery which should insure notice to the coroner of the cases contemplated by the statute is very imperfect, and there is a strong suspicion founded upon very substantial grounds that many cases escape notice which, if they had been notified, would assuredly have formed the subject of an inquest.

Notes on Individual Recommendations.

Recommendation 9.—When a proper medical certificate is wanting, the medical man concerned, or the relations and friends of the deceased, should be required to report the case direct to the coroner. It appears clear that every such case should, without delay, come under the cognisance of the coroner.

Recommendation 10 deals with cases of death after surgical operation. Both in the interests of the public and medical profession, such cases should automatically come to the notice of the coroner, though, of

course, not necessarily with a view to an inquest being held in all such cases.

Recommendation 11 is perhaps the most important of the Council's recommendations—viz., that medical investigators should be appointed to inquire into the cause of all uncertified deaths. The medical investigator the Council has in contemplation would be a highly qualified medical man, skilled in pathological work, and having no personal interests in private practice. One of the chief defects of the present system is in connexion with the preliminary inquiry, upon which depends the coroner's decision as to whether or not an inquest should be held. Legally speaking, the decision rests with the coroner, but in London at least, the cases reported to the coroner are so many that the collection of the facts upon which the coroner arrives at his decision is made by the coroner's officer, who is usually a police constable, and is also an officer unknown to the law. It is no exaggeration to say that these men are entirely without qualification for so important a duty.

When the Council first dealt with this work it had to take very strong measures with regard to certain of the coroners' officers, against whom the gravest irregularities were charged and proved. This fact is an additional argument for the assumption that in the preliminary work the coroner should have the assistance of skilled professional gentlemen, whose probity would be above question. The present medical assistance on which a coroner can count without reference to the authority which checks his disbursements is very restricted. Sections 21 and 22 of the Coroners Act of 1837, which deal with medical witnesses and their fees, are virtually a repetition of powers first provided in an Act of William IV. passed in 1834. The provision that may have met the needs of that time is now quite inadequate. Moreover, a coroner can only avail himself of it after the commencement of inquest proceedings, and never as an assistance in deciding whether or not an inquest is necessary. Even then it fails to insure that the medical assistance shall be sufficient for the coroner's purposes.

The Council has already had experience of a better system. It cannot authorise the spending of money in medical fees beyond the amounts prescribed in the Coroners Act of 1837, but a number of highly qualified medical gentlemen attached to London hospitals and skilled in pathological work have undertaken to carry out post mortem examinations in special cases at the ordinary fees. A panel has been formed of their names, so that London coroners may, in cases of difficulty, avail themselves of this valuable assistance. The experiment is, however, unequal in its application, incapable of application to the necessities of London as a whole, and only of assistance to the coroner when he has decided to hold an inquest. It does not assist him in the detection of cases that call for inquiry where there may be reason to suppose that the relatives of the deceased, and possibly in some cases the medical attendant, may wish to avoid publicity. Yet if the coroners' work is to be a reality (and not a sham) it is obvious that all cases should receive competent investigation and that the preliminary stages of inquiry are as important as open court proceedings.

Sir WILLIAM COLLINS said: My Lord, on the two previous occasions, to which allusion has been made by Mr. Anstruther, I have had the honour of voicing deputations to your lordship's noble predecessors on behalf of the London County Council; on this occasion, while generally endorsing the views which have just been laid before your lordship, I appear on behalf of the Medico-Legal Society, as a former president of that society. The Medico-Legal Society was established "to promote the advancement of medico-legal knowledge in all its branches." As a learned society it usually restricts its operations to debate and the discussion of papers, but it felt so strongly on the question now under consideration that it has deemed it its duty to take executive action. On July 25th, 1906, the society passed the following resolution:—

That the present methods of ascertaining the fact and cause of death are imperfect, constitute grave public danger, and call for early legislation with a view to amelioration of the law.

The present system we hold to be imperfect in two respects. Firstly, it is too limited in its purview, it only deals with reported cases, there being no security that among unreported cases, and indeed even among some certified cases, that there are not included deaths due to other than natural causes. Secondly, in cases that do come within the scope of the existing system its efficiency is impaired by the machinery employed, by the multiplicity of jurisdictions involved, with the result that the most painstaking and precise investigations are often applied where they are the least and not where they are the most required. The revelations made by the Death Certification Committee of 1893 exposed a public scandal which has remained for 14 years unredressed. The percentage of certified to total deaths varied from 1.2 per cent. in London to 8.5 in North Wales and (though the Scotch system is, of course, different) to 42 per cent. in Inverness-shire.

THE LORD CHANCELLOR: 42 per cent. What is the explanation?

Sir WILLIAM COLLINS: Yes; the Select Committee regarded it as astounding, but I have verified their report to-day. Possibly it is due to the scattered population finding it difficult to get a medical man within reach. Then the present form of death certificate requires only the cause and not the fact of death to be vouched for, and cases are not unknown in which the certified "deceased" is still in the land of the living. That a coroner's inquest is no certain

fever occurred in Glasgow and two in Edinburgh; and two of the three deaths from measles in the latter city. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 155, 147, and 123 in the three preceding weeks, further declined last week to 109, and were 33 below the number in the corresponding period of last year. The causes of 25, or 3·7 per cent., of the deaths registered in the eight towns during the week were not certified; in the 76 English towns the proportion did not exceed 0·8 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been 22·3 and 24·3 per 1000 in the two preceding weeks, further rose to 28·3 per 1000 in the week ending April 6th. During the 13 weeks ending March 30th, the death-rate averaged 27·2 per 1000, the rates during the same period being 19·2 in London and 19·6 in Edinburgh. The 212 deaths of Dublin residents registered during the week exceeded by 30 the number in the previous week, and included 15 which were referred to the principal infectious diseases, against 12 in each of the two preceding weeks; of these eight resulted from whooping-cough, three from measles, three from diphtheria, and one from "fever," but not any from small-pox, from scarlet fever, or from diarrhoea. These 15 deaths were equal to an annual rate of 2·0 per 1000, the death-rate last week from the principal infectious diseases being 1·9 in London and 2·4 in Edinburgh. The eight deaths from whooping-cough exceeded the number recorded in any previous week of this year; the deaths from diphtheria also showed an excess over the numbers in recent weeks; while the mortality from measles and from "fever" was slightly lower than it had been in the preceding week. The 212 deaths from all causes included 32 of children under one year of age and 50 of persons aged upwards of 60 years, each of these numbers being six in excess of the corresponding number in the preceding week. Seven inquest cases and four deaths from violence were registered; and 97, or nearly 45 per cent., of the deaths occurred in public institutions. The causes of five, or 2·4 per cent., of the deaths in Dublin last week were not certified; in London all the causes of death were duly certified, while in Edinburgh the proportion of uncertified deaths was as much as 4·1 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Deputy-Inspector of Hospitals: W. Tait, to Hong-kong Yard. Staff Surgeons: A. E. Kelsey, to the *Diadem*, on recommissioning; and W. J. Codrington, to the *Isis*, on commissioning.

ROYAL ARMY MEDICAL CORPS IN INDIA

Lieutenant-Colonel D. O'Sullivan, on reversion from the 9th Secunderabad Division, is appointed to the command of the Station Hospital, Rawalpindi. Lieutenant-Colonel F. H. Treherne is appointed to the command of the Station Hospital, Sialkot. Major N. Tyscke to the command of the Station Hospital, Dalhousie. Captain L. W. Harrison to medical charge of Headquarters Staff and establishments, Northern Command. The following bill station appointments have been approved for the summer season of 1907: Major O. R. A. Julian, to command Station Hospital, Oherat; Captain J. M. H. Conway, to command of the Station Hospital, Kalabagh; Captain R. L. Argles, to command of the Station Hospital, Khya Gali; Captain R. Storrs, to command of the Station Hospital Camp, Barian; Lieutenant-Colonel D. M. O'Callaghan, to command of the Station Hospital, Kuldanna; Major H. N. Dunn, to command of the Combined Station Hospital for Khanspur and Ghora Dhaka; Captain W. D. O. Kelly, to command of the Station Hospital, Upper Topa; Lieutenant W. Benson, to command of the Station Hospital, Lower Topa; Lieutenant J. A. Turnbull, to command of the Station Hospital, Bara Gali; Major G. St. C. Thom, to command of the Station Hospital, Solon. The following officers have been granted leave: Captain W. F. Tyndale, on private affairs for seven months; Lieutenant-Colonel C. G. Reilly, for six months on medical certificate pending retirement; Lieutenant-Colonel B. L. Mills, seven months on private affairs; Lieutenant-Colonel A. L. F. Bate, seven months on private affairs; Captain W. M. Power, three months privilege in India; Captain

B. H. V. Dunbar, six months on private affairs; Major L. A. Mitchell has been granted extension of sick leave to August 18th, 1907. Lieutenant-Colonel M. B. Skinner, M.V.O., on arrival from England will be posted to Nowshera and appointed to the command of the Station Hospital there. Lieutenant-Colonel P. O. H. Gordon is transferred from Secunderabad to Burma Division, Lieutenant G. Ormrod from Eastern Command to Burma Division, Captain J. F. Whelan to Aden for duty in the Station Hospital, Captain J. W. Seccombe from Rawalpindi to Ambala for charge of Brigade Laboratory, Lieutenant-Colonel J. R. Stuart from Mount Abu to Neemuch, Captain E. W. Powell from Poona to Kirkee, and Lieutenant O. D. M. Holbrook from Kirkee to Poona.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant James O. Herbertson to be Surgeon-Captain (dated March 19th, 1907).

CHANNEL ISLANDS MILITIA.

The Royal Militia of the Island of Jersey.—Staff: Surgeon-Major W. Falla, Principal Medical Officer, to be Surgeon-Lieutenant-Colonel (dated Feb. 6th, 1907).

HONOURABLE ARTILLERY COMPANY OF LONDON.

Surgeon-Lieutenant-Colonel R. J. Beece is granted the honorary rank of Surgeon-Colonel (dated March 7th, 1907).

IMPERIAL YEOMANRY.

Fifeshire and Forfarshire: Alan Leonard Smith Take to be Surgeon-Lieutenant (extra) under the conditions of paragraph 28, Imperial Yeomanry Regulations (dated Feb. 27th, 1907). Worcestershire (the Queen's Own Worcestershire Hussars): Surgeon-Captain J. H. Bellby resigns his commission (dated Feb. 28th, 1907).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Ayrshire and Galloway: John Aitken to be Surgeon-Lieutenant (dated March 15th, 1907).

Rifle: 4th Volunteer Battalion the Queen's (Royal West Surrey Regiment): Charles Spencer Palmer to be Surgeon-Lieutenant (dated Feb. 15th, 1907). 2nd Volunteer Battalion the King's (Liverpool Regiment): Supernumerary Surgeon-Captain J. G. Martin (on ceasing to do duty with the Liverpool Bearer Company, Royal Army Medical Corps (Volunteers), is absorbed into the establishment (dated Feb. 1st, 1907). 8th (Scottish) Volunteer Battalion, the King's (Liverpool Regiment): The undermentioned officer resigns his commission: Surgeon-Captain W. S. Henderson (dated Feb. 15th, 1907). 5th Volunteer Battalion the Royal Scots (Lothian Regiment): Surgeon-Major J. Mill to be Surgeon-Lieutenant-Colonel (dated Feb. 20th, 1907). 1st Volunteer Battalion the Royal Warwickshire Regiment: Surgeon-Captain O. Y. Flenwith resigns his commission (dated March 6th, 1907). 1st Volunteer Battalion the Royal Fusiliers (City of London Regiment): Surgeon-Lieutenant-Colonel H. G. Thompson (Brigade Surgeon-Lieutenant-Colonel, Senior Medical Officer, Royal Fusilier Volunteer Infantry Brigade) is granted the honorary rank of Surgeon-Colonel (dated March 4th, 1907). 2nd Volunteer Battalion the Duke of Cornwall's Light Infantry: Surgeon-Major and Honorary Surgeon-Lieutenant-Colonel W. Nettle to be Surgeon-Lieutenant Colonel (dated July 3rd, 1906). 19th Middlesex (St. Giles's and St. George's-Bloombury) Volunteer Rifle Corps: Surgeon-Lieutenant W. F. Roe to be Surgeon-Captain (dated March 9th, 1907).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Scottish Command, Glasgow Companies: Captain D. Christie resigns his commission (dated March 14th, 1907); David Shannon to be Lieutenant (dated March 15th, 1907).

THE REGULATIONS FOR THE EXAMINATION OF CANDIDATES FOR ADMISSION TO THE INDIAN MEDICAL SERVICE.

Revised regulations for the examination of candidates for admission to His Majesty's Indian Medical Service have been issued, one of the principal alterations being a change in the list of subjects under Item 6 which formerly read "Chemistry and Pharmacy, with either Botany or Zoology." It now reads "Materia Medica, Pharmacology, and Toxicology." The maximum number of marks—namely, 600—remains unaltered.

THE COURSE OF INSTRUCTION FOR NAVAL SURGEONS AT HASLAR.

The course of instruction for surgeons of the Royal Navy at Haslar was brought to a close on April 5th, when the

hung his harness. Everything pointed to death from suicide. A witness, however, came forward and offered to narrate the results of some experiments he himself had made. In physical build he was about the same height and weight as the deceased. He stated that he had fixed the bridle and the strap just as it had been placed before the fatal occurrence, he had then walked towards them and just before reaching them he had deliberately stumbled and fallen, so that his neck was caught in the loop; he would have choked had he been unable to regain his balance at once. He repeated this experiment with the same result three times out of four attempts. The court held that this testimony was admissible as showing how death might have occurred.

American Tinned Provisions.

Mr. D. L. Thomas, medical officer of health of the borough of Stepney, in giving evidence at the Thames police court recently in support of a summons for selling unsound condensed milk, informed the magistrate that about 75 per cent. of the tinned foodstuffs imported from America are consigned without labels. This means that whatever information may afterwards be afforded by the label upon the tin is affixed by the firm selling it, with whom it rests whether the statement shall be accurate or not. As an American firm enjoying a high reputation and anxious to maintain it would probably insist upon its distinctive label appearing upon all its goods, the inference would seem to be that a large proportion of the tinned provisions imported from the United States are not of the highest quality, and also it may be conjectured that they are not sold as American products.

Looking Back.

FROM

THE LANCET, SATURDAY, April 11th, 1829.

COMMUNICATION OF HYDROPHOBIA FROM RABID SHEEP TO OTHER ANIMALS.

SOME very interesting experiments have lately been made at the veterinary school at Alfort, with respect to the above subject. Two sheep, belonging to the flock of M. Yoart, having been bitten by a dog, which soon afterwards died with the symptoms of confirmed hydrophobia, and having, about a month afterwards, evinced all the signs of rabies, a horse, a dog, and two sheep, apparently in perfect health, were inoculated with their saliva; the skin was in several places slightly scarified, and the saliva applied to the wounds; at the same time the four animals were left in constant contact with the two rabid sheep, which died on the fourth day after the first symptoms of rabies. A few hours previous to the death of one of them, a dog and a lamb were inoculated with its saliva.

Four months after the experiment, none of the six inoculated animals had exhibited any symptoms of the disease; it is accordingly more than probable, that the disease cannot be communicated from sheep to other animals.

From the description of rabies in sheep, as observed in the above cases, it appears, that it is not accompanied by the dread of water, and that, therefore, in these animals, as well as in dogs, it is improperly called hydrophobia.—*Magendie's Journal.*

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8269 births and 5492 deaths were registered during the week ending April 6th. The annual rate of mortality, which had been equal to 16·8 and 17·7 per 1000 in the two preceding weeks, further rose to 17·9 per 1000 during the week under notice. During the 13 weeks ending March 30th the death-rate in these towns averaged 19·0 per 1000, the rate in London during the same period being 19·2 per 1000. The lowest rates last week in the 76 towns were 6·3 in Handsworth (Staffs), 7·0 in Hornsey, 9·1 in Croydon, and 11·1 in East Ham; among the other towns the highest rates were 24·4 in Grimsby, 24·5 in Portsmouth, 24·6 in Birkenhead, 24·9 in Oldham,

and 27·7 in Wigan. The 5492 deaths in the 76 towns showed an excess of 43 over the number in the preceding week, and included 568 which were referred to the principal infectious diseases, against 468 and 559 in the two preceding weeks; of these, 251 resulted from measles, 170 from whooping-cough, 59 from diphtheria, 36 from scarlet fever, 34 from diarrhoea, and 18 from "fever" (principally enteric), but not any from small-pox. No death from any of these epidemic diseases was registered in Bournemouth, Devonport, Wolverhampton, Coventry, York, South Shields, or Tynemouth; the annual rates from these diseases, however, ranged upwards to 5·4 in Hanley, 5·5 in Portsmouth, 7·9 in Birkenhead, 8·5 in St. Helens, and 8·9 in Grimsby. The 251 fatal cases of measles were 18 in excess of the number in the preceding week, the highest annual rates therefrom being 4·1 in West Hartlepool, 4·3 in Portsmouth, 5·1 in St. Helens, 5·2 in Grimsby, and 7·0 in Birkenhead. The 170 deaths referred to whooping-cough showed a decline of five from the number in the preceding week, the rate from this disease, however, ranging upwards to 1·8 in Salford and Preston, 2·1 in Willesden, 2·7 in Bury, and 3·0 in Grimsby. The 59 deaths from diphtheria also showed a further decline from the numbers in recent weeks, the highest proportional mortality being recorded in Sunderland and Gateshead. The fatal cases of scarlet fever, of "fever," and of diarrhoea were not excessive in any of the 76 towns. No case of small-pox has been under treatment in the Metropolitan Asylums Hospitals since the end of June last. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which in the 14 preceding weeks had uninterruptedly declined from 3846 to 2657, had risen again to 2666 at the end of last week; 352 new cases were admitted during the week, against 327, 312, and 330 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 403, 353, and 354 in the three preceding weeks, rose again last week to 412 and were 99 in excess of the corrected average number in the corresponding week of the previous five years. The 17 deaths referred to influenza in London were four below the corrected average. The causes of 44, or 0·8 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London, Leeds, West Ham, Newcastle-on-Tyne, Salford, Leicester, and in 47 other of the 76 towns; the proportion of uncertified deaths, however, showed a marked excess in Liverpool Birmingham, Sheffield, Bristol, Bradford, Portsmouth, Reading, and Warrington.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 20·6 and 20·3 per 1000 in the two preceding weeks, further declined to 19·4 per 1000 in the week ending April 6th, but was 1·5 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 12·9 Paisley and 16·1 in Aberdeen and in Greenock to 21·9 in Glasgow and 24·0 in Perth. The 673 deaths in the eight towns showed a decline of 33 from the number in the preceding week, and included 114 which were referred to the principal epidemic diseases, against 100, 102, and 107 in the three preceding weeks. These 114 deaths were equal to an annual rate of 3·3 per 1000, which exceeded by 1·5 per 1000 the rate from the principal epidemic diseases in the 76 English towns; they included 48 which were referred to "fever," 40 to whooping-cough, 14 to diarrhoea, five to diphtheria, four to scarlet fever, and three to measles. The deaths referred to "fever," which had been 48 and 39 in the two preceding weeks, which had been last week to 48, and included 32 in Glasgow, rose again last week to 48, in Leith, two in Dundee, seven in Edinburgh, six in Leith, two in Dundee, and one in Aberdeen; 29 of these "fever" deaths in Glasgow, six in Edinburgh, five in Leith, and the two in Dundee were certified as cerebro-spinal meningitis. The 40 deaths in the three preceding weeks, increased last week to 40, of which 31 occurred in Glasgow, three in Edinburgh, three in which 31 occurred in Glasgow, three in Edinburgh, and two in Aberdeen. Eight of the 14 deaths from diarrhoea were registered in Glasgow, three in Dundee, and two in Edinburgh. The five fatal cases of diphtheria included four in Glasgow; two of the four deaths from scarlet

having been discovered not generally known to the majority of practitioners which it is desirable should be published for their benefit.

The vast majority of medical men accept the influence of alcohol as a drug, but I believe an increasing number who have given much attention to the subject believe, perhaps wrongly, that its influence in health is always in some degree prejudicial; that the craving for the drug is so easily formed and so powerful when established that it is advisable under all circumstances to confine its action to therapeutic needs only. It should also be remembered that the ordinary medical specialist, unless his practice is confined to alcoholic cases, has less clinical experience than the general medical practitioner, as the latter sees at least as many patients and can study the effects of alcohol by observing altered personal states under the influence of the drug in individuals whom, as the family practitioner, he has known for years.

In common, therefore, with many other medical men I should be glad to know in what respects recent investigations by research students, such as Mott, Ballantyne, Kraepelin, &c., have been modified by still newer work from the following points of view: (a) in relation to experiments (German and American) which seemed to establish the facts that alcohol in quite moderate doses diminishes mental activity; (b) that in physical training it is diminishingly used; (c) that in tropical, arctic, and military expeditions its use as a beverage is being given up; (d) that histological studies, particularly of the nervous system, seem to have proved that its action is deleterious; (e) to show that its resemblance to progressive dementia, in the symptoms that it gives rise to, is not pathological; (f) in view of recent facts discovered in relation to heredity and alcohol to produce convincing evidence to the effect that alcohol does not injure germinal tissue and is not prejudicial to the pregnant and nursing woman; (g) to consider recent insurance statistical evidence which supports the contention that abstainers are long-lived; and (h) to explain why, if alcohol is beneficial in small doses, it has been so largely abandoned in surgery.

I feel sure that many medical men would welcome specific scientific information on each of these points, but opinions without data are justly felt to be valueless and derogatory to medical reputation, if they are not, indeed, morally indefensible.

With many apologies for the length of this letter,

I am, Sirs, yours faithfully,

Willesden Green, N.W., April 5th, 1907. J. LIONEL TAYLER.

To the Editors of THE LANCET.

SIRS.—As you have given publicity to the opinion of 16 medical men upon the value of alcohol in diet and medicine it may interest your readers to peruse certain statements signed by the highest medical authorities of a former generation. In 1839 Mr. Julius Jeffreys, himself a medical man, obtained the signatures of 78 distinguished members of the medical profession to a declaration which is in curious contrast to the statement recently published. The declaration said:—

An opinion handed down from rude and ignorant times, and imbibed by Englishmen from their youth, has become very general, that the habitual use of some portion of alcoholic drink is beneficial to health, and even necessary to those subjected to habitual labour. Anatomy, physiology, and the experience of all ages and countries when properly examined must satisfy every mind well-informed in medical science that the above opinion is altogether erroneous.

Among the 78 signers of this declaration were Sir Benjamin Brodie, Dr. W. F. Chambers, Sir James Clarke, Barnaby Cooper, Sir J. Eyre, Dr. R. Fergusson, Dr. Marshall Hall, Herbert Mayo, Dr. John Hope, O. A. Kaye, Dr. R. Lee, Richard Quain, R. Trevors, and Drs. Andrew and Alexander Ure.

In 1847 a declaration, drawn up by three eminent medical men, ran as follows:—

We, the undersigned, are of opinion 1. That a very large portion of human misery, including poverty, disease, and crime, is induced by the use of alcoholic or fermented liquors as beverages. 2. That the most perfect health is compatible with total abstinence from all intoxicating beverages whatever, in the form of ardent spirits, or as wine, beer, ale, porter, cider, &c., &c. 3. That persons accustomed to such drinks may, with perfect safety, discontinue them entirely, either at once, or gradually after a short time. 4. That total and universal abstinence from alcoholic liquors and beverages of all sorts would greatly contribute to the health, the prosperity, the morality, and the happiness of the human race.

A column of THE LANCET would not contain the names

of the eminent medical men who signed this declaration, which was also subscribed by nearly 2000 medical men in the United Kingdom and India. 60 years have passed since the latest of these declarations was issued, and in that interval comparisons of various kinds have been instituted between moderate drinkers and abstainers as to rates of mortality and sickness; and it may be averred with confidence that all such comparisons have resulted in favour of abstinence and not of moderate drinking. The statement of the 16 medical men is in opposition to all the data which have been accumulating since the origin of the temperance reform, and, in effect, it takes us back to those "rude and ignorant times" in which, according to the declaration of 1839, the opinion of the 16 originated. The former part of their statement deals with the use of alcohol in disease and might have been written had no London Temperance Hospital been at work for 33 years, the experience of which it ignores. That alcohol, like other drugs, may have a use in particular conditions of disease is not denied, but it is impossible reasonably to claim for it the value placed upon it by the 16 advocates in face of the facts—first, that the visiting staff of the London Temperance Hospital, being free to prescribe it when deemed needful, have only done so in the case of 80 patients out of the 26,000 who have passed through the wards of the hospital; and, secondly, that the statistics of the London Temperance Hospital as to the rate of mortality and the proportion of recoveries compare favourably with those of other general hospitals.

I am, Sirs, yours faithfully,

DAWSON BURNS, D.D.,

Honorary Secretary of the London Temperance Hospital.

April 5th, 1907.

To the Editors of THE LANCET.

SIRS.—On March 30th you published a letter signed by a small group of members of the medical profession advising the public (1) to use alcohol as a drug, and (2) all adults (by the way, why not children too?) to usually drink it as an article of daily diet. The gravity of medical men giving such advice in view of the national issues involved cannot, of course, be over-stated, but the responsibility concerns the signatories only; the wisdom of following their advice, however, concerns the public and depends upon the proofs which the signatories rely upon in support of their position. These should be: 1. Experimental. But they offer none; not a single atom of evidence do they give in support of any one of their statements. 2. Statistical. But they are not statistical, for their assertions are directly contradicted by the returns of the Registrar-General and the life assurance societies. 3. Practical. But they cannot be practical, as the diminished mortality of the London hospitals shows, in spite of the enormous reduction in their alcohol bills. 4. Sociological. But they are certainly not sociological, whatever else they may be, as the report of the Physical Deterioration Committee teaches us. 5. Consensus of medical opinion. But the consensus of medical opinion lies precisely the other way, as the petition from over 14,000 of the medical profession in favour of the teaching of hygiene and temperance to the coming generation shows. 6. The support of the "leaders" of the profession; but this they have been unable to obtain, as in spite of widespread and urgent canvassing their letter is signed by only 16 medical men, one of whom has since written to explain that his signature was only secured by a breach of faith. 7. The weight to be attached to the names of the signatories themselves. As this personal factor is unfortunately the only guarantee they offer for their advice, it must, however reluctantly, be carefully analysed. Perhaps the least objectionable manner in which this point may be approached is to show what qualifications the names ought to possess in order to give them the necessary weight in the balance. First, being so few in number they should, without exception, be members of the front rank of the profession who are actively engaged in scientific or literary research into all aspects of the alcohol question; second, they should show in these days of "brewery shares" that they are peculiarly disinterested in the question; and thirdly, they should be able to demonstrate that there is no risk of a "moderate" use of alcoholic beverages (by the way, what quantity is "moderate"?) ever leading to the habit of incipient intoxication. Until they offer proofs in satisfaction of the foregoing points it would certainly appear that the only common-sense course for the lay public to adopt is to regard (or rather

prizes were distributed. The gold medal was awarded to Surgeon W. H. Hastings of University College, the microscope to Surgeon S. F. Dudley of St. Thomas's Hospital, and the silver medal and books to Surgeon J. L. Barford of King's College. The names of the candidates, two of whom had university degrees, with the marks gained at the entrance examination and at the Haslar course, are subjoined:—

	Marks.		Marks.
W. H. Hastings	4660	W. W. D. Chilcott	3395
S. F. Dudley	4485	J. O. F. D. Vaughan	3792
J. L. Barford	4341	W. F. Archibald	3535

NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on April 9th, with Mr. O. I. Thomas, O.B., Secretary of the Admiralty, in the chair, the sum of £75 was distributed among the several applicants. Mr. G. W. Perrin was appointed secretary to the fund, vice Mr. P. Francis resigned.

THE INSPECTOR OF MEDICAL SERVICES.

The April Army Orders, issued by command of the Army Council, contain the following:—

75. *King's Regulations (Amendments).*—The following new paras. will be inserted after para. 183b:—

The Inspector of Medical Services.

183c. The Inspector of Medical Services will report on:—(a) The physical and sanitary efficiency of the forces, and on any precautionary or remedial measures relating to barracks, encampments, garrisons, stations, hospitals, diet, dress, drills, duties, &c., which may, in his opinion, conduce to the preservation of the health of the troops and the mitigation or prevention of disease. (b) The medical examination and physical training of recruits, both at depôts and with units, and whether the gymnasium courses, drills, duties, &c., subject the men to undue strain. (c) The methods of medical administration in districts and commands, with a view to establishing a uniform system throughout the army. He will also inspect military hospitals and visit transports and hospital ships.

183d. He will report on the adequacy of the sanitary instruction afforded to the army, and also on schools of instruction (including garrison schools) and courses of instruction conducted by the R.A.M.C.

183e. He will inspect the R.A.M.C. and general medical stores (including the store at Woolwich) and will report whether all ranks are thoroughly acquainted with their duties in connexion with the medical arrangements for mobilisation.

THE NATIONAL SERVICE LEAGUE AND THE TERRITORIAL ARMY SCHEME.

The letter which the National Service League has addressed to the press is a very notable document from whatever point of view it is considered, whether as regards the eminence and authority of the names attached to it, the argumentative strength and reasonableness of the criticism it brings to bear upon Mr. Haldane's new army scheme, or the fairness and common sense with which the subject is handled. To those who know from personal experience what war is, whether serving in the combatant ranks of the army or in the Royal Army Medical Corps, there is no need for us to say anything, for they have no doubt already made up their mind on the matter. But we strongly commend this publication on the part of the National Service League to the earnest and thoughtful consideration of all desirous of forming some opinion of the merits and defects of Mr. Haldane's scheme and of finding their way to some reasonable solution of the army problem. To confine ourselves to one point only because it seems to us a crucial one for the successful working of Mr. Haldane's scheme—will it include a compulsory six months' preliminary training or not? We shall no doubt know much more about the intentions of the Government at the end of the second reading of the Territorial and Reserve Forces Bill than we do now. As to a system of universal compulsory training leading to a widespread spirit of militarism, we believe that it would have an exactly opposite effect. National preparedness for war should, by increasing national confidence and a sense of personal responsibility, strongly strengthen the chances of peace and lessen the liability to unseemly panic. Even apart from its being the reasonable duty of every citizen to aid in the defence of his country, we contend from our point of view that an obligatory military training increases the physical strength, improves the physique, and teaches a man how to conduct himself, mentally and morally, to the best advantage in all emergencies.

THE CAPE PREMIER AND IMPERIAL DEFENCE.

The Colonial Conference will be long be setting about its deliberations, which will be of an Imperial character, and Dr. Jameson, the Cape Premier, will, it is announced, submit two propositions for consideration, one dealing with

the creation of an Imperial Council and the other with the subject of British preference. We call attention to the former because it seems, at the present time, to open a way to the possible unification of the Colonial forces available for Imperial defence on a large scale, when the provision of an Imperial Medical Service available for any future war would necessarily form an integral part of the organisation. Dr. Jameson's proposed resolution is to the following effect:—

This conference considers necessary the organisation of a plan of Imperial defence by which the contributions of each colony should be equitably fixed and provided for; this conference believes that while any call to arms resulting from an attack on the Empire would unquestionably meet with an enthusiastic response from the colonies, yet it is essential to know the number of trained, equipped, and efficient men which the colonies will undertake to make available for Imperial defence when called upon; this conference, however, is of opinion that, prior to accepting the burden and expense of such a responsibility the colonies would require to be represented on an Imperial Council at which questions concerning *inter alia* the peace of the Empire should be discussed. Seeing that the above resolutions involve considerations of the first importance to the future of the Empire, this conference submits them to His Majesty's Government in the confident belief that they will receive the serious consideration which their character demands.

Correspondence.

"Audi alteram partem."

THE MEDICAL DEGREES OF THE UNIVERSITY OF LONDON.

To the Editors of THE LANCET.

SIRS,—In reference to the present controversy concerning the maintenance of the standard for the above degrees, I have been asked, on the ground that I was an examiner in medicine during the last year of the old system as well as during the first three years of the new, whether there has or has not been any actual lowering of the standard. May I be permitted to say that I have throughout considered it my duty to maintain the standard, and that to the best of my knowledge no lowering has taken place. So far as the medicine at the M.B., B.S., is concerned, my impression is that at the present time the standard is higher than at any previous period. Of this I am certain, that no suggestion—official or unofficial—to the effect that at any of the examinations in which I was concerned any lowering of the standard was advisable has ever reached me or been discussed in my presence, and that ancient usage has been the principal factor in solving new problems.

I have assumed, how far correctly I cannot say, that the improved results at the M.D. examination have been due to two changes. Under the old scale of fees a candidate paid £5 on entering for any M.D. examination. Under the recent scale he paid £20 instead of £5 on first presenting himself, and, if he failed to pass, an additional £20, instead of £5, every time he re-entered. It appears highly probable that a graduate would, under the higher scale of fees, be more careful in preparing himself for the examination and be less likely to enter unless he felt tolerably certain of passing. Again, the additional opportunities for specialisation under the new regulations afford a man a chance of working at what most interests him, and therefore of attaining more easily a higher degree of knowledge.

It is the business of examiners to test as closely as possible the merits of the individual candidates and to arrive at a decision without reference to the statistics of previous examinations. Any other course involves gross injustice to the candidates, and must bring discredit upon the University.

I am, Sirs, yours faithfully,
H. MONTAGUE MURRAY.

London, W., April 9th, 1907.

THE USE OF ALCOHOLIC BEVERAGES.

To the Editors of THE LANCET.

SIRS,—As a member of the medical profession, who has practised for some years in a district where the effects of alcohol can be readily studied, I may be permitted to ask, in view of statements—so much at variance with recent investigations—made in the manifesto in THE LANCET of March 30th, gations—made in the manifesto in THE LANCET of March 30th, for evidence by which the old conclusions have been re-affirmed. Such statements, which may, and probably will, exercise an extremely harmful influence on the community at large, can hardly have been made public without fresh data

A.C. under "normal" do not pretend to represent accurate measurements of B.C. and A.C.

I am, Sirs, yours faithfully,

D. MATHESON MACKAY, M.D. Edin.,
Late Senior Clinical Assistant, Hospital for Diseases
of the Throat, Golden-square, London, W.

Hall, March 22nd, 1907.

THE INCREASE OF INSANITY.

To the Editors of THE LANCET.

SIRS,—I greatly regret that I should have caused annoyance to Dr. Marr by my suggestion that the difference between the increase among general paralytics in Glasgow and in Edinburgh might be the result of better clinical observation in the latter. For this suggestion I have no ground, but still it is a very difficult thing to believe that it is a fact that the disease increases more in Edinburgh than in Glasgow, and I ought to have put it that it probably was a question of difference of diagnosis. Any way I am certain that the careful examination of patients at Woodilee leaves nothing to be desired.

Yours truly,

Devonshire-place, W., April 9th, 1907.

GEO. H. SAVAGE.

A NATIONAL SCHOOL FOR CONSUMPTIVES.

To the Editors of THE LANCET.

SIRS,—My attention having been called to a letter by my friend, Dr. M. S. Paterson, of the Frimley Sanatorium, in your issue of March 23rd, *apropos* of an article by Mr. C. H. Garland and myself under the above title, may I be allowed to correct what seems to be a misconception when he infers that our views were based on our visits to Frimley? Our scheme was framed originally in 1903 and 1904 and in the inclosed copy of my interim report as chairman of the Sites and Buildings Subcommittee (p. 7, Fourthly) printed for March 11th, 1904, you will find that our advocacy of the adoption of the system of employing selected patients in sanatoriums—which, by the way, is no new thing—antedated not only our visits to the Brompton Hospital Sanatorium by a few years but also, I believe, the erection and opening and Dr. Paterson's appointment thereto.

The scheme of the National Association for Establishing and Maintaining Sanatoria, for which I have had the honour and pleasure of working continuously since its inception, has been developed almost without modification on the lines laid down in the report quoted. The other medical members referred to therein were Dr. A. P. Hillier and Mrs. Percy Alden, who were both unfortunately obliged to give up this work by other public calls upon them, but not before giving very substantial assistance. Dr. Paterson has achieved a striking piece of organisation and administration, and no one engaged on the development of similar methods on a large scale in England can afford to ignore his demonstration of the possibilities of this work. I wish to take this opportunity, in case our article did not convey our gratitude as sufficiently as it might have done, of thanking Dr. Paterson and his colleagues for enabling Mr. Garland and myself, as well as Dr. L. Crossley, the medical superintendent of our first sanatorium at Benenden, to see what was being done at Frimley.

I am, Sirs, yours faithfully,

Brook-street, W., April 2nd, 1907.

THOS. D. LISTER.

SANITARY ADMINISTRATION IN PAIGNTON.

To the Editors of THE LANCET.

SIRS,—I have had a copy of your editorial note under the above heading sent to me, and as a resident in Paignton for the past 18 years and recently a member of the urban district council I wish to reply to some points upon which I venture to think you have been misled by the report of the medical officer of health, who has evidently overlooked the fact that the report may come into the hands of those who have no local knowledge.

I will take the case of the supposed disregard of the by-laws, where it is said that the council is permitting a road 600 feet long to be only 24 feet wide. The report does not state that this is a parish road leading from Paignton to Meldon and having an average width of 13 feet. All the council could compel the adjoining owners to do in the event of houses being erected would be to keep the frontages back 18 feet from the centre of the road. An owner has offered to give a strip of land which would enable

the road to be made 24 feet wide to form a footpath with curb and channel if the council will lay the sewer and ballast and form the new piece of road. The question whether this was a new road within the meaning of the Private Street Works Act was raised at the Local Government Board inquiry and disregarded by the inspector, and the sanction for the loan has been received. The new water scheme referred to by you is an auxiliary scheme for distributing the water to the higher levels of the town. The main water scheme is finished, and the water which has been brought 18 miles from the centre of the moor is now running into the home reservoirs, and the formal opening is fixed for June. The total cost of this portion of the scheme is £120,000, and both Teignmouth and Brixham will be supplied from Paignton. The dispute as to the relative values of the three schemes submitted to the council is purely an engineering question and cannot affect the health of the town in any shape or form, but the fact that the council has decided to leave it in the hands of the engineer, who is responsible for and has carried out the main scheme, would seem to be the right course to have taken.

I consider the statement of your local critic as to illness in the town over-coloured and made upon hearsay evidence. My own son is one of those who are at present suffering from scarlet fever, and the most careful research fails to show how it was contracted or any connexion with the few other cases in Paignton. The question of an additional ward at the hospital should be considered to overcome any future difficulty caused by the wards being occupied by enteric cases, but I believe the fact that the hospital is empty for months at a time could easily be proved. Your correspondent has omitted to point out that last summer a large sum was spent on the outfall of the sewer, that a break was located and mended, and the sewer was carried 250 feet farther out to sea. With regard to the water, I can only say that I have never had to boil it and my Pasteur filter shows no trace or indication of any organic matter being contained in the water.

With regard to the infantile death-rate, it should be considered that the wealthy class in Paignton are largely people who come here after retiring from the army, navy, or business, and are therefore for the most part past middle life. It follows that by far the larger number of births are among the artisans and labouring classes amongst whom the rate is always high.

I am, Sirs, yours faithfully,

Paignton, April 4th, 1907.

W. PIERPOINT ROBERTS.

EIGHTH INTERNATIONAL CONFERENCE OF RED CROSS SOCIETIES.

To the Editors of THE LANCET.

SIRS,—I have seen in THE LANCET of March 23rd an article on the subject of the forthcoming International Red Cross Conference. The statements it contains require correction. In regard to no official intimation of the conference having been given, an official notice was sent to you and was published in THE LANCET on Feb. 16th. It was also extensively circulated throughout the press of the country. I inclose a fresh copy of this notice which fully states who are responsible for the arrangements and where the meetings will be held. Further than this, you had on Feb. 2nd already published an article giving the same information, and in regard to the exhibition we advertised it in THE LANCET of, I believe, Feb. 8th.

I may add that all the Central Red Cross Societies who are entitled to send delegates to the Conference have been made fully acquainted with the manner in which it has to be conducted, that having been prescribed at the last conference at St. Petersburg in 1902.

In reference to your general remarks about this society perhaps you will allow me to send the inclosed pamphlet which explains its scope and origin. I shall have much pleasure at any time in providing you with the fullest information should you give me the opportunity, and I think you will find that the Conference will be conducted in every way in a manner worthy of the occasion.

Believe me, yours faithfully,

(Signed) J. DANVERS POWER,

Chairman, Conference Committee.

British Red Cross Society, 9, Victoria Street, London, S.W.,
March 27th, 1907.

* * We regret to have been misled with regard to the steps taken by the Red Cross Society for giving publicity to the Conference of 1907. We refer our readers to an editorial article in THE LANCET of Feb. 2nd, p. 311.—Ed. L.

disregard) their "pronouncement" as being a negligible quantity.

I beg to subscribe myself
A MEMBER OF THAT PUBLIC FOR WHOM THE
April 6th, 1907. PRONOUNCEMENT WAS INTENDED.

** We have received very many letters on this subject and shall possibly publish a further selection of them. We are glad to notice in communications from most of our medical correspondents the absence of the suggestion that political or pecuniary motives induced the publication of the much-discussed document.—ED. L.

ON THE CONDITION OF THE BLOOD-VESSELS DURING SHOCK.

To the Editors of THE LANCET.

SIRS,—Though not acquainted with surgical shock I feel greatly interested in the discussion on the above-mentioned subject. It proves so very clearly how ignorant we are of this difficult and intricate problem of the blood pressure in man. So far, indeed, goes our ignorance that two so widely different opinions are possible about a so marked disturbance of circulation. I cannot confirm Mr. Malcolm's views on shock but have to confess that I am much impressed by his arguments. I think his way of looking at the vessels, as described in his lecture in THE LANCET of August 26th, 1905, p. 573, may be very helpful in detecting the true state of things in many a case. Some time ago I was asked to see a woman aged about 40 years. It was a case of long-standing mitral stenosis. The right heart was still strong enough, the muscular apparatus at the orifices of the veins still working well; there was no general stasis or cedema but this sad condition of overfilling of the lungs which suffocates the patient. She was in the very last period of her disease and died a few weeks afterwards. Still, to save, or at least to prolong, life the doctor prescribed digitalis; not seeing any effect he gave it in a very large dose as an enema. To his great surprise he saw the (still regular) pulse disappearing and asked me to come over and see the patient. I found a filiform, nearly impalpable pulse, but very strong heart sounds and apex beat. Looking at the neck of the patient to see whether there was any venous pulsation I found well-filled, extremely hard, and wildly beating throbbing carotids. It was obvious that the heart was working against a heavy resistance. Why was the pulse so impalpable?

The explanation is, I think, in the line of Mr. Malcolm's suggestions. The large dose of digitalis contracted the arteries higher up than the radials at the wrist, the carotids being not, or not so much, contracted. The heart therefore worked against a heavy resistance, there was a very high intracardial pressure and a high blood pressure in the carotids. Now who will tell what the blood pressure has to be in the contracted radials at the wrists? Is Dr. Williams sure that it will be found high in that part of the arterial system? The problem of blood pressure is not settled by saying "if the blood-vessels contract the blood pressure rises; if they dilate the blood pressure falls." This assertion holds good for the intracardial pressure only. At the periphery it depends upon the spot where blood pressure is gauged and upon how far the contraction of the vessels has gone. I think it very probable that under some extraordinary influence (maybe in shock) the contraction of the vessels may go up still higher than the arteries in the arms and involve carotids and part of the aorta. The intracardial pressure may rise enormously and a low pressure be found in the periphery, where a large amount of resistance has been overcome. So I do not say Mr. Malcolm's explanation of surgical shock is the right one, but I think it may be useful in clinical examination and may be a help in explaining conditions which otherwise are not well understood.

I am, Sirs, yours faithfully,

Groningen, March 31st, 1907.

K. Z. WENCKESACS.

To the Editors of THE LANCET.

SIRS,—In my letter on this subject which you were good enough to publish on March 23rd, I invited Mr. J. D. Malcolm to point out the existence of any fallacy in one of the arguments by which the present view is supported. He responds in your issue of March 30th with two statements, one of

which, even if it be a fact, is not a fallacy, and the other of which is certainly neither fallacy nor fact.

The first is that in shock the blood pressure in the splenic vein is raised. Now, the splenic vein is a vessel which, owing to its anatomical position, does not lend itself either to frequent observations or to such as are altogether free from sources of error; but even if this were otherwise, from the interposition of the heart on the one hand, and the capillaries on the other, it must be obvious that the state of the pressure in an individual vein has no necessary or even probable relation with the general state of the pressure in the arterial system. The second statement is that a fall of blood pressure as recorded by the manometer might be due to a vaso-dilatation which is local and not general. Unfortunately for Mr. Malcolm, this is not so. The healthy organism must not, and will not, allow the blood pressure to fall below the normal level. If it does, the medulla is immediately threatened with starvation and the animal with death. A local dilatation is therefore immediately compensated for by a constriction elsewhere, so that the pressure may be maintained at its proper level. When, therefore, a local dilatation causes a fall in blood pressure it means that there has been no compensatory constriction elsewhere. This can only occur when the constrictor power is seriously impaired, as, for example, when the medulla is exhausted. There is thus no escape from the conclusion that, the cardiac power being constant, a low blood pressure indicates a general vaso-dilatation.

The contention that the condition of shock can be characterised by an unimpaired cardiac power, together with a general vaso-constriction, surely reveals some confusion of thought. Such a combination is very suggestive of a ruptured blood-vessel, but, except by a hemorrhagic route, it seems impossible to understand how it can cause the extreme degree of asthenia which is generally understood by shock.

I am, Sirs, yours faithfully,

London, W., March 30th, 1907.

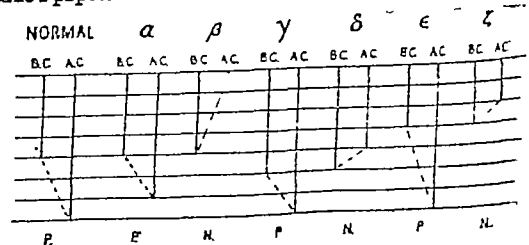
LEONARD WILLIAMS.

"A PRELIMINARY NOTE ON RINNÉ'S TEST."

To the Editors of THE LANCET.

SIRS,—I hope I shall not seem to be displaying undue haste if I venture to make a suggestion to Mr. Richard Lake in connexion with his "Preliminary Note on Rinné's Test" in THE LANCET of Feb. 23rd, p. 505. I might wait to see the detailed statement which he promises and which I am looking forward to, but then my suggestion might be too late.

If I may be allowed to say it, Mr. Lake's method of recording the subdivisions of Rinné's test seems to me to be lacking in point. The method is accurate, of course, but the idea of each subdivision is grasped only after a more or less lengthy mental effort. Why not use the diagrammatic representation which is in vogue in Professor Politzer's clinic? The positive or negative quality is seen at a glance, and not only can Mr. Lake's six subdivisions be shown but any number of variations in them. Two vertical lines stand for the relative lengths of B.C. and A.C., and as, in the normal state of hearing, the length of B.C. is less than that of A.C., the line standing for the B.C. of normal hearing will be shorter than that standing for A.C. The following seven diagrams, therefore, will indicate normal hearing, and the six subdivisions referred to in Mr. Lake's paper.



The inclination of the line connecting the bases of the two vertical lines at once shows whether the positive or negative quality obtains. I need hardly say that the lines B.C. and

much useful work for the benefit of the school children. Former donations and economies have been invested, and altogether they yield to this local school fund interest to the amount of 3700 francs annually. Then there is a subvention from the general council of the department of the Seine of 2400 francs and other very small items. The greatest of all sources of revenue is 21,000 francs derived from the letting of spaces in the streets to stall-keepers and showmen during local fairs. It has been pointed out that this is injurious to public health, for the streets or open spaces are overcrowded and cannot be kept so clean while these fairs last. Also the stalls injure the business of the neighbouring shop-keepers. The fairs, however, are still held because they amuse some people; but, above all, because the receipts derived therefrom are devoted to the school funds. Thus, in the XIV. arrondissement the total receipts from all sources for the school fund amounted in 1906 to 32,160 francs (£1286), of which sum 21,000 francs (£840) were derived from the rent charged to showmen, and there were subventions amounting to another 2650 francs, or £106. Deducting from the total receipts of £1286 the £143 interest paid on invested capital as being difficult to define, I will deal with the remaining £1136. Of this £546 come from one form or another of taxation and only £153 from voluntary subscriptions or donations. Smaller receipts, such as £24 paid by parents whose children joined the holiday excursion and the interest on invested capital, make up the total income of 32,160 francs, or £1286.

It will illustrate the working of the system and show what is the real function of these local school funds to mention how this money is spent. The largest item is 8500 francs spent in buying boots for the more needy school children. The money laid out on clothes, to a large extent pinafiores, was not so considerable—namely, 5000 francs. In the budget of the XVII. arrondissement, or the Batignolles-Monceaux district, I find that 12,877 francs were spent on boots and only 4931 francs on clothes. Then in the XIV. arrondissement 2400 francs are entered as rewards to pupils, medals and other gifts, but for the most part these rewards took the form of opening accounts for the children in the savings bank, thus giving an object lesson in thrift. Honorariums to secretaries, &c., amounted to 2100 francs, the prizes given to the children for July 14th historical competition 600 francs, and printing, stationery, and small items brought up the total expenditure to 23,140 francs; thus a balance of 10,020 francs remained in hand. It was out of this balance that 5000 francs were given to the *cantines scolaires*. It will be seen that the bulk of the expenditure is outside of the school fund or *caisse scolaire*. This "outside budget," as it is called in the annual report of the *caisse des écoles*, is set forth as follows: maternal schools for children from three to six years of age, interest on invested money, £4; municipal subvention, £136; total receipts and total expenditure, £140. *Cantines scolaires*: subvention from the municipality, £3200; contribution from the local *caisse des écoles*, £200; total receipts and expenditure for the feeding of the children in the elementary schools of the XIV. arrondissement, £3400. The school colonies or *colonies scolaires*, formed to enable weakly children to spend some time at the seaside or in the country, cost £560, but the municipality only gave a subvention of £360. The deficit of £200 was met by a contribution of that amount from the *caisse des écoles* and taken out of their £400 surplus. This is an illustration of the very general principle that feeding being the first of necessities the municipality gives by far the largest subvention for this purpose. The sending of children for health holidays in the country was left more to local effort and hence, as in this instance, the *caisse des écoles* contributed a much larger share of the expense. In the XVII. arrondissement the municipal subvention during the year 1905 for the holiday health excursions was £400 and the contribution from the local school fund £224. For the canteens the municipal subvention was 60,283 francs (£2411). The payments for meals by the parents amounted to 17,277 francs (£691). The total outlay was 94,501 francs (£3780). There was a very big deficit and the local school fund advanced £551 to balance the accounts. It may be of interest to note that out of this total of £3780 the food cost £2850 and the fuel £199, the rest being spent in furniture, utensils, cost of management, wages to servants, &c.

From the details given of these two local budgets it would seem that the contributions of the local school funds exceed 2 per cent. of the expenditure. Doubtless M. Hénaffe got

his figures from the handsome volume published in 1900 on the occasion of the Universal Exhibition by the Paris municipal council describing all the educational services. Here, on page 171, there are some very interesting figures for nine years. From this statement it appears that in 1891 the municipality contributed 639,635 francs to the *cantines scolaires* and the *caisses scolaires* of the 20 arrondissements only gave 7540 francs. In 1894, however, they gave 36,472 francs and the municipality 787,660 francs. From that year the contribution from the school funds to the canteens decreased and that of the municipality increased till, in 1899, the school funds only gave 21,600 francs, but the municipality gave 1,017,695 francs; and in these latter figures we get the proportion of 2 per cent. mentioned in M. Hénaffe's report. During the nine years in question, 1891 to 1899 inclusive, the total amount contributed by the *caisses des écoles* towards the expenses of the *cantines scolaires* was 192,295 francs (£7691) and by the municipality 7,418,171 francs (£296,726).

On page 176 of the same official volume there is another important table. It compares for each arrondissement the number of pupils during the years 1892 and 1893, the number of meals they paid for, the number of meals they received gratuitously, and the average cost per meal. From this it appears that in 1892 the number of gratuitous meals was equal to 56 11 per cent. of the whole and in 1893 it was equal to 63·93 per cent. of the whole. To-day we have seen that it is a full two-thirds of the total. It is also shown that the meals to-day cost more than they used to do, for the average cost in 1892 is set down at 0·14638 franc per meal and 0·14843 franc in 1893, whereas to-day it is 0·171 franc. The tendency is to improve the meals, to give more meat, sometimes as much as 30 to 40 grammes, and thus more money is spent. This improvement will certainly increase as a higher class of children frequent the canteens and the impression gains ground that money can scarcely be better spent than in insuring the physical health and strength of the nation.

All these figures and calculations will, I trust, make the practical teaching of the Paris experience clear. The municipal councillors and others, whom I have recently seen at the Hôtel de Ville, entertain very little doubt as to the likely upshot. It is evident that only a third of the parents pay and then they do not pay the full cost of the meals their children eat. So that all the children and all the parents derive some advantage at the cost of the general ratepayer. When attempts are made to get more voluntary subscriptions for the school funds the persons solicited very often answer that they pay such heavy taxes that there should be no need to add to these any further sum. Not a few of the parents also, when it is pointed out to them that they should endeavour to pay for the meals given to their children at school, object that they are already paying through taxation, and this is perfectly true. Thus the number of those who individually pay for the meals have steadily decreased from year to year and it is already an open question whether the money thus obtained is worth the trouble of collecting. Its collection causes friction, creates invidious distinctions between individuals, gives rise to accusations or the suspicions of favouritism, necessitates somewhat inquisitorial investigations into the private concerns of numerous families to ascertain who should and who should not pay, and occupies a large staff of persons on an unpleasant and unproductive investigation. Then why should a workman who is just a little better off than his neighbour, because, for instance, though earning the same wage he has two children instead of three, be made to pay twice over for his children's meal, once to the *caisse scolaire* of his district and once to the rate collector? The section of the population that can and does pay for their children's meals are beginning to realise that it would be very much to their advantage if the entire cost was defrayed out of public funds. For instance, the canteens cost rather more than £60,000 a year and a third of the parents pay rather less than a third of this sum directly to the schools but they also pay their share of the £40,000 municipal subvention. It would evidently be cheaper to pay only a slight increase in municipal taxation.

The old argument that the free feeding of the children would weaken parental responsibility has quite died out in France, where every adult male has a vote and all pay the municipal taxes. Parents exercise their sense of responsibility by voting as intelligently as possible in their children's interest. As a consequence, not only is the municipality

THE FREE FEEDING OF THE PARIS SCHOOL CHILDREN.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

THE RESPECTIVE ATTRIBUTES OF THE CAISSES DES ÉCOLES AND THE CANTINES SCOLAIRES.—THE AVERAGE COST OF THE MEALS.—THE ELIMINATION OF CHARITY.—THE GIGANTIC SCOPE OF THE EXPERIMENT.

TWO years and a half have elapsed since last I visited and wrote about the free feeding of the children in the elementary schools of Paris.¹ In the interval Mr. Birrell, as Minister of Education, stated in the House of Commons that the local authority in Paris provided food for the school children and that "it worked exceedingly well. The advantage of such a system," he went on to say, "was that the people raised their own standard of living very much and created in their stomachs a divine satisfaction. They could confer no greater service upon posterity than raising the standard of living of the children. If a child had good and nutritious food he or she would take care to see that in turn their children had good food also. He should be sorry to forbid by law a local authority from trying experiments upon a large scale, whether they were confined to the necessitous poor or not. It is done in Paris, and if it could be done there they in London should be able to do it also. In Paris ten and a half million meals were served last year, and, although it was difficult to ascertain what proportion of them were free, there was reason to believe that a very large proportion of them were given in exchange for payment." Mr. Birrell is not alone in failing to understand clearly the financial position of the Parisian *cantines scolaires*. Indeed, they have been confused with the *caisses des écoles* to such a point as utterly to misrepresent this important institution. What Mr. Birrell himself would consider a very large proportion of payments it is difficult to say, but I will give the actual figures and then it is probable many persons will, on the contrary, find that the proportion of payments is small.

A very instructive "Note relative au Service de Garde des Cantines Scolaires" was presented to the Paris Municipal Council by Councillor Hénaffé and was issued in February, 1907, as paper No. 11 of the official publications of the council. This document sets forth that in 1905 6,144,634 meals were served gratuitously and 3,184,669 in exchange for payments. Thus, at once, it is obvious that only one-third of the meals were paid for by the children or their parents. If, however, the details are studied it becomes evident that the proportion of payment is less. These details are interesting in themselves and apart from the question as to who pays. It will be remembered, as I described in my first report on the subject, that during the earlier experiments made at Paris the cost of the meals amounted to 25 centimes, or 2½d., each. It was only after the acquirement of great skill and experience in cooking and in the management of the canteens that the cost was reduced to 1½d., and this on condition that not more than from 20 to 25 grammes of meat, cooked and free from bone, was given. Now, for the year 1905 the average cost of the meals amounted to 0.171 franc each, or within a minute fraction of seven farthings each and a little more than two centimes above the usual estimate of 15 centimes or six farthings. But if the cost exceeded the estimate the payments were below. It is here that the part played by the administration of the *caisses des écoles* bears upon the subject. Paris is divided into 20 submunicipal districts called "arrondissements." Each has its *caisse scolaire*, and where the parents are called upon to pay for their children's meals the charge made by the *caisses scolaires* varies considerably. The maximum payments effected amounted to an average of 18 centimes in the fourth and to 17 centimes in the twelfth arrondissements. In the second, third, seventh, tenth, eighteenth, and twentieth the traditional average of 15 centimes was paid. In the remaining 12 arrondissements the average came to less than 15 centimes. In five districts it amounted to only ten centimes per meal. The average for all the 20 districts, including the fourth, where parents distinguished themselves by paying nine-tenths of a centime more than the actual cost, amounts to 0.138 franc. Thus, even where payment is effected, the sum given is on an average only about five and a half farthings out of

the seven farthings spent, and this, I take it, refers to the food actually consumed. In any case, the material, the kitchen utensils, the plates, and the rent of the localities occupied are not included in this estimate of the cost of the meals. The total loss on the food consumed in the 20 districts by the children, for whose meals payments have been made by the parents, is put down for the year 1905 at 114,492 francs, or £4579. If to the actual cost of the food the other attendant expenses are added, it may be speaking in round figures, that two-thirds of the children do not pay for their meals and that the remaining third receive from the public purse an annual subvention of close upon £5000 towards the cost of those meals for which they do effect payments.

M. Pierre Morel, municipal councillor, in his report on the *cantines scolaires* published in 1905, No. 60 of the official publications, gives the figures for the previous year and they are very similar. Thus, in 1904, the free meal given amounted to 5,975,359, while those for which payments were made equalled 3,253,919, making a grand total of 9,229,278 meals. If we multiply this latter figure by 0.171 franc, the estimated average cost of each meal, we get the total of 1,578,004 francs, or £60,320. As the municipal subvention amounted to £40,800, it will be seen that here again the parents paid, roughly speaking, about a third of the total cost.

It has been said, however, that the cost of feeding the children was in a measure defrayed by the *caisses des écoles*. Then, as these school funds were originally provided by voluntary contributions, attempts have been made to infer that the feeding of the children in Paris was to a considerable extent the result of charity. Whatever opinion may be held as to what should or should not be done, nothing but mischief can result from a misrepresentation of facts, especially when, as in this case, they refer to the largest experiment that has been made in Europe. As already explained, the law of April 10th, 1867, distinctly states that the *caisses des écoles* will "consist of voluntary subscriptions, of subventions given by the commune, by the department, or by the State." At first voluntary subscriptions did constitute an important part of the receipts, but then the feeding of the children was not attempted. In the official "Note" mentioned above and written by the municipal councillor, M. Hénaffé, there occurs the following important passage:—

If the figures given of the actual working of the *cantines scolaires* are compared, it will be seen that nearly all the *caisses des écoles* charge less for meals than they cost. This fact is explained by the willingness of the town of Paris to pay the difference and the large part it plays in assuring the existence of the *cantines scolaires*. You know that the *caisses des écoles* contribute towards these expenses only an insignificant sum, while the sacrifices made by the town of Paris are enormous, since its share in the expense of the canteens amounts to about 98 per cent. of the total.

This is a statement which may be challenged, not in regard to the principle involved but because certainly in many districts the contribution of the local *caisses des écoles* occasionally amounts to more than 2 per cent. of the cost of the canteen. It is very difficult to make accurate comparisons, as the different districts have different methods of keeping their accounts and charge different prices for the meals they give. A unification of methods is much needed. As an illustration, however, of the objection to the 2 per cent. estimate I find that the *cantines scolaires* of the XIV. arrondissement, or district of the Observatory, cost for the year 1906 the sum of 85,000 francs, and the receipts consisted of a municipal subvention of 80,000 francs and a donation from the *caisse des écoles* of that district of 5000 francs. This latter sum obviously represents a great deal more than 2 per cent. of the total cost of feeding. But, on the other hand, it does not mean that these 5000 francs were derived from charity.

The charitable contribution towards the feeding of the children is much less than 2 per cent. of the whole cost. As the *caisse des écoles* of the XIV. arrondissement contributes a comparatively large sum, I will take it as an example of the working of the system. The local budget of this school fund for 1906 shows that the annual subscriptions are estimated at 3500 francs, and there are donations, often from wedding parties, to the amount of 450 francs, making a total of £158. But the annual subscriptions, generally of 10 francs, or 8s., per subscriber, are given not so much as a charitable financial help—the real object is to secure the right to vote for the election of the committee of management which does so

the whole of Scotland, extending even to the outer Hebrides and the remote parts of Caithness, Sutherland, Inverness, and Argyll. In connexion with these classes the association has issued more than 72,000 certificates of proficiency in first-aid to the injured, over 20,000 medallions for advanced students in first-aid, and nearly 2000 certificates of proficiency in home nursing and hygiene. Throughout Scotland 42 centres of the Association have been established, and a service of ambulance wagons has been provided in every considerable town in which a police ambulance service does not exist. In Glasgow, for example, the whole ambulance work of the city and neighbouring burghs is done solely by the wagons of the Association, and it is believed by us in Scotland that no finer ambulance service exists in any part of the United Kingdom. The calls attended to by the association's motor and other ambulance wagons in Glasgow alone amount to 12·44 daily. The association has further trained the constabulary throughout Scotland in giving first-aid, so that there are now few places in Scotland where this cannot be obtained from the police. During the late South African war the Association equipped and sent out a base hospital of 520 beds, and it is now recognised by the army and navy as an institution with which these authorities can enter into direct relations for the supply of men and material in case of emergency. In addition the association has recently been intrusted by the British Red Cross Society with the organisation of its work in Scotland. As the Association has for so many years done such excellent work and appears to be capable of efficiently meeting all requirements, it seems only reasonable to ask that the Order of St. John should not be allowed to initiate new centres of ambulance work in Scotland, and thus engender rivalry and competition which could not but be detrimental to the interests of ambulance work in general. Those who control the affairs of the Order of St. John are of opinion that the St. Andrew's Ambulance Association should become merged in the Order as a department charged with ambulance work in Scotland. This view the Association refuses to accept as being in derogation of its charter, and likely to cripple seriously the work it has carried on so successfully for 24 years. But the Association has gone so far as to offer to act as the Order's ambulance department in Scotland, it being understood that by so doing the charter of the Association would not be invalidated. It is earnestly to be hoped that the Order of St. John will not persevere in any high-handed fashion with its claims. The St. Andrew's Ambulance Association has done the spade work in Scotland for 24 years, and now when, thanks to its efforts, the public in Scotland are waking up to the value of ambulance work the Order of St. John proposes to step in and reap the fruits. That, at any rate, is how the matter must appear to us. There can be no doubt that the granting of the petition of the Order of St. John will be bitterly resented by those who have given their time and money to developing the St. Andrews Ambulance Association.

Glasgow Royal Infirmary: Post-Graduate Classes.

The summer course will this year be a short but very complete one, including, besides instruction in general Clinical Medicine by Dr. J. M. Cowan and in Clinical Surgery by Mr. J. H. Pringle and Dr. H. Rutherford, the following special subjects: Symptomatology of the Nervous System, by Dr. Walter K. Hunter; Surgical Diseases of the Urinary Organs, by Dr. David Newman; Gynaecology (A), by Dr. J. K. Kelly; Gynaecology (B), by Dr. G. Balfour Marshall; Diseases of the Eye, by Dr. H. Wright Thomson; Diseases of the Skin, by Dr. Alexander Morton; Diseases of the Throat and Nose, by Dr. Robert Fullerton; Anæsthetics, by Dr. J. King Patrick; Gynaecological Pathology, by Dr. W. D. Macfarlane; Operative Surgery, by Dr. Peter Paterson; and Bacteriology, by Mr. David McCrorie. These courses will be thoroughly practical, the amount of material at the disposal of the teachers being so large that they have every facility of illustrating their lecture demonstrations by clinical cases. During last year the attendance on the various courses was most encouraging. The attendance at the classes (not including members of the staff) numbered 137 members. It is therefore very desirable, in order to facilitate arrangements, that members of the profession who wish to join any of the classes should communicate as early as convenient with the superintendent, who will enrol members and supply any information desired.

April 9th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Association for Housing the Very Poor of Dublin.

THE annual meeting of the Association for Housing the Very Poor of Dublin was held at Trinity Chambers on April 8th, Sir Lambert Ormsby, the chairman, presiding. This is a small company, but it has already done work that is much needed, for it is recognised that the wretched state of the tenement houses is one of the chief causes of the high mortality in the city. Sir Charles Cameron complimented the association on the way the tenements in its charge were kept and said that although those in Derby-square were reconstructed houses, the rooms were model ones and sanitary in every detail. A dividend of 3 per cent. was declared on the capital of the company.

The Public Health of Belfast.

At a meeting of the public health committee held on March 28th, the medical officer of health reported on certain insanitary areas, and it was decided to appoint a subcommittee to visit these localities and to draw up a report and recommendations for the consideration of the health committee. On April 25th and following days it is proposed to take evidence before the Health Commission in reference to the Belfast water. For the week ended March 23rd the death-rate was 23·5 per 1000. At a meeting of the city corporation held on April 2nd it was reported that between Feb. 17th and March 16th the large number of 302 cases of infectious disease had been notified—viz., 64 enteric fever, 58 scarlet fever, 28 simple continued fever (evidently typhoid), 4 puerperal fever, 27 diphtheria, 1 croup, 19 erysipelas, and 164 cerebro-spinal meningitis. There were 263 deaths registered from chest diseases. The average annual death-rate was 23·7. These returns show a very high number of infectious diseases notified and suggest that, as so often happens in Belfast, another epidemic of typhoid fever may be coming. A very decided opinion was expressed by many members of the corporation against the waste of money in employing counsel at the Health Commission. It was finally settled to agree that the Lord Mayor should let the chairman of the public health committee know what were the ideas of the members of the council in regard to their being legally represented at the Commission. A very curious point was referred to—that was a resolution appointing a deputation of the public health committee to visit some towns in England and Scotland with a view to ascertain methods of public health administration—in other words, a resolution to send Belfast officials to other cities to learn their business.

The Belfast City Fever Hospital.

Dr. G. Orr, medical officer of Ballyleeson Dispensary, has reported to the Lisburn board of guardians at a recent meeting that since the establishment of the Purdysburn Infectious Hospital in his district he has had to register all the deaths which took place in that institution. This entailed hardship on the relatives of the deceased who had to travel another mile after their journey of two or three miles from the nearest train to the hospital. The dispensary patients were naturally alarmed at the presence of people from all parts of Belfast who came to register deaths from infectious diseases, a feeling much intensified by the occurrence of two deaths from cerebro-spinal fever in the neighbourhood, one case being that of the dispensary caretaker and the other of a boy who two days previously had been in the dispensary for some medicine. It is clear that the Registrar-General will have to constitute the hospital a special Belfast district, so that a resident official may be appointed registrar and thus avoid the evils referred to.

Rainfall in Belfast in March.

In March 4·89 inches of rain fell on 21 days, making the amount for the year 1907, so far, 9·78, which is a little above the average amount.

The Health Commission in Belfast.

The Belfast Health Commission resumed sitting on April 8th, when Sir John Byers was examined at both sittings on that day and again on Tuesday. He dealt very fully with the various problems confronting Belfast and made a number of suggestions for establishing a really efficient modern public health department in Belfast.

April 9th.

approved in spending £40,400 on feeding the children, but there is another subsidy of £40,400 which is divided among the maternal schools, the health colonies, various homes for orphans, and different institutions connected with primary education. The teaching itself is, of course, obligatory and gratuitous and all the other services connected with the schools are likely to become equally gratuitous.

Such a tendency in England would doubtless not fail to excite much opposition. It was in 1884 that children attending the Paris elementary schools were first fed on a large scale at the public cost. Paris has therefore had 23 years of practical experience of what has not yet been done anywhere in England. But a law has now been passed. The Provision of Meals Act of 1906 empowers the English school authorities to take some steps in this direction. All the arguments now brought forward in England against the free feeding of children were heard in France a quarter of a century ago. What has become of such arguments in the face of practical experience is shown by the facts and figures given above. Some will be tempted to deplore the result; none can afford to ignore this Paris experience, for it constitutes the greatest object lesson that has ever been given on the subject. The Paris experiment is not as radical as that attempted by the municipality of Vercelli where, as already described,² every child is compelled to take his midday lunch at school and no parent is allowed to pay, but then Vercelli is quite a small place, while Paris is the second largest town in Europe. In 1905 there were in Paris 202 public schools for boys and 202 public schools for girls. The number of pupils inscribed were 79,698 boys and 74,124 girls. Of these 24,023 boys and 14,157 girls attended school during the holidays, where they were watched and fed but not taught. The allowing of children to play in the school building instead of the streets during the holiday is an excellent measure to keep them out of mischief and to insure their being properly fed. Altogether the town of Paris spends on primary education about £1,280,000 and the feeding of the children does not amount to one-thirtieth of the entire outlay. The cost is therefore in no wise to be compared with the importance of the service. The benefits to public health and to the growing intelligence of the pupils are generally recognised to be out of all proportion compared with the expenditure; no outlay has ever given better results.

Of course, the feeding is but part—doubtless the most important and expensive part—of a whole system of physical education. One advantage of the meal at school is that when the attending school physician prescribes a special diet or certain medicaments with the meal the pupil gets them. At home such medical instructions would not always be as punctually executed. Then the great harm done by calisthenics when imposed on starving school children is avoided, because in the Paris schools the children cannot starve. Finally, when consumption and other diseases may be avoided by sending the child to the country or seaside this can often be done as there is a large municipal subvention for that purpose. If we compare the completeness of all these measures, the care with which they have been combined to supplement each other, with the comparative chaos that prevails in the English elementary schools, it is not surprising to find that so much more is said about physical degeneration on the British than on the French side of the Channel.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Slums.

THE medical officer for the Northwich urban district in his annual report makes some interesting remarks on the effect of "slums" on the health and *morale* of the population. He believes that proper housing would lower the mortality by more than one-half, would decrease infectious disease by three-fourths, would sweep away nearly all the anæmic, undersized, scrofulous beings who now crowd our alleys, almost stamp out tuberculosis, and do much to elevate the moral and mental refinement of the bulk of the people and lessen the need for workhouses, prisons, asylums, sanatoriums, epileptic colonies, and hospitals. This is a long catalogue of benefits, and perhaps a somewhat optimistic view, but there is no doubt that the evils named, with their accompanying

wretchedness, would be greatly alleviated if houses were light, airy, and wholesome, and overcrowding was abolished. It is to be feared, however, that no improvement would follow very rapidly. The "residuum" is not yet educated up to a very high level, and his instincts are not those of a high civilisation. Also it is a splendid notion to "check the erection of slums by the jerry-builder, and provide houses of a proper character for those who need them." But unfortunately that kind of work in Manchester has proved costly to the ratepayers, and municipal enterprises do not seem to be managed with the care and economy necessarily exercised in private ventures.

Afraid of a Hanging Man.

A strange incident came to light at the coroner's court the other week when the death of a man by hanging was being inquired into. He was 75 years of age, and was found by his niece suspended by a rope to a clothes' rack. She did not cut him down, nor did her husband, as they said "they were too unnerved." The coroner suggested that they wanted to be quite sure the man was dead. "He looked as if he was dead." They sent for a policeman who came in half an hour. "So you left him for half an hour?" "Yes, sir." Speaking to the jury, the coroner said that some day a verdict of manslaughter would be brought against people who left anybody hanging and did nothing. Such an occurrence as this shows a degree of mental and physical unreadiness enough to make one almost hopeless as to the future of a large proportion of our urban population. In any emergency, instead of being alert and ready to act promptly, they are timorous to imbecility. It is to be presumed that both the niece of the poor suicide and her husband have shared the blessings of the education that has been so liberally imparted for the last 30 or 40 years, but what effect has it had in giving them character or courage? It would have been well if the man had gone through such an amount of military drill as to bring out some of the readiness to act that the book knowledge which he must be supposed to have imbibed evidently failed to give. The verdict was one of "*Felo de se*," and the jury gravely agreed with the remarks of the coroner as to "the folly of leaving anybody hanging."

Dirty Milk.

The farmers of Saddleworth are indignant at charges having been made of uncleanness in their dairies and carry the war into their customer's country by complaining that some of them are anything but cleanly. They say that jugs are used for days together without being washed, and if the farmer protests he is told that they *must* be clean because they have had nothing else in them but milk. Sometimes, say the purveyors, customer's milk has to be poured into old salmon tins and jam pots. It is difficult to eradicate habits of slovenliness and dirt which have become habitual to too many of the working population, and there need be no wonder that the farmer sometimes hits back.

April 9th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

The St. Andrew's Ambulance Association.

A POINT of considerable importance, more especially to those interested in ambulance work in Scotland, has been raised by the action of the Order of St. John of Jerusalem in petitioning the Privy Council for a supplementary charter to enable it to establish priories in Scotland. The St. Andrew's Ambulance Association has lodged a counter-petition submitting that the power to establish priories in Scotland would, if granted, be detrimental to the interests of the public and unjust to the Association. The St. Andrew's Ambulance Association was established in 1882 with the object of providing instruction in ambulance work in Scotland and rendering first-aid to the injured and a Royal Charter of incorporation was granted in 1899. The Association has been very successful indeed in carrying out the objects for which it was incorporated, and has now come to be recognised as an important charitable and philanthropic institution. An ambulance corps of 2500 officers and men has been distributed in sections throughout Scotland and the corps is rapidly increasing in numbers. Upwards of 400 classes are conducted by the Association every year and the area of instruction embraces

² THE LANCET, Nov. 10th, 1906, p. 1308.

Health Office." The address was illustrated by microscopical specimens and contained suggestions for the prevention of tuberculosis on lines similar to those in every-day use at the present time. Arrangements have been made for creating a memorial to commemorate this great discovery.

Small-pox.

The epidemic of small-pox which is at present prevailing in France has passed the Franco-German frontier and the disease has made its appearance, especially at Metz. A considerable number of cases have occurred there, but to the annoyance of the adversaries of vaccination it is found that the disease attacks only persons who have not been vaccinated. In the frontier districts and in Metz also there are a great many foreigners who have come from countries where vaccination is either not compulsory or else is not efficiently performed. In Metz and its neighbourhood thousands of Italian workmen live who are employed there, as in a great part of the continent, in the building trades. As they are neglectful of vaccination and as their standard of living is inferior to that of the native population they are peculiarly liable to contract small-pox. The disease is also of frequent occurrence among the French and Belgian residents in Metz, whilst the German inhabitants, who have all undergone vaccination, are exempt. The French newspapers have called attention to these facts and are recommending compulsory vaccination after the example of Germany where small-pox, apart from the frontier districts, has been quite unknown for years.

April 5th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Pulmonary Tuberculosis in Budapest.

Dr. Gustav Thürring, director of the city statistical bureau, has published the details of last year's death-rate from various diseases in Budapest. He states that during the last 32 years 85,813 of the inhabitants died from tuberculosis, this disease accounting for 22 per cent. of all the deaths. Owing to recent improvements in the hygienic conditions of the city the death-rate from tuberculosis is now considerably lower than in former years. In 1876 the proportion of deaths caused by this disease was 855 per 1,000,000 of the population, but last year it averaged only 373 per 1,000,000. The death-rate of men is much higher than that of women. The unmarried are much more liable to death from pulmonary tuberculosis than the married of either sex. The death-rate from tuberculosis was comparatively low in districts inhabited by the wealthy classes, but was very high in districts where the poor live in flats and where the accommodation for a family consists either of one room or at most of two rooms.

Tragic Death of a Medical Man's Wife.

In Brassó, a large country town in Hungary, the wife of a medical practitioner—Dr. Flechsenbaum—became ill and it was absolutely necessary that an operation should be performed. Her husband wished her to go to a sanatorium where a member of the staff would do what was required, but she insisted on her husband performing the operation himself, because she would not on any account let another man touch her. He therefore telegraphed for another medical man, a relative of hers, and the two proceeded to perform the operation at the patient's home. It was almost completed when a serious hemorrhage occurred, which they were unable to check, so that the patient died on the operating table. The unfortunate husband is prostrated with grief.

Medical Organisation in Hungary.

In the Budapest Medical "Casino" Dr. Turán Bölg recently delivered a very interesting address on the subject of the influence exercised by the various medical organisations on the social, ethical, and material position of the profession at home and abroad. He said that it was of great importance to the community at large that medical education should be efficient and that public hygiene should receive proper attention; the position of the medical profession, therefore, could not be a matter of indifference for the State. He maintained that the status of the medical profession was unsatisfactory in most parts of Europe but that its prospects were best in the industrial countries where the standard of living was good and where culture and public health were at a comparatively high level. Of the various professional organisations the best results were shown by voluntary

associations built up on a sound economical basis. The prospects of the medical profession in Hungary were gloomy and would be further aggravated by the poverty of the people, by the extension of the system of insurance against sickness (*Arankenkassen*), and especially by the new Workmen's Compensation Act. Improvement could be expected only from organisations which also served at the same time the community at large.

Hungarian Surgeons on Board Cunard Steamers.

According to the Hungarian emigration law every vessel carrying over 500 emigrants from Hungary must have a Hungarian surgeon on board. This regulation has a particular reference to the Cunard steamers, which carry twice a week more than 1000 Hungarian passengers from Fiume. Hungarians have, in fact, been employed as second surgeons on the Cunard steamers since 1904, but none of them look on their appointments as permanent because they see that a position of that kind held for many years would be almost unbearable. In the first place, they have no prospect of advancement because the company holds out no hope that they will ever be transferred to saloon steamers, in which the pay is higher and in which extra fees may be received. Another grievance is that the Hungarian law orders the ship surgeons to send information to the Government about the state of health of the emigrants, whereas the Cunard Company strictly prohibits the giving of information. The Hungarian surgeons are also subordinate to the captain and some others of the ship's officers, as well as to the English surgeon. The pay is very little—only 6s. 8d. a day, with full board. Dr. Henrik Neumann, who was in the Cunard Company's service for two years, has therefore asked the Board of Physicians to negotiate with the company with a view to improve the position and to increase the pay of the Hungarian ship surgeons.

April 6th.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The

following is the list of prizes awarded for the winter session, 1906-07:—Descriptive Anatomy: Junior: J. T. Duncan, first prize (£2) and medal; and T. Dowzer, second prize (£1) and certificate. Senior: H. G. P. Armitage, first prize (£2) and medal; and W. Swan, second prize (£1) and certificate. Practical Anatomy: First year: T. M. Thompson, first prize (£2) and medal; and F. W. Warren, second prize (£1) and certificate. Second year: W. Swan, first prize (£2) and medal; and H. G. P. Armitage, second prize (£1) and certificate. Practice of Medicine: C. Greer, first prize (£2) and medal; and G. S. Lewis, second prize (£1) and certificate. Surgery: G. S. Lewis, first prize (£2) and medal; and W. R. Burton, second prize (£1) and certificate. Midwifery: H. W. White, first prize (£2) and medal; and G. S. Lewis, second prize (£1) and certificate. Physiology: H. M. Adoo, first prize (£2) and medal; and O. G. Connell, second prize and certificate. Chemistry: P. F. Crowe, first prize (£2) and medal; and J. T. Duncan, second prize (£1) and certificate. Pathology: I. Scher, first prize (£2) and medal; and C. Greer, second prize (£1) and certificate. Physics: J. T. Duncan, first prize (£2) and medal; and T. Buckley, second prize (£1) and certificate.

LITERARY INTELLIGENCE.—The third edition of Vol. II, Part 3, of Allen's Commercial Organic Analysis is just ready for publication. The subjects dealt with are: Acid Derivatives of Phenols, Aromatic Acids, Resins and Essential Oils. Much of the work of revision has been done by Mr. A. R. Tankard, F.C.S., deputy agricultural analyst for Monmouthshire and the county borough of Newport. With its issue the complete work in eight volumes may now be procured. The publishers are Messrs. J. and A. Churchill.—Messrs. Baillière, Tindall, and Cox announce that they are publishing a third edition of "The Diagnosis and Modern Treatment of Pulmonary Tuberculosis, with Special Reference to the Early Recognition and Permanent Arrest of the Disease," by Dr. Arthur C. Latham; a fifth edition of "Treatment by Hypnotism and Suggestion, or Psycho-Therapeutics," by Dr. C. Lloyd Tucker; and a work on "Meat and Food Inspection," by Dr. W. Robertson, medical officer of health of Leith and Perth. The same firm has published a second volume completing the "Manual of Anatomy (Systematical and Practical)," by Dr. A. M. Buchanan, professor of anatomy, Anderson's College, Glasgow, and a work on "Ulceration of the Cornea" by Dr. Angus Macnab, chief clinical assistant to the Royal London Ophthalmic Hospital.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Police and the Preservation of Water-courses.

THE Minister of Agriculture has appointed a commission to study the recently proposed legislative and administrative measures to complete the existing laws concerning the preservation by the police of non-navigable water-courses, springs, and underground water, with a view to safeguard them for useful purposes; the commission will be presided over by the Minister of Agriculture.

An Unusual Case of Epithelioma.

The case occurred in a young girl, aged 22 years, who had already been twice operated upon for a cyst of the lower jaw. In spite of repeated cauterisation a suspicious ulcer had persisted and enlargement of the glands was noticed. On further examination a solid tumour was found over the ascending ramus of the maxilla. M. Morestin operated through the mouth and completely removed half the lower jaw, besides extirpating the diseased cervical glands. There has been no recurrence during two years. The tumour proved to be an epithelioma of stony hardness and is an instance of the metamorphosis of a cystic tumour to a solid one. M. Maucclair, who communicated this case to the Société de Chirurgie (March 27th) in M. Morestin's name, is inclined to question whether the total resection that was performed was really absolutely necessary.

Gift to the Academy of Medicine.

The Academy of Medicine has been given authority to accept, under the conditions and terms expressed, the legacy left it by M. Roussilbe, the interest of which is to be devoted to the foundation of a prize to be awarded periodically to the investigator who shall make the greatest advance in dermatology. The prize is to be known by the founder's name.

A Method of Inducing Hemostasis in Hemophilia.

Dr. Emile Weil has shown that fresh animal or human serums in doses of three drops to the cubic centimetre of blood induce coagulation to a moderate degree in hereditary hemophilia and completely in the idiopathic disease where normally the blood would coagulate in five or ten minutes. In practice, to stop or to prevent hæmorrhage in an adult hæmophile from 10 to 20 cubic centimetres should be injected hypodermically. Rabbits' blood should be used for this purpose. This method was communicated to the Chirurgical Society on March 6th by M. Broca on behalf of Dr. Emile Weil.

Boulimia (Sitomania).

At the Neurological Society on March 7th M. Gilbert Ballet recalled the fact that when two cases of boulimia were shown at a previous meeting he had opposed the opinion of other authorities that this disease was an impulsive psychosis and had tried to prove that, on the contrary, it belonged to the intermittent variety, particularly to melancholia. A third case that he had recently seen, in which the boulimia was followed in a fortnight by typical melancholia, gave support to his theory of its pathogenesis. M. Dupré replied that it would be better not to say that boulimia was a variety of melancholia but that the two diseases might be associated, for otherwise phenomena of excitement and depression would seem to be developed simultaneously.

Fatal Influenzal Pneumonia and Enteritis.

At the Hospitals Medical Society on March 22nd M. Siredey and M. Tinel reported two cases of patients suffering from influenza pneumonia, who both developed symptoms of severe enteritis, with frequent and excessive diarrhoea, the stools being of a mucous character and followed shortly by collapse and death. They compare these to two other surgical cases where death occurred in a similar manner, but these latter were not followed with so much care as their own and they can only be quoted to show that this affection forms a more frequent complication of influenza than is generally believed. From cultures made from stools the authors were able to isolate two varieties of micro-organisms whose characteristics were ill defined and did not conform to any known type.

April 8th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Report of the Medical Officers to Schools.

Professor Hartmann, the chief medical officer to the Berlin municipal schools, has presented his annual report to the Berlin municipal authorities. The report states that there are 36 medical officers to the Berlin schools, which are attended by 225,237 children. There were 32,902 children examined by the medical staff previously to their entering a school and 3056 of them were refused admittance on the ground of suffering from various bodily and mental diseases. Of the new pupils 7335 were put under special supervision, and these added to the number already under special supervision made up a total of 29,622 children in this category. The report mentions that a good understanding prevailed between the medical officers and the teaching staff; the parents, however, sometimes thought that it was a part of the duties of the medical officers to attend their children in cases of illness. Even teachers in several instances held this erroneous opinion and sent sick children to the private consulting rooms of the medical officers. In Berlin the children were examined in the presence of the mother or some other relative and if found to be healthy no other examination took place. The parents were in general very grateful for suggestions made by the medical staff as to preserving the health of the children and they listened attentively to the advice given to them during the examination of the children. They also received a pamphlet, published by the Berlin Society for School Hygiene, containing the principles of hygiene for children. This pamphlet was, moreover, posted on the walls of the schoolrooms. The report then gives particulars with respect to recent improvements in the ventilation, heating, and sanitary arrangements of the schools. An inquiry was held in one school on the use of spirituous liquors by children and it was ascertained that 2 per cent. of the children took spirits regularly, while 2.1 per cent. took wine and 8 per cent. took beer. A special investigation on the hours of sleep was also carried out by one of the medical officers. He found that 10 per cent. of the children went to bed later than 10 P.M., and he argues that the schools in Berlin begin at too early an hour—namely, at 7 A.M. in summer and 8 A.M. in winter. From 10 to 20 per cent. of the children go to school without having had a warm breakfast. About 40 per cent. of them sleep together with other persons in the same bed, either with their parents or with brothers and sisters, and the report draws attention to the fact and the danger of this custom is open to several objections, both of a moral and of a hygienic nature. The prevalence not only of diphtheria, scarlet fever, and other acute diseases, but also of tuberculosis, is, of course, greatly favoured by this practice. In the next place the report deals with the subject of employments in which school children are engaged. It is stated that a great many of them earn money, especially by going on errands, and some of them are at work early in the morning before school begins, the consequence being that they are very tired and inattentive during lessons. The teeth of the majority of the children proved to be very much neglected; only a minority of them brushed their teeth and of these only very few had a tooth-brush of their own, most of them using one in common with other members of the family. The report then gives particulars as to the prevalence of infectious diseases and the temporary closing of schools as a preventive measure during epidemics of scarlet fever, diphtheria, &c. It will be seen from the above summary that the report of the medical officers to the Berlin schools contains a great amount of valuable and interesting material and that although their office is of recent creation these gentlemen have done a good deal to improve the health of the children.

Commemoration of the Discovery of the Tubercle Bacillus.

Professor Löffler, writing to the *Deutsche Medicinische Wochenschrift*, draws attention to the fact that on March 24th it was 25 years since Professor Robert Koch made his first public announcement with respect to the etiology of tuberculosis. For personal reasons it was before a rather small society—namely, the *Physiologische Gesellschaft*—that he read his celebrated paper which on the agenda of the proceedings figured modestly as "An Address on Tuberculosis by Dr. Koch, Member of the Imperial



THOMAS HENRY WARLEY, F.R.O.S. ENG.,
SENIOR EDITOR OF "THE LANCET."

Obituary.

THOMAS HENRY WAKLEY, F.R.C.S. ENG.,
SENIOR EDITOR OF THE LANCET, CONSULTING SURGEON TO THE
ROYAL FREE HOSPITAL, AND JOINTLY SENIOR FELLOW OF
THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

WE regret to announce the death at his residence in Queen's-gate of Thomas Henry Wakley, the senior proprietor and editor of this journal. Thomas Wakley (he deliberately made no use of his second name) was born on March 20th, 1821, and had therefore passed the eighty-sixth anniversary of his birthday by a few days when he died. He was the eldest of the three sons of Thomas Wakley, the well-known coroner and Member of Parliament, who, by founding THE LANCET, inaugurated a movement for medical reform the extent of which can hardly be realised, especially as revolutionary movements at present taking place are the direct outcome of his original programme. He dropped the use of "Henry" in his name possibly because his next brother, Henry Membury Wakley, also bore the name, but with more probability because the great affection and reverence in which he held his father made him prefer to be called, like him, simply "Thomas Wakley." THE LANCET made its first appearance two and a half years after the birth of the founder's son, the subject of this memoir, but that the son should succeed in the father's footsteps as editor of the journal, which grew up with him, was in a certain measure an accident. Thomas Wakley was educated with the intention that he should enter the Church, and with this view was carefully tutored in the classics preparatory to his matriculation at Oxford. It is a point of interest that his private tutor was the Rev. James Basnett Mills who was also private tutor to the famous Platonist and Master of Balliol, Benjamin Jowett.¹ As a lad Thomas Wakley showed great aptitude for the *literæ humaniores*, but his connexion with the University of Oxford was extremely brief. At the time of his matriculation his father was a leading Radical, one of the foremost in the House to promote the more reasonable part of the Chartist programme without actually subscribing to Chartist doctrines. But such emancipated opinions were not acceptable at Oxford, where young Wakley found the political and social creed which he had been brought up to admire regarded as not very distinguishable from high treason. Fortunately, the University of London had been founded a few years previously as a practical protest against the limitations of the older universities every whit as much as with the idea of promoting the cause of metropolitan or imperial education, and to the University of London Thomas Wakley took himself, selecting the medical faculty of University College for his labours and giving up all idea of the Church. In these days the medical teachers or professors of University College were an extremely distinguished band, numbering among them Samuel Cooper, of the Surgical Dictionary;

Liston, the most marvellous operator in London; Richard Quain, the author of the Anatomy of the Arteries; Anthony Todd Thompson, author of "The Dispensatory"; Robert Carswell, the famous pathologist; Robert Grant, the comparative anatomist; and Sharpey, the leading physiologist of the day. An industrious student had extraordinary opportunities at such a school, and young Wakley became known to more than one of his teachers as a promising pupil, showing in particular great aptitude for surgery and surgical anatomy. He was also admirably coached, for his father, with the same determination that had previously led to the selection of Mr. Mills as a classical coach—a determination, namely, that the young man should enjoy the best possible educational advantages—now persuaded Erasmus Wilson, at that time lecturer on anatomy at the Middlesex Hospital, to read with his son. Wilson and his pupil got on well together and Wakley acted as demonstrator at his coach's private classes with great benefit to himself. In the year 1845 he took the diploma of Membership of the Royal College of Surgeons of England, having previously proceeded to Paris in deference to his father's views that the scheme of medical education enjoyed by the Parisian students was preferable to that of the London medical schools.

In Paris he lived most of the time of his sojourn with Dr. J. Henry Bennet, the gynaecologist, and was an assiduous attendant at all the clinics of the best operating surgeons in the city. When he was not engaged in his medical studies he spent his time and his money in taking music lessons (from Garcla among other masters) with the result that when he returned to England he was a trained musician and good French scholar as well as a surgeon of large experience considering his age. His knowledge of French to his regret deteriorated, but he retained his love of music during all his life; indeed, so lately as 1903, on the occasion of the marriage of a very near relative, he composed a wedding march which, we believe, attained a considerable amount of favour. In the year 1848 he was elected assistant surgeon to the Royal Free Hospital, a hospital which was started in 1828 in a building at Hatton-garden as a protest against the system of letters by which the subscribers to the medical charities of London were able to dispense patronage upon exclusive principles. This hospital made a great stride forward in 1842 when it was removed to its present site, and the appointment formed an admirable opening for a young consulting surgeon. Wakley entered into the spirit of his duties with enormous enthusiasm. He felt that he had got his chance while he was quite a junior man, but, although he was by no means blind to the advantages of having his father and THE LANCET at his back, he now set out with the deliberate intention of making a name for himself in surgery. He took a house in Guilford-street so that he might be quite near the hospital and for several years became, more or less on his own initiative, casualty surgeon to the institution. His house was so near to the hospital that it was inevitable that the resident staff should appeal to him in all cases of difficulty, and he was delighted with the opportunities which he thus got for increasing his experience. But

¹ Early in its career THE LANCET was printed and published in Fleet-street by the firm of Mills and Jowett, and Mr. J. B. Mills and Professor Jowett were respective sons of the members of the firm.

he was soon to find that the value of having a distinguished father might be considerably discounted if that father happened to be an aggressive man. Many of our readers know the literary and business methods which characterised the first 25 years of the life of THE LANCET. The journal was founded to remedy the numerous abuses from which members of the medical profession suffered in their professional life, and on all occasions the founder and editor took the shortest course towards the results which he wished to attain. He mixed words with no one, he spared no man's feelings, he did an incalculable lot of good, he made a great many distinguished friends, but he also raised up a host of enemies, many of them well-known and influential people who quite honestly regarded his methods as pernicious. Now if there was one point upon which the editor of THE LANCET was more clear and more eloquent than another it was the mischief done at the metropolitan hospitals by the appointment through nepotism of the wrong men to fill the posts on their staffs. When, therefore, the son of the editor of THE LANCET, while still a young man and with a record for work behind him which had largely been accomplished in another country, was appointed to the staff of the Royal Free Hospital, all the critics of THE LANCET, honest as well as prejudiced, were prepared to consider that the appointment was an example of the very abuses against which THE LANCET was never tired of fulminating. Young Wakley soon became conscious that his hospital practice was attracting an amount of interest not usually manifested in the work of so young a practitioner, and when the opportunity of the opponents of THE LANCET came he was not found unprepared. Wakley was accused of malpraxis in a case of fracture in a child complicated with scarlet fever. He refused to pay blackmail to the parents and disregarded the publication of a scurrilous and indecent pamphlet purporting to be a record of the case, although this was hawked about the street where he lived. An action was at length brought *in forma pauperis*. The accusation came at an extremely unfortunate moment for Wakley, as he had intended to present himself at the end of the year 1849, just about the probable date of the trial, for his final examination for the Fellowship of the Royal College of Surgeons. Moreover, it was reported that some of the examiners had been subpoenaed to appear for the prosecution. At this juncture Wakley displayed great powers of resolution. He was ordered by his father not to present himself for the examination on the ground that the mental strain would militate against his chances, and that if he failed the fact would inevitably come out at the trial and damage him in the eyes of the jury. The founder of THE LANCET was a masterful man and it was not the habit of his children to say him nay, but Wakley resolved to proceed with the examination unknown to his father and passed triumphantly on Dec. 6th, 1849, a date which, by the way, made him at the time of his death senior Fellow of the College bracketed with Mr. George Carrick Steet, who took the same diploma on the same day. The trial came on on Dec. 10th and was a veritable triumph for Wakley. The only surgeon called for the plaintiff gave evidence for the defendant, the

unanimous opinion of the distinguished authorities appearing as witnesses for the defendant could not be questioned, and the private malevolence which, together with the hope of blackmail, had instigated the prosecution was fully revealed. The jury, who had previously manifested a desire to stop the case, found a verdict for Wakley without leaving the box.

Shortly after this Wakley, whose position as an operating surgeon was now well established, moved from his unambitious address in Bloomsbury to No. 7, Arlington-street, where he enjoyed for many years a good surgical practice, many of his clients belonging to the highest ranks of society. With regard to several such patients, when the lapse of time had removed all possible chances that he was committing any breaches of professional confidence, he used to tell humorous stories. One in particular dealt with a man famous in the history of England. An old gentleman who would never give any name used to come day after day, often several times in a week, to consult Wakley about a chronic ailment of his foot. He declared that he had consulted some of the first surgical opinions in the country about his trifling ailment and that they had been unable to do anything for him. He proposed that he should pay Wakley a definite sum every week and that Wakley should attempt a systematic cure. He was told that he could come when he liked if he paid the usual fee, which at that date was one guinea. He would not give his name. After a time the foot began to yield to treatment and a pleasant source of revenue for a young surgeon in a new and expensive house bade fair to cease. Still Wakley remained in ignorance of the identity of the old gentleman. But one day his servant came to him in much excitement and said that he had suddenly remembered why the mysterious patient's face had been familiar to him from the first. He had seen him at prize-fights and he was Lord —, mentioning a great peer who is reported to have twice refused to be Prime Minister of this country, and who certainly after the death of the Duke of Wellington had succeeded to the unofficial post of private general adviser to the Crown. Wakley always considered it a joke against both Lord — and himself that he should not have known by sight so distinguished a man living a stone's throw from his door, and that the recognition should have come from his servant through the mutual taste of the butler and the peer for what was then called "the noble science." While in Arlington-street Wakley made a special study of diseases of the urethra and invented an ingenious form of dilator which in his hands gave very good results. He was also the first observer to see the use to which glycerine might be put in practical surgery owing to its deliquescent properties. An article on the point, published in THE LANCET attracted considerable attention and incidentally gained for him some reputation as an aural surgeon, as it was in relation to the treatment of affections of the external auditory meatus that his experiments were made. He also wrote the article upon Diseases of the Joints in one of the later of the many editions of Samuel Cooper's famous

¹ We prefer to imitate Mr. Wakley's discretion, even though it is easy to see to whom the reference must be.

"Surgical Dictionary," and published an interesting series of experiments in the anaesthetisation of various animals and birds.

In 1857 his father, who five years previously, owing to ill-health, had resigned his seat in Parliament, made an arrangement by which his eldest and youngest sons became part proprietors of THE LANCET and had a share in the management of the journal. In 1862 the father died and the editorial conduct of THE LANCET passed to the youngest brother, the late Dr. James Wakley, who, indeed, in all but name had been editor for several years, but Thomas Wakley as part proprietor of the paper was actively interested in its conduct. From this time his life as an active surgeon to some extent was doubled with the life of a journalist, although he did not actually retire from consulting practice until 1882. But he came daily to THE LANCET office and acquired such experience of practical journalism that he was able upon the death of his brother in 1886 to assume the editorship in association with his son. Dr. James Wakley had been educated and bred as a journalist, while Thomas Wakley turned to journalism comparatively late in life, but under his rule the journal has steadily progressed. His ideas were always shrewd and practical; for instance, the publication weekly of an index of advertisements was due to him, and the convenience of the innovation has since been recognised by other papers. We cannot be expected to criticise him in his capacity, as our senior editor; that must be left to other pens, but we may be allowed to say that from the first he made good headway against the inevitable drawbacks of entrance upon the career of a journalist at so late a date in his life, and that he was unsparing of himself in his energetic desire to do good by the medium of his journal. Of unbounded activity, physical and mental, he was never ill and never absent from his duties. In all weathers and on all occasions he arrived in the early morning at his office. For many years he spent the winter months in Brighton but he never allowed this to interfere with his regular and punctual attendances at THE LANCET office. So late as 1903, when he was in his eighty-second year, he made the journey from Brighton to London and back daily, not omitting even Saturdays. During the last decade of his life the editorial management of the journal gradually passed from the hands of the father to the hands of the son, but to the end of his life Thomas Wakley showed no abatement of interest in the details of the paper. He continued to come daily to the office and could always be relied upon in cases of unusual difficulty or doubt for a sound and sensible consulting opinion. One subject he retained in his own hands entirely. During all the period in which he was associated with the editorship of THE LANCET great prominence was always given to the work of the Hospital Sunday Fund. The Fund was largely founded by Dr. James Wakley, and Thomas Wakley resolved that the interest manifested by his brother should not be allowed to die out. He personally supervised the publication every year of a special supplement issued in the interests of the Fund, and was an assiduous attendant at the meetings of the General Purposes Committee, of which he was a member, and of the meetings of the Council. His deep sympathy with the material welfare of the medical profession was shown not only by many acts of private generosity but by the institution of THE LANCET Relief Fund. The income of this Fund since its foundation in 1889 has been supplied by himself and his son as the proprietors of THE LANCET. The Fund was intended to meet unforeseen and urgent pecuniary exigencies among members of the medical profession, and the proved utility of this scheme of practical generosity was always a source of great gratification to its originator. He was also a warm supporter of Epsom College, his advocacy of this useful foundation taking in 1902 the practical form of a

donation of £1000, given in the name of "The Proprietors of THE LANCET," while he was always ready to support the claims of the College, educational as well as eleemosynary upon medical practitioners. He was interested in the ambulance department of the Order of St. John of Jerusalem, was Knight of Grace of that Order, and a member of the committee of the Jerusalem Ophthalmic Hospital.

Mr. Wakley's private life was a very quiet and retired one. He married when a young man the third daughter of the late Francis Radford Blake of Rickmansworth, so that the year of his golden wedding had gone by when he died. Outside his duties as surgeon and journalist Mr. Wakley's chief pleasures lay in sport. In his youthful days he had been a fine runner and athlete. He was a first-rate rider, and until quite late in life hunted whenever he got the opportunity. He was fond of salmon fishing, regularly visiting Ireland for many years for the purpose. He was also, like his brother James, an enthusiastic shot, and until the end of his days took the greatest delight in the sport.

With regard to his last illness—which within the memory of all who knew him was his first illness—there is little to be said. Some six or seven weeks ago he found himself troubled with attacks of breathlessness. He was assiduously cared for by Dr. Alfred Baldock in consultation with Sir Richard Douglas Powell, and in his temporary absence with Sir Lauder Brunton, but it was not possible to arrest the increasing cardiac weakness. An absolutely uncomplaining patient, in the end he peacefully passed away in the presence of his family. He was quite prepared for the event, having stated his belief when he first consented to seek medical advice that his days were numbered. He leaves a widow; a son, Thomas Wakley, junior, who has for the last 20 years been his father's colleague in the editorship of this journal; and a daughter.

A funeral service was held in St. Mary Abbots Church, Kensington, on Wednesday, April 10th. The vicar of the parish, Canon Pennefather, took the service, being assisted by the Rev. J. A. Lewis. Among those present were Mr. Henry Morris, President of the Royal College of Surgeons of England; Dr. S. Monckton Copeman, representing the Medical Department of the Local Government Board; Sir Shirley Murphy, medical officer of the County of London; Dr. D. Nicolson, O.B., Lord Chancellor's Visitor in Lunacy; Dr. John Tatham, superintendent of statistics to the General Register Office; Sir Edmund Hay Currie, representing the Metropolitan Hospital Sunday Fund; Dr. Dawson Williams, Editor of the *British Medical Journal*; Sir Guy Elliston, secretary of the British Medical Association; Sir Henry Bardett, K.O.B.; Mr. Conrad W. Thies, secretary of the Royal Free Hospital; Mr. J. B. Lamb, secretary of Epsom College; Mr. W. Shroeder, deputy coroner for Central London; Dr. J. G. Glover, Mr. Sandford, Mr. D. R. Harrison, Dr. A. Baldock, Mr. O. McCall, and many past and present members of the editorial staff of THE LANCET, and members of the printing and publishing departments. After the service, in accordance with the wish of the deceased, the remains were cremated at Golder's Green.

The admirable portrait on the adjoining page is reproduced from a photograph taken when Mr. Wakley was aged 85 years. The presentation is life-like.

A great many letters of sympathy have been received by us, of which we select the following for publication, with the permission of the writers, who in each case were old-established and personal friends of Thomas Wakley:—

100, Harley-street, W., 7th April, 1907.

MY DEAR MR. WAKLEY,—I am deeply grieved to receive the news of your father's death. When I realise that he is no more my thoughts insensibly go back to the time when I first came to know him, five and thirty years ago. At once I was impressed by his robust physique, alertness, and vigour. His handsome face, his well-knit frame, his elastic

of white phosphorus in match making. It states that many manufacturers, and Messrs. MOSELAND among them, have spent considerable sums of money in the endeavour to make a "strike anywhere" match without white phosphorus, but in spite of various inventions, some of which are strongly advocated by those who have patented them, it does not seem that they are yet in a position entirely to replace the white phosphorus match. Custom, no doubt, has some influence and it is also said that matches made with white phosphorus have the advantage of greater resistance to damp and greater freedom from explosive ignition, not only in manufacture but also in use by the consumer. The report proceeds to say that it would, of course, be easy, and would relieve the Factory Department of much trouble, to put an end to the possibility of necrosis by totally prohibiting the use of white phosphorus. But this step would seem logically to involve the prohibition of the use of many other substances which are largely used in industry and which have caused a much larger number of industrial accidents. Mr. CURTIS and Dr. WHITELEGGE for the present do not think that the character of the cases of necrosis which have occurred render it necessary to prohibit the use of white phosphorus.

There is another solution of the difficulty to which they look forward with hope. They are of opinion that an effective remedy can be found in automatic machinery with exhaust ventilation so arranged (1) that the whole of the fumes generated are completely carried off without coming in contact with the workers, and (2) that it is impossible for the paste to come in contact with the workers' hands or persons. Pending the introduction of completely automatic machinery it is obviously important to insist upon the greatest care being taken with regard to the very few persons in the factory who are exposed to phosphorus. Mr. CURTIS and Dr. WHITELEGGE recommend that the special rules in force in lucifer match factories should be strengthened and that the various firms engaged in the industry should be pressed to arrange for automatic machinery which shall completely isolate the operatives both from fumes and from the paste. They further suggest that an Inquest should always be held in case of a fatality attributable to phosphorus and that the attention of coroners should be especially directed to this point.

Public Health in Egypt.

In a Blue-book containing Lord CROMER's report on the administration of Egypt, No. 1 section relates to public health. 31,000 in-patients and 123,000 out-patients were treated in Government hospitals in Egypt last year. 1910 cases of small-pox were notified, as against 4189 in 1906; the number of plague cases has increased, however. Infant mortality continues very high. The lunatic asylum accommodation has recently been enlarged and a new asylum is to be opened at Khanka; it is hoped that during the current year Lord CROMER's previous suggestion of the necessity of a lunacy law will bear fruit. The campaign against ophthalmia continues vigorously, the necessity of establishing permanent ophthalmic hospitals to replace the tents for treatment is fully recognised and the first will be opened at Tantah during this year. The Government Anti-Rabic Institute has been working since May, 1906, with excellent results, and Professor R. Ross's campaign against mosquitoes in Port Said has greatly diminished malarial and other fevers. Similar action is being taken at Suez and Cairo.

Medical Education.

The Board of Education has issued as a Blue-book the reports from universities and university colleges participating in the Parliamentary grant. These include the Universities of Birmingham, Leeds, and Liverpool; the Victoria University, Manchester; King's College, London; University College, London, and Dundee University College. Particulars are given in each case where medical degrees and diplomas are granted of the number of students who have studied for them and of the scale of class fees.

HOUSE OF COMMONS.

MONDAY, APRIL 8TH.

Magistrates and Vaccination.

Mr. CLARKE asked the Secretary of State for the Home Department whether he was aware that the Lambeth magistrate had refused a certificate of exemption from vaccination.—Mr. GLADSTONE: The law requires an applicant to satisfy the magistrate that he conscientiously believes that vaccination will be injurious to the child and therefore I cannot take any action in the matter.

Osborne Convalescent Hospital.

In the course of the debate in Committee of Supply on the vote for £200 in respect of Osborne Mr. HARCOURT, the First Commissioner of Works, said, in replying to several Members, that the draining in connection with Osborne House had been found to be very bad when it was taken over as a convalescent hospital for officers of the army and navy. However, it had been thoroughly overhauled and now the building was possessed of the highest requirements for a convalescent hospital. His department had taken pains that it should have a good water-supply. Complaints had been made that Osborne was only available for officers of the army and navy and was not open to the non-commissioned ranks. Those who made that complaint had forgotten the terms of the gift of Queen Victoria. That was a splendid gift, and it had been received in an Act of Parliament. By its terms a part of the grounds and of the house was to be kept as at present as a memorial to her late Majesty, and the rest of the House was to be devoted to officers of the army and navy.

Mr. MORTON said that he saw in the estimates an item for the Osborne advisory committee. What was their work?

Mr. HARCOURT answered that this advisory committee was composed of a number of eminent surgeons and medical men who gave their services gratuitously to his department in making periodical inspections and in satisfying him that the hospital was being properly conducted. He thought that the least they could do was to pay the travelling expenses of these gentlemen. For his own part he could not speak too highly of the distinguished men who had given them the benefit of their services in this manner.

The subject then dropped and the vote was agreed to.

TUESDAY, APRIL 9TH.

A Seizure of Tinned Goods.

Mr. BRIST LAMB asked the President of the Local Government Board whether he was aware that at a recent auction in the City of London (March 27th, 1907) a large quantity of tinned goods were offered for sale, some of which were seized and destroyed as unfit for food by the port sanitary authority in whose district they were lying, although the owner of the goods stated that some of these goods were returned military stores from South Africa; and whether he was aware that a quantity of these goods were still in this country and on the way, and that arrangements were apparently being made to put them on the market from time to time at the rate of one-halfpenny per pound after expense of freight, storage, &c., had been paid; and whether, in these circumstances, he would take such steps as might be necessary in the interests of public health to prevent such sales.—Mr. JOHN BURNS (by written answer) replied: The facts appear to be generally as stated. Further legislation of the kind contemplated by the Public Health (Regulations as to Food) Bill now before Parliament is necessary for the proper dealing with a matter of this kind, but in the particular instance mentioned attention was given by the local authorities concerned to the condition of the goods sold at the auction. A special notice was exhibited at the auction to the effect that they were sold subject to being passed by the medical officer of health of the district in which they were lying; and steps were taken by the medical officers of health of the City and Port of London, of Stepney, and of Finsbury to obtain the surrender of such of the articles of food as were considered to be unfit for human consumption.

WEDNESDAY, APRIL 10TH.

Floods and Public Health in Ireland.

Mr. MEETHAM asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the medical evidence given before the Barrow Drainage Commission in 1885 by Dr. William Neale, medical officer, Mountmellick dispensary district, to the effect that houses were annually rendered unfit for habitation, and whole families had to leave in flood times and were huddled together in most insanitary houses, public health seriously injured, malaria and typhoid fever and diphtheria prevalent in consequence of the floods and that no adequate sewerage for the town was possible, and the water-supply was contaminated; and whether, having regard to the fact that the evils arising from the flooding had increased since this evidence was given 22 years ago, he would take steps to provide an effectual remedy. The honourable Member also addressed a question to the Prime Minister on the same subject in which he drew attention to the medical evidence given before the Barrow Drainage Commission by Sir Francis P. McCabe to the effect that the flooding of this area developed various diseases, including pulmonary phthisis, bronchial and catarrhal affections, and acute and chronic rheumatism.—Mr. BURELL replied to both questions: The Arterial Drainage Commission has only recently reported. The appendix containing the evidence has not yet been presented to Parliament. It is, however, in the printer's hands and will shortly be ready. When the evidence has been received it will be necessary to consider the recommendations of the Commission on Arterial Drainage as a whole in order to decide what legislation may be necessary and this will take time. It is obvious that in the meantime it will not be possible or desirable to consider the question of undertaking a drainage scheme for the Barrow or any other particular river. This answer applies also to the question which the honourable gentleman has addressed to the Prime Minister.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week such information for gratuitous publication.

ANDREW, GEORGE WAYLAND, M.B., C.M. Edin., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Honorary Surgeon to the Gloucester General Infirmary and Eye Institution.
ANGELLIS, A. A., M.D. Athens, L.S.A. Lond., has been appointed Clinical Assistant to the Evelina Hospital for Children, Southwark.
BLACK, EDWARD HAMPTON, M.B., Ch.B. Edin., has been appointed Assistant House and Visiting Surgeon to the Stockport Infirmary.
BUTCHART, JOHN E., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Resident Medical Officer of Austin Hospital for Incurables at Heidelberg, Victoria, Australia.
DAVIES, LESLIE, M.B. Melb., has been appointed Acting Officer of Health, Goulburn, New South Wales, Australia, during absence on leave of Mr. Robert George Reid.
DR. ZILVA, LUCIAN ARNOLD EMMANUEL, M.D., R.Sc. Lond., has been appointed Third Physician to the General Hospital, Colombo, and Lecturer in Physiology at the Ceylon Medical College.
ERCOLE, G. M. D. Bologna, has been appointed Medical Officer at the Grenfell Hospital, New South Wales, Australia.
GALLAGHER, J. M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Burgo District of the county of Lincoln.

de Miranda, L.M. & S., Bombay and King's College; Anthony Dias, King's College; George Douglas Gordon Fergusson, St. Mary's Hospital; Bernard Goldsmith, Middlesex Hospital; Alfred Barnes Gunasekara, Ceylon Medical College; Clifford Hall, Manchester University; Newcombe Herbert Harrison, Charing Cross Hospital; Arthur Hilary Clifton Hill, Middlesex Hospital; John Brookwood, St. Thomas's Hospital; Ernest Howden, Leeds University; Gwilym James, B.A. Cantab., King's College; Geoffrey Jefferson, Manchester University; Bertram Abbott Keate, St. Bartholomew's Hospital; Timothy Joseph Killard-Leavey, Guy's Hospital; Musunguesen Muthu Kumarasamy, Madras; Francis William Lastie, Sheffield University; Julius Luciani, M.D. Venezuela, University of Caracas; Kenneth Dalrymple Marriner, St. Thomas's Hospital; Robert Telford Martin, London Hospital; Maurice Charles Mason, St. Mary's Hospital; Bernard Constable Maybury, St. Thomas's Hospital; John Frederick Henry Morgan, University College, Bristol; Claude Woodham Morris, University College Hospital; Francis Leslie Nash-Worham, St. Bartholomew's Hospital; Charles Philip Augustine de Lacerda Pereira, Birmingham University; Wilfrid Langrish Pink, St. Thomas's Hospital; George Henry Pooley, F.R.C.S. Edin., Cambridge University; Frederick Charles Priddham, St. Thomas's Hospital; Edward Albert Seymour, St. Thomas's Hospital; Frank Lewis Smith, St. Thomas's Hospital; Vere Edward Somerset, King's College; Horace Steinbach, Guy's Hospital; Thomas Edmund Alexander Stowell, St. Thomas's Hospital; Alan Everley Taylor, D.A. Oxon., Oxford University; Charing Cross Hospital; James Massimo Todesco, London Hospital; Henry Ashburn Treadgold, B.A. Cantab., Cambridge University; Thomas Anger Perseman Tyrrell, St. Mary's Hospital; Louis Michael Waldron, London Hospital; John Pryce Williams, Manchester University and St. Mary's Hospital; and Raphael Yood, Manchester University.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—

At the preliminary science examination for the Licence in Dental Surgery the following gentlemen were approved in the subject of chemistry and physics:—

Ernest Beddoes, Holt School of Science, Birkenhead; Harold Rawbert Bentley, Technical School, Halifax and Leeds University; Henry Montague Browne, Science and Art Institute, Walsall; Victor Charles Burt, Charing Cross Hospital; Robert Morris Colwill, City of London College; Henry Charles Corke, Battersea Polytechnic; Niel Edgar, Birkbeck College; James Nutrie Frank, Technical School, Liverpool; John Trude Frupp, Polytechnic Institute; Lionel David Frihauf, Birkbeck College; John Wilfrid Hall, Guy's Hospital; Arthur Rusby Hawksley, Technical School, Liverpool; Percy Stanley Humm, Guy's Hospital; William Edward Jones, Technical Schools, Chester; William Joseph Kennedy, Guy's Hospital; Rupert Mallinson, Charing Cross Hospital; Christopher Claud Marston, Technical School, Leicester, and Birmingham University; Bertie Mendleson, Municipal Technical School, Swansea; Henry Leslie Messenger, Birkbeck College; Frederick Henry Newcombe, Holt School of Science, Birkenhead; James Ormrod, Technical School, Liverpool; Bertram Charles Salter, University College, Aberystwyth; Walter Herman Seales, Technical School, Liverpool; Norman Stefan Heegard Warner, Wandsworth Technical Institute; Alexander MacDonald Watson, Guy's Hospital; Lauder Lylestone Wight, Birkbeck College; Frederick Charles Willows, University College, Bristol; and Thomas Edwin Wills, Polytechnic Institute.

SOCIETY OF APOTHECARIES OF LONDON.—At

the primary examinations held recently the following candidates passed in the subjects indicated:—

PART I.

Chemistry.—I. M. Bernard and M. O. Dence, Royal Free Hospital. *Materia Medica and Pharmacy.*—C. A. Morlock-Brown, Royal Free Hospital; and G. F. Wilson, London Hospital.

PART II.

Anatomy.—E. O. R. Fisher and A. Jonathan, Royal Free Hospital; B. A. Keats, St. Bartholomew's Hospital; H. W. Phillips, Manchester; J. E. S. Sheppard Jones, Cambridge and St. Thomas's Hospital; A. Singha and H. H. Smith, Royal Free Hospital; S. W. Turtle, London Hospital; and H. I. Welsh, St. Mary's Hospital.

Physiology.—J. A. Bullbrook, Guy's Hospital; B. A. Keats, St. Bartholomew's Hospital; J. E. S. Sheppard-Jones, Cambridge and St. Thomas's Hospital; H. H. Smith, Royal Free Hospital; and W. E. N. Smith, Durham.

LONDON SCHOOL OF TROPICAL MEDICINE.—The

following students of the above school successfully passed the examination in Tropical Medicine held at the end of the twenty-third session, January to April, 1907:—

*Major F. R. Ozzard, I.M.S.; *Captain T. G. N. Stokes, I.M.S.; *Mr. J. M. O'Brien (Colonial Service); *Lieutenant O. Berkeley-Hill, I.M.S.; M.B. Oxon.; *Captain J. W. F. Hail, I.M.S.; Dr. A. W. Atkinson (Colonial Service); Dr. M. Gamble; Mr. F. W. Woolrabe; Dr. E. G. H. Weir (Colonial Service); Dr. A. Orguier (Torino); Dr. C. W. McLeay (Colonial Service); Dr. E. W. Wood-Mason (Colonial Service); Dr. A. M. Cowan; Mr. R. W. Orpen (Colonial Service); Dr. F. McF. W. Pollard (Colonial Service); Dr. A. M. Clark; Mr. W. N. Alexander (Colonial Service); and Dr. H. O'Hara May (Colonial Service).

* With distinction.

NORTH DEVON INFIRMARY, BARNSTAPLE.—The

Countess Fortescue on April 5th in the presence of a large gathering formally reopened the North Devon Infirmary. The institution has been enlarged and brought thoroughly up to modern requirements. New wards have been added,

including a new isolation ward, the expense of the latter having been defrayed by a legacy received from the late Mr. Staples. The cost of the undertaking has been about £24600, the whole of which sum has been raised.

UN SOUND MEAT.—At the Weston-super-Mare petty sessions court held on April 5th a local butcher was sentenced to two months' imprisonment for having meat unfit for human consumption exposed for sale in his shop.

MEDICAL MAGISTRATES.—Mr. Philip Edward Hill, M.R.O.S. Eng., L.S.A., of Crickhowell, Mr. Frederick James Jayne, M.B., C.M. Glasg. of Talgarth, and Mr. Hubert Williams, L.S.A., of Talgarth, have been placed on the commission of the peace for the county of Brecknock.

THE COAL SMOKE ABATEMENT SOCIETY.—The annual general meeting of this society will be held on Monday, April 22nd, at 3 p.m., at the Haymarket Theatre, Haymarket, London, W., under the presidency of Sir William Richmond, K.C.B., R.A. It is expected that, among others, the following will take part in the proceedings: The Bishop of London, Sir Frederick Treves, Mr. W. H. Atkin Berry, F.R.I.B.A., Dr. H. A. Des Vœux (honorary treasurer of the society), and Dr. S. Rideal, F.I.O.

INVALID CHILDREN'S AID ASSOCIATION.—The

annual meeting of the Invalid Children's Aid Association will be held, by kind permission of the Right Hon. the Speaker and Mrs. Lowther, at the Speaker's house in the Palace of Westminster on Wednesday afternoon, May 1st, at 3 o'clock. Lord Strathcona will preside and Sir William Bennett, K.C.V.O.; the Rev. Father Bernard Vaughan, Mr. Creighton, and Mr. I. Zangwill will be among the speakers. Admission by ticket only, application for which may be made to the Secretary, 69, Denison House, Vauxhall Bridge-road, Westminster, London, S.W.

ROYAL INSTITUTION.—A general monthly meet-

ing of the members of the Royal Institution was held on April 8th, Sir James Orichton-Browne, treasurer and Vice-President, being in the chair. Dr. J. Percy Smith and Mr. A. H. Tubby, F.R.C.S., were among the elected members. The special thanks of the members were returned to Sir Andrew Noble for his donation of £200 to the Fund for the Promotion of Experimental Research at Low Temperatures; and to Lady Kelvin for her gift of a statuette of Lord Kelvin. The chairman announced the decease of Professor M. Berthelot, Hon. Mem. R.I., and of Dr. Allan Macfadyen, Fullerton professor of physiology in the Royal Institution 1901-03, and resolutions of condolence with the relatives were passed.

LONGEVITY.—The Times of April 8th states that

Mrs. Hamilton of Townend, Kirkcudbright, celebrated the 103rd anniversary of her birthday last week. She was born on April 4th, 1804, the daughter of Mr. Robert Gordon, a banker and writer, of Kirkcudbright. Her husband, the Rev. George Hamilton, died in 1836, after being for 16 years minister of Kirkcudbright. Of the family of three sons and two daughters, one son and the daughters survive. Mrs. Hamilton still enjoys as good health as is compatible with her great age and the Kirkcudbright town council presented her with an illuminated address on the anniversary of her 100th birthday. Last month the approaching anniversary was brought to the notice of Lord Knollys, who was commanded by the King to telegraph to Mrs. Hamilton a message of congratulation.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Easter Holidays.

THE House of Commons reassembled on Monday after the Easter Holidays. The House of Lords do not meet until next week.

Phosphorus Necrosis in Match Factories.

The report made to the Home Secretary by Mr. H. S. CUNYNGHAM, Assistant Under-Secretary of the Home Office, and Dr. B. A. WHITELEGGE, Chief Inspector of Factories, on the match factory of Messrs. MORLAND and SONS, Gloucester, with special reference to a recent fatal case of phosphorus necrosis, has been presented to Parliament. They reported that in the present instance no rules appear to have been broken. The report concludes with some general remarks and recommendations on the employment

Notes, Short Comments, and Answers to Correspondents.

A GREAT ESTATE, ITS AGENT, AND THE MEDICAL PROFESSION.

Our readers may remember that we refused recently to publish an advertisement sent to us by Mr. Henry Whitcomb in behalf of the Petworth Park Friendly Society. In the first instance we refused the advertisement because we were not supplied with the rules of the society, later a letter received from Mr. Herbert E. Watson, agent to Lord Leconfield, the owner of Petworth, confirmed us in our decision (see THE LANCET, Jan. 26th, 1907). Mr. Watson was annoyed with us for publishing his letter, which was not marked "private," but he grew positively angry with us later for not publishing some figures which reached us in another letter, this time marked "private and confidential." Legal proceedings were spoken of unless we complied with Mr. Watson's behests, and altogether it was made clear to us that we had a very dour opponent to deal with. Yet with perhaps unpardonable rashness we kept on doing nothing, and the advertisement has not been inserted.

Mr. Watson has now issued a pamphlet with this title, "A Correspondence in Reference to an Advertisement for a Medical Officer between the Petworth Park Friendly Society and 'The Lancet.'" He calls attention on the frontispiece that only three of the letters have been published in THE LANCET, but adds in the preface that he has "decided to print the whole of the correspondence." Upon this pamphlet we have one or two remarks to make. Firstly, we are quite pleased to re-read our letters to Mr. Whitcomb and Mr. Watson. They well explain our position. But they were not written for publication, and their issue without our sanction is a droll proceeding on Mr. Watson's part considering his views about the sanctity of his own letters to us. Secondly, it is incorrect to describe the correspondence in the preface as complete when it is nothing of the sort. Modesty no doubt may have led Mr. Watson to refrain from giving wide circulation to his first letter of Jan. 23rd or to his letter of Feb. 1st, 1907, in which he informed us that "the general remark of the leading people of this place" was "I never heard of such a thing publishing a private letter and commenting on it in such a vulgar way." The omission of these communications, however, renders the correspondence the reverse of complete. Thirdly, there is a footnote on page 11 of the pamphlet which is disingenuous. We stated in THE LANCET dated Jan. 26th that we had "never seen the rules of the Petworth Park Friendly Society." The footnote challenges our statement, saying, "N.B.—The rules we forwarded on January 24th, see my letter. THE LANCET was published on January 26th.—H. E. W."; and the implication is that we had received the rules but preferred to deny the fact. Mr. Watson must know that a paper has to be printed before it is published. THE LANCET dated Jan. 26th went to press on the afternoon of Jan. 21st, three and a half hours before Mr. Watson posted to us in Petworth the rules which he said had been omitted owing to an oversight of his clerk (see letter on page 9 of pamphlet). Fourthly, the valuer's report, which appears on page 10, is unsigned and undated in the pamphlet, but in the original it is both. Despite these blemishes the pamphlet is a useful little production and we wish it wide publicity. Possibly Mr. Watson is doing his best to meet our wish.

At the same time as we received the pamphlet we received a copy of the following circular letter which has been sent—at least we suppose so by the internal evidence of Mr. Watson's first suggestion—to a number of secretaries of medical aid associations or sick clubs—

(CONT.)

THE MEDICAL ASSOCIATION & FRIENDLY SOCIETIES.

Petworth, Sussex, March, 1907.

SIR,—It may have come to your notice that the medical profession are taking up the question of the pay given by various societies to their Medical Officer.

The P.P.F.S. are now experiencing the methods adopted by the Medical Press in order to secure their object. The M.O. of this society asked for higher pay: The Committee informed him that they could not advise the members to give it consequently (after 5 yrs. service) he resigned. A general meeting of the members was called & they endorsed the action of the Committee & decided to offer the appointment to a firm of doctors in the town who, on account of etiquette I presume, declined it. The Society then advertised the appointment. To their surprise the medical papers (LANCET and B.M.J.) declined to take the advt. the former paper giving 2 reasons for not doing so (1) The Editor had not seen the rules & (2) He had received an intimation that the appointment was not such as could be recommended to the Medical Profession.

The information came from the late Medical Officer and was based on incorrect data.

I will not add to the length of this letter by going through all the phases of this question but will ask you to be good enough to pursue this. I enclose (corres. with LANCET). The result is this

- (1) On no account will they reinstate their medical officer.
- (2) The only other doctors (one firm) will not take the appointment.
- (3) The Medical Press not only decline the advertisement but put the Society on their black list till they can screw them up to give such remuneration as in the opinion of the Medical Association is fair.

My object in addressing you is to ascertain your views on the following suggestions.

(1) That all the Friendly Societies of England should join in some concerted action in order to put down the tyranny of the Medical Press in preventing men (who by their thrift are saving the rates) from making their wants known to the Medical Profession through the medium of the Medical Press: Surely educated men are competent to fix or arrange their own salary with a club without the aid of a Union.

(2) It is impossible to fix a hard and fast line for the salaries of Medical Officers which can only be done by deciding each case on its merits, distance & other considerations having to be considered.

(3) There should be a co-operation of the various clubs within a given area & a doctor with a fixed salary appointed to attend so many clubs.

(4) A meeting of delegates within the area should meet and discuss the question.

If the above meet with the approval of your club I will be glad to arrange a meeting at some place to be agreed when the whole matter can be thoroughly gone into.

Yours faithfully,

H. E. WATSON.

We shall be interested to learn what developments follow. It is our tyranny apparently that is to be put down, and we are wondering how Mr. Watson is going to make us insert advertisements which we do not think are ethically correct.

APPARATUS FOR ELEVATING THE HIPS IN BED.

To the Editors of THE LANCET.

SIR,—The principle advocated by Dr. E. G. Gilbert in THE LANCET of March 23rd, p. 817, to prevent a patient slipping downwards is correct, but if I may, as a layman, find fault with the way in which the result is secured I would venture to point to the wooden cross-bar on which the base of the spine (or the small of the back) rests, which on a non-yielding mattress would be hard enough, but in one that gives with the weight of the patient's body it would be torture; presumably this one does, or lying flat on his back as he is there depicted there would be no possibility of downward "creeping." Again, there is a similar bar across under the knees, and in a lesser degree the same criticism applies.

The Equipolse Company make a bed, referred to in your columns on a recent occasion (vol. 1, 1905, pp. 236 and 307) of which the mattress frame is in three parts, back, seat, and leg rest. As the back rises the rear of the seat and foot end of the leg-rest decline, leaving the knees raised, the weight of the body being all the time fully supported by the woven-wire mattress, whilst, moreover, the seat being at an incline, it prevents any tendency towards slipping downwards; these positions are attained smoothly and without exertion by the patient or attendant and there are no cross-bars from head to foot in contact with the body, a great point in bedridden cases.

I am, Sirs, yours faithfully,

Ashford, Kent, March 26th, 1907.

H. P. CLEMETSON

LIBERIA: ITS CLIMATE AND DISEASES.

Captain C. Braithwaite Wallis, British Consul at Monrovia, in his report on the trade, &c., of Liberia for the year 1906, just received at the Foreign Office, enters at some length into the question of the climate and diseases of the country.

In the Americo-Liberian settlements there are practically no drainage and little or no attempt at sanitation. The most trying seasons of the year are the beginning and end of the rains. At these times malarial fever of a severe type is prevalent and the Americo-Liberians suffer nearly as much from this disease as do Europeans. The aboriginal adult, however, although he suffers from malarial fever, seldom dies from it. A chief source of the spread of malarial fever amongst the inhabitants is by the bite of the infected anopheles. As the blood of nearly every native child has been found to contain malarial parasites it can be well understood how readily the disease is spread. From careful investigations made on the spot it has been found that anopheles caught in native villages invariably contained a large percentage of infected specimens.

The geographical distribution of malaria in Liberia is general owing to the anopheles existing probably throughout every part of the territories of the Republic. At Monrovia, owing to the number of stagnant ponds and pools, the anopheles abound. European merchants and others live, as a rule, in close vicinity of native houses. There has been no attempt here at segregation, and a high percentage of the European residents at Monrovia and the other ports on the Liberian coast are malarially infected. Every European dwelling-house illustrates the deadly practice of being surrounded by, or in the immediate vicinity of, numerous native huts and dwelling-places, which, as a rule, contain a certain number of children. The commencement and end of the rains are the unhealthy seasons because at these periods the anopheles are more prevalent. In the former case the larvae are allowed to develop owing to the rainfall

QUIRKE, J., L.R.O.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Infatigable District of the county of Kilkenny.
 RIDDLELL, W. H., M.B., Ch.B. Edin., has been appointed House Surgeon at the Staffordshire General Infirmary, Stafford.
 ROSE, FRANK A., M.R.C.S., L.R.O.P. Lond., has been appointed Assistant Surgeon to the Throat Department at St. Bartholomew's Hospital.
 STREETEN, FRIEND EDWARD, M.R.C.S., L.R.O.P., L.M. Edin., D.P.H. Irel., has been reappointed Medical Officer of Health of Swindon.
 WADDEY, HENRY EDWARD, L.R.O.P., M.R.C.S., D.P.H. Camb., has been appointed Honorary Consulting Surgeon to the Gloucester General Infirmary and Eye Institution.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHTON-UNDER-LYNE DISTRICT INFIRMARY.—Junior House Surgeon. Salary at rate of £75 per annum, with board, attendance, washing, &c.
 BIRKENHEAD UNION INFIRMARY AND SANATORIUM.—Resident Assistant Medical Officer. Salary £123 per annum, with board, washing, and apartments.
 BIRMINGHAM, QUEEN'S HOSPITAL.—Second Physician for Out-patients and Pathologist. Salary £100 per annum.
 BIRMINGHAM, UNIVERSITY OF.—Junior Assistant, Pathological Department. Salary £50 per annum.
 BODMIN, CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £140 a year, rising to £160, with rooms, rations, laundry, and attendance.
 BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.
 BRIGHTON, SUSSEX COUNTY HOSPITAL.—Third House Surgeon. Salary £50 per annum, with board, residence, and washing.
 BRISTOL, COSSHAM MEMORIAL HOSPITAL, Kingswood.—House Surgeon and Resident Medical Officer. Salary £100 per annum, with board, apartments, and laundry.
 BRISTOL GENERAL HOSPITAL.—House Surgeon, House Physician, Casualty House Surgeon, and Assistant House Physician. Salary £80, with board, residence, &c., in each case.
 BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.
 BURY INFIRMARY.—Junior House Surgeon. Salary £80, increasing to £90, with board, residence, and attendance.
 BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with apartments, board, and laundry.
 CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.
 CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £60 a year, with board, apartments, and laundress.
 CUPAR-FIFE, FIFE DISTRICT ASYLUM.—Junior Assistant Medical Officer. Salary £120 per annum, with rooms, board, and attendance.
 DERRY, COUNTY BOROUGH ISOLATION HOSPITAL.—Assistant to the Medical Officer of Health. Salary £100, per annum, with board and lodging.
 EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, S.E.—Assistant Surgeon.
 GLOUCESTER, GENERAL INFIRMARY AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeon. Salary at rate of £30 per annum, with board, residence, and washing. Also Assistant Surgeon on the Acting Medical Staff.
 HARTSHILL, STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL.—House Physician. Salary £100 per annum, with apartments, board, and washing.
 HUDDERSFIELD INFIRMARY.—Senior Assistant, also Junior Assistant House Surgeon. Salaries £80 and £60 respectively per annum, with board, rooms, and washing.
 INGHAM INFIRMARY AND SOUTH SHIELDS AND WYSTOE DISPENSARY.—Assistant House Surgeon. Salary £75 per annum, with residence, board, and washing.
 LAMBETH INFIRMARY.—Third Resident Assistant Medical Officer. Salary £125 per annum, rising to £150, with the usual residential allowances.
 LEEDS HOSPITAL FOR WOMEN AND CHILDREN.—House Surgeon. Salary at rate of £50 per annum, with board.
 LEEDS PUBLIC DISPENSARY.—Honorary Assistant Dental Surgeon.
 LINCOLN COUNTY HOSPITAL.—Junior House Surgeon, unmarried, for six months. Salary £25, with board, residence, and washing.
 LIVERPOOL STANLEY HOSPITAL.—House Surgeon.
 LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—Third Anesthetist.
 MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer for the Grosvenor Sanatorium, Delamere Forest. Salary £100 per annum, with board, apartments, and laundry.
 MARGATE, ROYAL SEA-BATHING HOSPITAL.—Resident Surgeon, a Junior and as Senior, for six months each. Salary at rate of £80 and £120 per annum respectively, with board and residence.
 MIDDLESBROUGH, NORTH RIDING INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per year, with residence, board, and washing.
 MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Assistant Resident Medical Officer at Northwood. Salary £50 per annum, with board, lodging, &c.
 NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.—Assistant Ophthalmic Surgeon.
 NEWCASTLE-UPON-TYNE, ROYAL VICTORIA INFIRMARY.—Director for the Bacteriological Laboratory. Salary £100 per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Junior Resident Medical Officer. Salary £70 per annum, with board, residence, and laundry.
 POPLAR HOSPITAL FOR ACCIDENTS.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.
 PORT ELIZABETH, PROVINCIAL HOSPITAL.—Assistant House Surgeon. Salary £225, rising to £300, with board and lodging.
 ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Examiners in Anatomy, Physiology, Midwifery, Public Health, and Elementary Biology.
 ROYAL DENTAL HOSPITAL, Leicester-square, London, W.C.—Lecturer on Operative Dental Surgery.
 ROYAL EAB HOSPITAL, Dean-street, Soho, W.—House Surgeon for six months. Salary at rate of £40 per annum.
 ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Resident House Physician, Resident House Surgeon, House Physician, and Casualty House Surgeon.
 ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Coventry, W.C.—Junior House Surgeon for six months. Salary at rate of £50 a year, with board, lodging, and washing.
 SOCIETY OF APOTHECARIES OF LONDON.—Examiners in Medicine, Surgery, Midwifery, Anatomy, and Materia Medica.
 SUNDERLAND, MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.
 SWANSEA UNION WORKHOUSE.—Assistant Medical Officer. Salary £20 per annum inclusive.
 TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon. Salary £70 a year, with board, lodging, and washing.
 THROAT HOSPITAL, Golden-square, W.—House Surgeon. Salary £50 per annum, with board, residence, and laundry.
 TORQUAY, TORBAY HOSPITAL.—House Surgeon. Salary £100 per annum, with residence, board, and washing.
 TOTTENHAM HOSPITAL, London, N.—House Surgeon, House Physician, Junior House Surgeon, and Junior House Physician, all for six months. Salary of two former at rate of £75 per annum, and of two latter at rate of £40 per annum, with residence, board, and laundry.
 TOWER HAMLETS DISPENSARY, White Horse-street, Stepney, E.—Male Resident Medical Officer. Salary £150 per annum, with rooms, coal, gas, and attendance.
 WAKEFIELD, WEST RIDING ASYLUM.—Pathologist and Assistant Medical Officer. Salary £140, with board, apartments, washing, and attendance.
 WALSALL AND DISTRICT HOSPITAL.—Junior House Surgeon. Salary £50 per annum, with board, residence, and washing.
 WANDSWORTH UNION INFIRMARY, St. John's Hill, near Clapham Junction.—Junior Assistant Medical Officer, unmarried. Salary at rate of £100 a year, with board, lodging, and washing.
 WARRINGTON, LANCASHIRE COUNTY ASYLUM, Winwick.—Locum Tenens Medical Officer, unmarried. Salary 4 guineas per week, with apartments, board, attendance, and washing. Also Assistant Medical Officer, unmarried. Salary £150, per annum, with apartments, board, attendance, and washing.
 WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon, unmarried. Salary £50 per annum, with board, residence, and washing.
 WEST LONDON HOSPITAL, Hammermith-road, W.—Assistant Ophthalmic Surgeon.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Chudleigh, in the county of Devon.

Births, Marriages, and Deaths.

BIRTHS.

GREENE.—On April 4th, at Richmond House, Turvey, Beds., the wife of George Watters Greene, M.A., M.D., of a daughter.
 PANK.—At Hamilton-place, Market Rasen, Lincs., the wife of Harold W. Pank, M.R.C.S., L.R.O.P., of a daughter.

MARRIAGES.

LYNCH-CROSBY.—On April 8th, at the Church of St. Nicolas, Tanfield, Yorkshire, by the Rev. G. P. H. Felt, M.A., George Wm. Augustus Lynch, J.P., B.A., M.B. Cantab., Senior Medical Officer, Colonial Medical Service, P.O. to Katharine Stuart Frances Crosby, Stenford Park, Ripon. Colonial papers please copy.
 MAY-MITCHELL.—On April 6th, at St. Peter's and St. Paul's Church, Chingford, Essex, George Ernest May, M.R.C.S., L.R.O.P., to Rachel Marguerite, second daughter of the late William Augustus and of Mrs. Mitchell.
 YOUNG-BIRON.—On April 6th, at Lymington parish church, Graham Pallister Young, M.B., B.S., to Helen, third daughter of the Rev. Henry Brydges Biron.

DEATHS.

HARRISON.—On April 3rd, at Cornwallis-crescent, Clifton, E. T. D. Harrison, F.R.C.S., in his 88th year.
 LEVY.—On April 8th, at Kingscliffe, Northamptonshire, of pneumonia, Thomas White Lewis, M.D. Univ. Dub., second son of the late J. M. Aylward Lewis, J.P., of Ballinagar, co. Galway, and Mrs. Lewis, 42, Morehampton-road, Dublin, aged 52 years.
 MILES.—On April 4th, at "Motcombe," Hamgate, Thomas Miles, M.R.C.S., in his 84th year.
 WAKLEY.—On April 6th, at 5, Queen's-gate, S.W., Thomas Henry Wakley, F.R.C.S. Eng., eldest son of the late Thomas Wakley, M.P., aged 86 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN (17, Bloomsbury-square, W.C.).—8 P.M.: Paper.—Mr. J. Humphrey: The Compendium of Medicines, its Plan and Scope.

PATHOLOGICAL SOCIETY OF LONDON.—Meeting postponed.

WEDNESDAY (17th).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—8 P.M.: Exhibition of Slides of Foraminifera by Mr. A. Barland. Paper.—Mr. H. M. Nelson: On the Podura Scale.

THURSDAY (18th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M.: Papers.—Mr. Jeffrey: A Case of Ulcerative Colitis treated by Operation under the care of Dr. Latham and Mr. Jeffrey.—Dr. L. G. Guthrie: Some Nervous Affections of Childhood.

FRIDAY (19th).—SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (11, Chandos street, Cavendish square, W.).—5 P.M.: Clinical Evening for the Exhibition of Cases followed by Discussion. Patients in attendance at 4.30 P.M.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (15th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations. MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. S. R. Dore: Clinique. (Skin.) 5.15 P.M.: Lecture.—Dr. H. Campbell: Observations on Treatment.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—Cliniques.—9.30 A.M.: Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Medical Out-patient (Dr. Whipple), Throat, Nose, and Ear (Mr. Carson); X Rays (Dr. Pirie).

TUESDAY (16th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moulton: Gynaecological Operations. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. J. E. Squire: Clinique. (Medical.) 5.15 P.M.: Lecture.—Mr. W. H. Clayton-Greene: Retention of Urine.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—Cliniques.—10.30 A.M.: Medical Out-patient (Dr. Auld). 2.30 P.M.: Gynaecological Out-patient (Dr. Giles), Surgical Out-patient (Mr. Edmunds), Surgical Operations (Mr. Carson).

WEDNESDAY (17th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations. Dr. D. Robinson: Diseases of Women.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. L. Mummery: Clinique. (Surgical.) 5.15 P.M.: Lecture.—Dr. N. Tirard: Some Forms of Pneumonia.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—Cliniques.—2.30 P.M.: Skin (Dr. Meachen), Eye (Mr. Brooks), Medical Out-patient (Dr. Whipple).

THURSDAY (18th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M.: Lecture.—Mr. E. Clarke: The Fundus Oculi in Health and Disease (with lantern slides).

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—2.30 P.M.: Gynaecological Operations (Dr. Giles). Cliniques.—Medical Out-patient (Dr. Whiting), Surgical Out-patient (Mr. Carson). 3 P.M.: Medical In-patient (Dr. Chappell).

FRIDAY (19th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moulton: Gynaecological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. X Rays. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. M. Yearley: Clinique. (Ear.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—9.30 A.M.: Clinique.—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Surgical Operations (Mr. Edmunds). Cliniques.—Medical Out-patient (Dr. Auld), Eye (Mr. Brooks). 3 P.M.: Medical In-patient (Dr. Leslie).

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—9 P.M.: Prof. O. S. Sherrington: Nerve as a Master of Muscle.

SATURDAY (20th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. X Rays. 2.30 P.M.: Operations. Dr. D. Robinson: Diseases of Women.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed exclusively "TO THE EDITORS" and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES. TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.O., are dealt with by them? Subscriptions paid to London or to local newsgagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and not to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 15 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.O.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 11th, 1907.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radiation in Vacuum.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
April 5	29.60	N.	—	65	57	41	43	45	Cloudy
" 6	29.37	W.	0.66	107	59	45	46	47	Cloudy
" 7	29.26	W.	0.55	103	51	35	38	39	Raining
" 8	29.43	S.W.	0.37	83	54	39	43	43	Overcast
" 9	29.54	W.	0.06	60	50	43	44	45	Overcast
" 10	29.79	N.E.	0.06	55	50	42	43	44	Overcast
" 11	29.73	E.	0.01	55	46	40	42	43	Overcast

During the week marked copies of the following newspapers have been received:—Western Mail, Peterborough and Hunts Standard, Chatham, Rochester and Gillingham News, Standard, Daily News, Daily Chronicle, Belfast News, Daily Mail, Tribune, Norwich Eastern Daily Press, Hull Eastern Morning News, Haverhill Express, South London Press, Morning Post, Preston Guardian, Durham Chronicle, Daily Guardian, Daily Express, &c.

being as yet insufficient to wash them away. On the other hand, as the rains lessen the drying pools and puddles become more numerous and more adapted for the hatching of the mosquito egg. The rainfall in Liberia so far as has been recorded—from September, 1904, to August, 1905—was registered at 153 inches. In the southern portion of the territories the rainfall does not appear to be so heavy. From the colony of Sierra Leone (which in 1901 registered 175·4 inches) southwards the rainfall seems gradually to diminish, for on the Gold Coast the average is only about 82. Probably Sierra Leone has the heaviest rainfall in tropical Africa, with Western Liberia ranking next. The climate of Liberia varies considerably, improving in proportion to the distance traversed from the littoral.

Owing to the want of sanitation, the difficulty of obtaining fresh food, the unpleasant surroundings, and the extreme humidity, the climate of Liberia is, apart from the prevalence of malarial fever, both dangerous and enervating to the health of Europeans. The European merchant has literally a struggle for existence. Moreover, his staff, if also European, are apt to become, after a little time, lethargic and anemic, and require frequent trips to Europe. But his most insidious enemy is malaria, coupled with the enervating influence of the climate. If he can succeed in avoiding the former his chances of success as a merchant in West Africa will be very much greater.

SHIPPING COMPANIES AND THEIR SURGEONS.

To the Editors of THE LANCET.

SIRS.—Can you spare the space to publish the following warning letter which has been sent to the secretaries of all the medical schools in Great Britain and Ireland, and which may be of interest to many of your readers, especially medical students and those who have recently qualified?

DEAR SIR.—During the past year or so stringent vaccination laws have been passed, affecting immigrants to various parts of the American continent and the West Indies.

Several shipping companies have endeavoured to make their surgeons do the extra work involved without any extra pay, including the filling in of certificates and counterfoils, and in many cases have refrained from giving any hint of this to intending ship surgeons.

Before a qualified man signs the articles of any ship going to North, Central, or South America he should carefully inquire what extra work is expected of him, apart from the health and sanitation of the ship itself, otherwise he may have disagreeable experiences as others have done.

Inclosed please find a copy of the more important clauses of the Argentine law, which gives a good idea of these vaccination laws generally.

If your medical school has a gazette perhaps you might kindly insert this warning letter. I am, Sirs, yours very truly,

MASTOID.

* * The following are the Argentine clauses referred to by our correspondent.—ED. L.

Vaccination Law in Argentina, promulgated June 25th, 1906.

1. That in future steamship agents at the port of embarkation inform all 3rd-class passengers for this country that they must be vaccinated or have been vaccinated within a period of seven years and must hold a certificate to this effect.
2. That passengers who have fulfilled these conditions should receive from the ship's doctor a special certificate to this effect, to be exhibited on arrival at this port.
3. That passengers who have not fulfilled Article No. 1 should be vaccinated by the ship's doctor who will issue them a certificate to that effect.
4. That the steamship companies deliver to the Health Board on the arrival at this port of each ship, together with the counterfoils of certificates issued, a list of passengers who have not complied with Articles Nos. 1 and 3.
5. That 3rd class passengers to which Article 4 refers, who have not been vaccinated before embarkation or during the voyage, be vaccinated immediately on arrival by a doctor of the Immigration Department.
6. That the Health Board examine on arrival certificates issued by ship's doctor, and obtain the counterfoils for statistical purposes, handing over list of persons subject to vaccination on arrival, to the Medical Board of the Immigration Department.
7. That persons resisting vaccination on shore will be punished under Article No. 2 of Law No. 4202.

THE HEALTH OF THE PEOPLE OF INDIA.

We have received a printed "copy of an open letter addressed to the Right Hon. Mr. John Morley, Secretary of State for India," dealing with the subject of the improvement of the Medical and Sanitary Departments of India and praying for an inquiry into their working. The circumstances which led to its publication, and to the Secretary of State for India being addressed through the form of an open letter, are fully set forth in the pamphlet, and indications are given of the many points which, in the opinion of the author—Mr. Sam Manikam, founder and agent, South Indian Railway Mission—loudly call for reform and improvement. We have read the pamphlet. The subjects touched upon cover a wide field and presuppose a knowledge of the alleged facts as well as acquaintance with the hospital routine of India.

THE "KNOCK-OUT" BLOW.

A CORRESPONDENT signing himself "Glove" is anxious to know explanation of the "knock-out" blow. We do not know that the absolute physiology of the effect of the blow has ever been settled, but we believe the result to be caused mainly by two factors. The one is the shock transmitted to the base of the brain by the ram of the lower jaw acting through the thin plate of the temporal bone, and the other is that the head is driven violently backwards, thus giving a shock to the medulla by a stretching of the spinal cord.

"ALGIRON."

Messrs. Evans, Sons, Lescher, and Webb, Limited, of 60, Bartholomew Close, London, E.C., announce that their preparation hitherto known as "Alghind Iron" (Stanford) will be called henceforth by the name of "Algiron." As we have already pointed out this substance consists of a compound of alginic acid (from seaweed) with iron. The salt is said to present a form of iron readily absorbed into the system without giving rise to the disturbances which follow the administration of ordinary iron salts.

F. E. H.—A witness can claim to be paid before he is sworn, but if he is sworn before making the claim he must then give evidence and take his chance of being paid.

L. L.—The official title is medical officer. We cannot pronounce upon the legality or otherwise of a Poor-law medical officer signing himself medical superintendent.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopaedic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (3.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

TUESDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2.30 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M.), Ophthalmic, 2.15 P.M., Tottenham (2.30 P.M.).

WEDNESDAY (17th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (3 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), Samaritan National Orthopaedic (10 A.M.), St. Peter's (2 P.M.), West (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2.30 P.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), St. Royal Bar (2 P.M.), Royal Orthopaedic (3 P.M.), Children, St. Ormond-street (3.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

THURSDAY (18th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (3 P.M.), Charing Cross (3 P.M.), Middlesex (3.30 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), North-West (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West (1.30 P.M.), London (2 P.M.), Gt. Northern Central (Gynecological, 2.30 P.M.), Samaritan Metropolitan (2.30 P.M.), London Throat (3.30 A.M.), Guy's (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Children, (1.30 P.M.), Royal Orthopaedic (9 A.M.), Royal Bar (2 P.M.), Gt. Ormond-street (2.30 P.M.), Tottenham (Gynecological, 2.30 P.M.).

FRIDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Throat, Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Soho-square (9.30 A.M.), City Orthopaedic (2.30 P.M.), Children, Gt. (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (20th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (3.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, St. Ormond-street (9.30 A.M.), the Royal London Ophthalmic At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London phththalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (16th).—THERAPEUTICAL SOCIETY (Apothecaries' Hall, Blackfriars, E.C.).—4.30 P.M.: Papers.—Dr. G. Oliver: Some Notes on the Control of Hypernormal Blood Pressure.—Dr. J. Burnett: The Decline of Prescription Writing: Some of its Dangers and Ultimate Results.
MEDICO-LEGAL SOCIETY (22, Albemarle-street, W.).—8.30 P.M.: (1) Three Cases of Fatal Poisoning by Strychnine; (2) A Fatal Case of Poisoning by Bichromate of Potassium (reported by Prof. H. Littlejohn);—A Case of Poisoning by Oxalic Acid (reported by Dr. S. Tebb).

In Address

ON

THE OUTLOOK OF THE MEDICAL PROFESSION: SCIENTIFIC, SOCIAL, FINANCIAL.

Delivered before the North London Medical and Chirurgical Society on April 11th, 1907.

By JAMES GREY GLOVER, M.D. EDIN.,

RESIDENT OF THE SOCIETY; EX-MEMBER OF THE GENERAL MEDICAL COUNCIL.

GENTLEMEN,—A very significant incident in the history of France and of human thought was recorded in the *Times* of Dec. 24th last and has great interest for members of the medical profession. The article I speak of was headed "The Great Men of France," and it relates how it had occurred to one of the most widely circulated French newspapers, the *Petit Parisien*, to take a plebiscite of the French nation on the question of the relative pre-eminence of great Frenchmen in the last century. It appealed to its readers all over France to vote and was rewarded by a response from no less than 15,000,000 of the French people. The result was delightful and, in my humble opinion, profoundly just and true. I shall give you the chief figures in a few lines from the interesting telegram of the *Times* correspondent. "The winner of the recent contest is Pasteur. Victor Hugo runs him close, having received 1,227,103 votes against 1,338,425 for the world-renowned man of science. But it is characteristic that two men of peaceful pursuits should precede on the list of these great Frenchmen who might have appeared at first sight to have most contributed to that special kind of glory known as French. Gambetta follows Victor Hugo with 1,155,672 votes. Then comes Napoleon with 1,118,034 and Thiers with 1,039,453 respectively." The *Times* correspondent well says: "Fifteen million answers have been received and what gives value to this striking demonstration is that we have here the opinion of average France, not that of a political coterie or of a cultivated élite. Such a vote raises one's hopes of the race—almost of Fame itself." Said Milton:

"What is glory but the blaze of fame,
The people's praise, if always praise unmix'd?
And what the people but a herd confus'd,
A miscellaneous rabble who extol
Things vulgar, and well weigh'd, scarce worth the praise?"

Here, I venture to think, is a hopeful exercise of the popular judgment, which well introduces what I have to say of the outlook of medicine from a scientific point of view and which we may well set off against some of the discouraging facts—I hope temporary and evanescent facts—among ourselves as to the popular estimate of the greatest achievements of medicine.

It has been disquieting and humiliating to the medical countrymen of Jenner to watch the outbreak of prejudice against his great discovery. This is not the time or place to labour that question in detail. I am glad here just to say this, that there are slight indications that this aberration is confined to certain sections of the people and even so is showing signs of abatement. Dr. O. A. Wickham of Barnsbury and other friends have supplied me with proof that the public vaccinations keep up to an average and I am delighted to gather from a letter in THE LANCET of March 30th that in the recent London County Council election the antivaccinists got a severe rebuff at the polls, conveying a hint to Liberals that sound Liberalism must not include the right to have an infectious disease, horrible and injurious in itself, and involving great risk to others. But returning to the French plebiscite, you may say "Pasteur was not a physician." Well, in a technical sense he was not, but his earliest interest and yearnings in connexion with his great discoveries had a medical character and found in medicine their most splendid and epoch-making application. In 1863 Napoleon III. wished to see Pasteur. Pasteur was introduced to the Emperor by his distinguished teacher, J. B. Dumas. Referring to the emperor's questionings Pasteur says, "I assured the emperor that all my ambition was to arrive at the knowledge of the causes of pueril and contagious diseases." Less than a week ago we

as a profession and the nation at large celebrated, with the sympathy and congratulations of the civilised world, the eightieth birthday of Lord Lister—the complement of Pasteur—who quickly saw, with no less genius and conviction than those of the French *savant*, the proportions and the significance of the immense discovery that was made by Pasteur, for it determined that living air-borne particles were at the root of fermentation, and, as he soon surmised, at the root of putrefaction, suppuration, gangrene, and infections generally.

Pasteur and Lister together, anticipating so happily the *entente cordiale*, yet working in separate fields, in spite of scoffers and scepticism evolved gradually, but with splendid scientific steadiness, their great views and the application of them to the prevention and cure of disease in animals and plants. In 1866 I was privileged, by detention in Glasgow for a fortnight, to see, and to be deeply impressed by, the application of these views to surgery (as he was then) Mr. Lister, Professor of Surgery in the University, and to learn at first hand the marvellous results in compound fractures and other cases obtained by the use of means to prevent putrefaction in wounds based on Pasteur's discoveries, but perfected from day to day by Lister, till now they constitute the chief glory of surgery and of medicine too. It is indeed not too much to say that the work of these two men, so modest, so careful, so intensely and laboriously and patiently scientific in their methods, with all that has grown out of it, will soon have saved, if they have not already saved, as many lives as Napoleon I. and Napoleon III. together contrived to destroy.¹ It is not only the direct effect of their methods that we have to note here, but the fact that they have established our profession on a firm basis of science and close observation which has raised it in the estimation of men and which must for ever serve as a guide to those who profess the art of healing. In support of this conclusion I need only remind you of the revolution in medical education which is ever aiming at securing in medical students a sounder knowledge of the principles of science and of the fundamental subjects of chemistry and biology as the only safe foundation for teaching of more strictly medical subjects. This change is for the moment trying to many old and famous schools of medicine, but it is beneficent and inevitable and the schools which most heartily recognise and accept it and all it implies, will increasingly attract the majority of students. And men in practice, like ourselves, must catch the contagion and keep abreast as well as we can with the new spirit and methods of medicine.

Before I leave this notice of what I shall call the master-builders of modern medicine it is as tempting as it is unnecessary to say that these men had in their composition not only the subtle and indefinable characteristics of genius but those moral qualities—of faith, of reverence, of high principle—which ever enter into the greatest men, and which have been conspicuous in the leaders of medicine from Hippocrates downwards. If the highest influence of our profession is to be realised it will only be by this combination of intellectual and moral qualities which were eminently illustrated in Pasteur. If I might venture a word of advice to my younger friends in the profession it would be to study biography, and especially that of medical men who have influenced their age or their time. Of all biographies, that of Pasteur seems to me one of the most delightful. He was a devout Roman Catholic but no scientific success lessened either his humility, his reverence, or his faith. Nearly 20 years before his death he was overtaken by hemiplegia and he had early losses by death of those whom he most loved; but he remained still the same loving, trusting, working man and achieved after his hemiplegia some of his greatest triumphs. Death is not for the like of Pasteur. He "*remains*" as his great medical colleague Lister will "*remain*." We may apply to each of them the words of Tacitus: "Quicquid ex Agricola amavimus, quicquid mirati sumus manet, mansurum est in animis hominum, in æternitate temporum, famæ rerum."

But it may be thought that I am getting far away from my subject and that we have to come down to the common men and the common work of our profession and to say what is the outlook for them—socially, politically, if you please financially. I have noticed a tendency in some of my

¹ It is pleasant and only fair here to say that Napoleon III. showed much interest in Pasteur and his work and conferred with much persistence the building of satisfactory laboratories for the promotion of his momentous investigations.

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- A.—Mr. R. J. Alberv, Lond.; A. Z.; The Atlantic Union, Lond. Hon. Secretary of; Anglo-American Pharmaceutical Co., Croydon; A. Modest Practitioner; Messrs. Amster, Killiet, and Co., Bad Schinznach, Switzerland; Ajax Sanitary Co., Lond.; Dr. F. P. Atkinson, Baxhill-on-Sea; Mr. F. W. Alexander, Lond.
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- Y.—Dr. Eugene S. Yonge, Y chester.
- Z.—Messrs. A. and M. Zimm mann, Lond.

Letters, each with enclosure, are also acknowledged from—

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brethren to speak somewhat despondingly of the outlook. They see lions in the way and things that threaten the just influence and rewards of medical labour and travail. And theoretically it does not seem very obvious after you have spent a thousand or a couple of thousand pounds in the education of a son for the profession what is to be his immediate reward. Well, if money were the only reward for medical service I should agree that it is not adequate. But I feel sure that there are counterbalancing considerations which will alter the outlook and make ours for all time an honourable and a fairly satisfying profession. And most medical men in their hearts seem to think so. There is one fact which confirms this view, and that is the number of medical men who put their sons into the profession. For my part, I could imagine no greater joy to a medical man than to be succeeded by a son who gives his heart to the profession and finds his delight in mitigating suffering, "obviating," as Cullen puts it, "the tendency to death" and degeneration in his patients and in the community. So strong is this feeling in many medical men that they send not only a son but sons into the profession—two, three, or six, or eight. This is a pretty clear proof that they think it an honourable profession and one worthy to be followed. I cannot go so far myself. The profession is overstocked and I believe in variety of callings in families. But given some check to overcrowding, and devotion to medical work in the spirit of Pasteur and Lister, I think ours one of the best, if not the very first, calling in the world.

Let us briefly enumerate a few of the obstacles that in the opinion of some are injuring the outlook of medical practice as a calling. They may be said to be: (1) the growth of specialism; (2) the prevention of disease; (3) the license of unqualified practice; (4) the competition of certificated midwives; and (5) the abuse of medical charity.

Let me say a few words on each of these subjects.

(1) *The growth of specialism.*—It is no doubt true that there is public demand for the specialist and that this is carried absurdly far, as if the body consisted of detached parts and members which could be treated apart and without reference to the whole. With accumulating wealth not always accompanied with accumulations of wisdom there will be an increasing number of persons who will be tempted to go straight to a specialist whether their pain be in the little finger or in the great toe. What is the remedy? It is for every general practitioner to make his knowledge as *special* and as *particular* as possible, to be himself vigilant and intelligent in his diagnosis and ready in the use of his remedies. The public is quick to perceive resource and readiness in general practitioners and it is only fair to admit that if consultants are claiming to specialise they are hard run by many general practitioners who find themselves at home in every region of the body and every organ, whether it be the ear or the eye, the uterus or the lungs. The facilities of special clinics and the multiplication of clinical and resident officers in hospitals tend to specialise medical education, and equip the student and practitioner who is in earnest for dealing with all the ordinary ills he is likely to meet with. After all, the general practitioner can often be himself a specialist and the intelligent of the public must see that his ordinary adviser who specialises his knowledge is in the best position to take a large and accurate view of his case and to treat it effectually.

(2) *The wholesale prevention of disease.*—If disease is prevented, as it is on a large scale by municipal measures and by education, it is said that our occupation is threatened. But let me reply that these very municipal measures imply medical service and employ large numbers of medical men. This demand will increase as the hygiene of homes, schools, factories, ships, shops, armies and fleets is more and more urged by law and by sanitary authorities. And there remains the melancholy fact that no efficiency of sanitary law or administration will ever be likely to prevent the thousand and one diseases on which general practice rests. There is, I think, some abuse in the system under which the hospitals of our Metropolitan Asylums Board offer gratuitous treatment to those who are able to pay or to keep and isolate their sick at home. These hospitals were built for the poor. The original Act provided that those who could pay should be made to do so. In the feeding of school children provision is suggested for recovering money from the parents where possible, but it is so much easier for officials and politicians to bleed the taxpayers and to pauperise the objects of

benevolence, that I fear that if care is not taken to revive the old English virtue of independence and thrift we shall lose some of our work in a way that will benefit neither our patients nor the State.

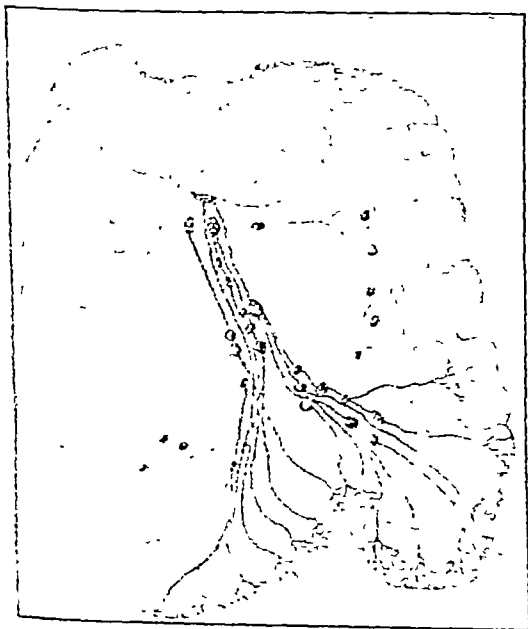
(3) *The license of unqualified practice.*—This has always existed, more or less, and in my judgment cannot be prevented by law. The remedy is for general practitioners to perfect their own superiority over prescribing druggists and quacks of all sorts and to show an interest in the smaller complaints which often harass and hinder so much the life of the working classes. I like that remark of Sydenham, perhaps somewhat exaggerated, contained in a letter to Dr. Brady: "Nevertheless, I have always thought it a greater happiness to discover a certain method of curing even the slightest disease than to accumulate the largest fortune, and whoever compasses the former I esteem not only happier but better and wiser too." It is not with medicine as with law, "*de minimis non curat lex*." Medicine should care much—and here I differ from many—about trifles: small complaints the beginnings of delicacy and ill-health—a toothache, nail-biting, a swollen gland, a pyrexial tendency, defects of strength or colour or animation. Without being fussy it is possible to avert much pain and ill-health and to put people and families on better lines of health. Intelligent care of this kind is much needed in all ranks of life and ought to be rewarded according to the means of those benefited. Such intelligent care is appreciated by all classes of patients, and not least by the working-classes, out of whose modest means one has seen the finest spirit of gratitude and received some of our most precious if small fees. I believe in no mere hospital treatment for these classes. I believe in the family practitioner who brings the children into the world and knows them and their parents and watches their health from year to year, their circumstances, their habits, even their bad habits, and treats them with consideration and kindly warning. An immense function of the medical profession lies in this direction and can only be discharged by a continuous family medical man whose observations may have much of a scientific character and add greatly to the influence of the profession. We have seen what has been done in the matter of acute and septic disease by the prodigious and pregnant discoveries of Pasteur and Lister who have stimulated a whole army of followers and imitators. There is another great field of work almost yet untilled and promising an abundant harvest to those who will study it with care—I mean the subject of what I may call degeneration as distinguished from disease. Much is being done to mitigate the mischief of acute diseases. But they do not make up the bulk of medical work. I went through one or two of my death-certificate books lately and took note of the causes of death in 100 cases. I found the average age of my patients at death was 63½ years, and that only 12½ per cent. of these died from acute diseases. The respectable age—the grand climacteric—attained by my clients may be due to special circumstances and I am sure is more to be explained by their good constitution than my skill or the composition of my medicines. But I should be sorry to think that we, I or any medical man, had nothing to do with adding to the longevity of our clients and that of their families—thinking, as I do, that our continuous care is of the very essence of medical service. In the great study of that is before the nation of the complicated causes of degeneration, the medical profession should bear a distinguished part, and there is no branch of the profession more able to advance this inquiry than the great body of general practitioners who, in so doing, will raise still higher the public estimate of the profession. Remember that Jenner began his study of the subject of vaccination while he was yet in practice in the country.

(4) *The competition of certificated midwives.*—Gentlemen, it was my duty as a member of the General Medical Council for 15 years to consider the question of the mischief done by ignorant and untrained midwives in the practice of their craft, which is as old as Genesis, and had come to be controlled in almost all other civilised countries of the world. I never hesitated as to the duty of the State to check and to control this pathetic and terrible evil and I think still as I did then. I must not detain you with the *pros* and *cons* of this controversy. But as I supported the demand for such legislation I have a special right and duty to protest against its defects. In all my action on this question I contemplated the midwife (and the whole Council did the same) as being trained for and acting

They consider that there are channels which afford communication between the three systems, but that they must be insignificant as the injection did not often pass from one to the other. We are not able to say whether the injection passes readily from the subserous layer to the submucous, but we find that the injection does pass readily from the submucous to the subserous, and that by inserting the needle into the submucosa all the vessels in the wall of the appendix can be injected. Further, Kelly and Hurdon state that only a limited area of the surface lymphatic plexus, representing the area draining into one collecting vessel, can be injected by one puncture. They say, "This demonstrates the existence of valves between the capillaries and the first system of collecting vessels and it demonstrates also the absence of valves in the capillaries a focus of infection inside such an area would therefore be practically isolated from the rest of the appendix." We have found no difficulty in injecting the entire subserous network of the appendix and even also of the apex of the cæcum from one puncture in the appendix. We believe, therefore, that there is not only free communication between the various systems of plexuses but also between one part of a plexus and another. We cannot entertain for a moment the idea that an infected area is isolated from the rest of the organ by the arrangement of its lymphatics. The plexuses of origin in the cæcum resemble in every respect those of the appendix.

The lymphatic vessels which issue from the appendix divide themselves into three sets. The first set consists of the vessels which drain the organ from its tip to near its root; the other two sets are formed by the vessels which arise from the root. The vessels forming the first set vary in number from eight to 15; leaving the wall of the appendix they enter the meso-appendix and ascend between its layers with the branches of the appendicular artery to its main stem around which they form a leash of from four to six vessels. These accompany the artery to its origin where they meet the lower group of the main ileo-colic chain.

FIG. 5.



Lymphatics of the cæcum and appendix. Posterior view.

Many of them end in the glands of this group; others, however, ascend to the glands of the upper group in which they end at variable levels. In some cases a gland in front of the duodenum is seen to be injected by vessels running directly from the appendix. When such vessels are traced to their origin we find that they may arise from any part of the appendix, and quite as frequently from its proximal as from its distal portion.

The appendicular gland when present receives vessels

from various parts of the appendix, from the apical portion as in Specimen C, from the body as in Specimen B, and from the root as in Specimen 30. In those cases where there is an accessory artery or arteries the lymph vessels from the proximal portion of the appendix accompany them and are received by the posterior ileo-colic glands. The vessels which drain the root of the appendix are arranged in anterior and posterior sets. The anterior vessels run from the appendix over the anterior surface of the cæcum and enter the ileo-colic fold. They invariably pass the glands here situated and end in members of the lower ileo-colic group. In some cases even this group may be passed, as is shown in Specimen 75, where vessels can be seen to thread their way among the lower group glands and to enter a gland of the upper group just below the duodenum. Posteriorly, vessels arise from the root of the organ and ascend over the posterior surface of the cæcum and in the cæcal attachment of the meso-appendix to the posterior ileo-colic glands. Some vessels, in this case also, are seen to pass this group without interruption to reach glands of the lower group of the main chain. Possibly the great number of glands in the ileo-colic corner may account for the fact that we have not seen in any instance a direct vessel of this set to the upper group. The vessels which drain the cæcum are simple in their arrangement. From the apex the vessels run with those of the root of the appendix and enter the same groups of glands; anteriorly they run in the ileo-colic fold to the lower group; posteriorly with the posterior ileo-colic vessels to the posterior ileo-colic glands and the lower main group. In one specimen, No. 87, a vessel issues from the muscular coat of the cæcum near the apex, descends on the appendix for a short distance, and then ascends with the appendicular vessels to a gland of the lower group at the origin of the artery. Tixier and Viannay³ describe a similar vessel in one of their specimens, but were unable to follow it to its gland. From the anterior surface of the body and base of the cæcum the vessels pass to the ileo-colic fold. Many of them enter the anterior ileo-colic glands, which appear to intercept in particular those vessels coming from the base of the cæcum and from the lower part of the colon. Some vessels, chiefly those from the lower part of the anterior wall, end in the lower main group and in some cases (Specimen 83) even in glands of the upper group. In one case (Specimen 74) one of these vessels turned backwards in the upper part of the ileo-colic fold and entered a posterior ileo-colic gland. From the posterior surface vessels run from the body and base of the cæcum to end in the posterior ileo-colic glands. Some vessels, however, pass these glands and end in the lower group of the main chain.

The vessels from the terminal portion of the ileum may be divided into three sets. The greater number of the vessels issuing from the last six inches of the small gut pass into the mesentery and end in the glands of the ileal group. But this is not the only path. If injection is made into the ileum as far out as six inches from the ileo-colic junction vessels will be seen to arise from the plexus, run to the right along the gut, to end in the anterior ileo-colic glands or in the lower main group. Another vessel pursuing a similar course along the free margin of the gut turns into the ileo-appendicular fold and enters the cæcal end of the meso-appendix, terminating in a gland of the posterior ileo-colic group. From the posterior surface of the extremity of the colon short vessels pass directly to the posterior ileo-colic glands. The vessels arising from the ascending colon pass transversely over the anterior and posterior surfaces of the gut and enter the numerous small glands which we have named the right colic glands. Here, as in the case of the vessels proceeding from other parts of the intestine, the glands do not intercept all the vessels; many pass inwards and end in the glands of the main chain.

The efferent vessels of the gland groups into which the lymphatics of the cæcum and appendix pass run as follows: those from the anterior ileo-colic glands enter the lower main group; in one specimen (63) vessels may be seen to end in the upper group. Those from the posterior ileo-colic group run to the lower group. In one specimen (N), an efferent from one of the posterior ileo-colic glands, injected from the back of the cæcum, passes upwards to a gland on the right colic artery. The efferents from the appendicular gland run to one of the glands of the lower group. Efferents from the lower group run to glands of the upper group, while the

³ Tixier and Viannay, *Lyon Medical*, 1901, No. 15, pp. 471-74.

of vessels should be considered together to insure, where possible, a common nomenclature. The ileo-colic artery arises from the superior mesenteric artery on the third part of the duodenum. At the lower border of the duodenum it leaves the root of the mesentery and proceeds downwards and outwards behind the parietal peritoneum towards the angle between the ileum and the ascending colon. At a distance of about an inch from the ileo-colic angle it breaks up into several branches—appendicular, anterior ileo-colic, posterior ileo-colic, ileal, and colic. At a variable distance from its origin it usually gives off the right colic artery, though this vessel may spring independently from the superior mesenteric trunk.

The terminal branches are inconstant in their mode of origin; usually the main artery gives off the appendicular and then divides into the anterior and posterior ileo-colic branches. The anterior branch gives off the ileal vessel, the posterior the colic. The appendicular artery descends in or near the free margin of the meso-appendix and terminates at the tip of the organ. It gives off branches, gradually decreasing in length, to the whole of the appendix. In many cases, however, one or more branches pass from the posterior ileo-colic artery to the proximal portion of the appendix. The ileal branch passes onwards in the mesentery to anastomose with the terminal portion of the superior mesenteric, and it supplies several inches of the ileum. The anterior ileo-colic descends in the ileo-colic fold and supplies the anterior surface of the cæcum, its terminal twigs reaching the root of the appendix; it also supplies a branch to the end of the ileum. The posterior ileo-colic descends behind the ileo-cæcal junction, supplying the back of the cæcum and the terminal portion of the ileum. As we have already noted, it often gives a branch or branches to the proximal portion of the appendix. The colic branch ascends along the inner side of the ascending colon and anastomoses with the right colic artery.

The following account of the lymphatic glands and vessels of the cæcum and appendix is based upon an examination of 25 specimens injected by the method of Gerota. The ileo-colic artery is surrounded from its origin to its division by a chain of lymphatic glands varying in number from 10 to 20, and in size from that of a pin's head to that of an almond. The chain is continuous, often without interspace, with the glands around the trunk of the superior mesenteric artery. Though the chain is frequently concatenate, it usually shows a tendency to fall into two groups, one lying on and below the lower border of the duodenum and the other above and around the point of division of the artery. For purposes of description it is of great convenience to divide the main ileo-colic chain into two groups, an upper group and a lower group. This division, as we have intimated, though frequently quite arbitrary, is not always so. The reasons which prompt us to make use of this subdivision will appear when the course of the lymphatic vessels coming from the cæcum and appendix is under consideration. It would be difficult to give an accurate description of these vessels without subdividing the main chain of glands.

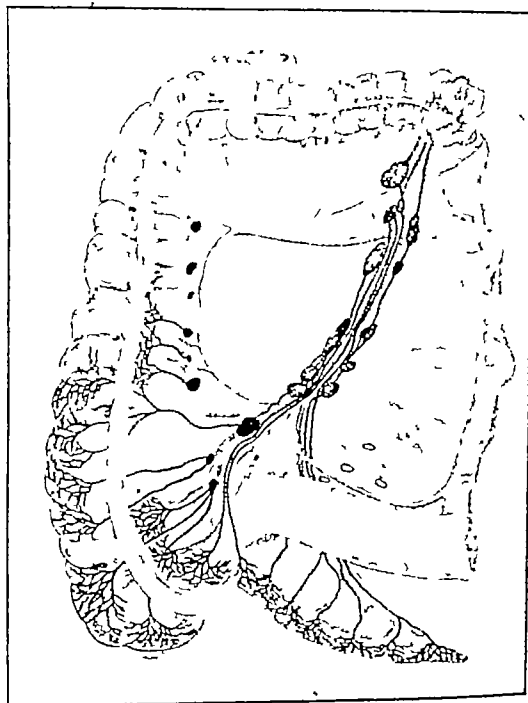
At the point where the ileo-colic artery gives off its terminal branches the chain of glands becomes broken up into several groups which are associated with the branches of the artery. These groups are constant in position though not in the number of their constituent members, and are sufficiently distinct from each other to be described as separate groups; still they must be regarded merely as outlying portions of the main chain. Five groups may be described: (1) anterior ileo-colic; (2) posterior ileo-colic; (3) appendicular; (4) ileal; and (5) right colic.

The anterior ileo-colic glands vary in number from one to four, the usual number being three. They lie in the ileo-colic fold close to the wall of the cæcum; they may be continuous with the lower group of the main chain but it is more common to find an interval between them. The highest gland, which lies in the upper part of the fold just above the ileum, is almost invariably the largest. It is very unusual to find members of this group at a lower level than the lower margin of the ileo-cæcal junction.

The posterior ileo-colic glands are more numerous and less regularly disposed; this group is evidently the direct continuation of the main ileo-colic chain, and it is often impossible to mark the exact point of transition. The greater number of the glands lie in the angle between the ileum and the colon; some small glands are to be found lying in the groove between the cæcum and colon on the posterior surface of the cæcum and in about half the number of specimens we

have examined one or more project between the layers of the meso-appendix at its cæcal extremity.

FIG. 4.



Lymphatics of the cæcum and appendix. Anterior view.

The appendicular gland.—Between the layers of the meso-appendix at or near its free border a single small gland may sometimes be seen lying on the appendicular artery. (Specimens B, C, D, &c.) Its position on the artery is variable; it may lie some distance from the base of the meso-appendix or it may be quite close to its attachment. In one case (Specimen 30) it lay only partially between the layers of the fold. As the lower group of the main chain lies just above the attachment of the fold it seems evident that this gland is a prolapsed member of that group.

Ileal glands.—In the right end of the mesentery small glands lie in association with the ileal branch of the ileo-colic artery. They are most irregular in number and in size and only receive some of the vessels from the terminal portion of the ileum. As their efferents pass to the main ileo-colic chain we have regarded them as a subsidiary group of this chain.

The right colic glands, numerous but small in size, lie along the inner side of the ascending colon. They are in close contact with the wall of the colon, many of them being situated in the sulci in front of, and behind, the internal taenium. The lower ones are associated with the colic branch of the ileo-colic artery, the upper with the branches of the right colic artery. As their efferents terminate in the glands of the ileo-colic chain we speak of the whole row, from the cæcum to the hepatic flexure, as the right colic glands. Singularly few glands are to be encountered along the trunk of the right colic artery. In some of our specimens (A and N) we have seen one or two small glands, but in the majority none are to be found.

The plexuses of origin of the lymphatic vessels have been well described by various writers. We shall only briefly consider them in order to refer to some points of interest. According to Kelly and Hurdon¹ the lymphatic plexus of the appendix may be divided into three layers—superficial, middle, and deep—lying respectively under the peritoneum, under the circular muscular coat, and under the muscularis mucosæ. Each layer consists of a capillary plexus draining into larger collecting vessels which issue from the wall of the organ at the attachment of the meso-appendix.

¹ Kelly and Hurdon. The Vermiform Appendix and its Diseases, 1905.

and a gland in this fold. Lockwood supports these statements from clinical observations. Polrier and Cuneo formally deny the presence of such a communication and Polya and a Navratil have not been able to find it. We have never seen a trace of this communication in any of our specimens, and we do not believe that it exists. Kelly and Hurdon suggest that there is such a communication between the lymphatics of the appendix and those of the ovary by means of the subperitoneal lymphatic plexus which exists everywhere in that tissue, but they have been unable to find lymphatic vessels running from the appendix in the appendiculo-ovarian fold. Comparatively little attention has been given to the vessels of the cæcum in the past. This may be due to the fact that this organ is far more difficult to inject than any other part of the intestine. Most writers simply state that the vessels of the cæcum run to the neighbouring glands. We would emphasise what has been already stated, that while the majority of the vessels from the body and base of the cæcum are intercepted by the anterior and posterior ileo-colic glands, some of these, together with those of the apex of the organ, frequently pass beyond these glands to high glands of the ileo-colic chain, that vessels of the cæcum may ascend to the meso-appendix, and that they freely communicate with the vessels of the appendix.

We have now to consider the practical importance of the information we have derived on the lymphatic system of the cæcum and appendix. We find here a large agglomeration of lymphatic glandular tissue devoted to a comparatively small portion of the alimentary canal. It is evident that this mass of glands is of great importance and that its defensive powers will frequently be called upon. The changes which may take place in the glands of the ileo-colic chain as a result of disease are of the greatest practical importance. Acute inflammation may occur as a result of infection from the appendix in cases of appendicitis, or from the cæcum in rare cases of typhilitic ulceration; tuberculosis is met with not infrequently, and the glands may be invaded by secondary deposits in cases of malignant growth of the cæcum and appendix. Acute inflammation of the glands of the ileo-colic chain in cases of appendicitis is possibly more common than is generally recognised, although it is rare for suppuration to occur. Quenu¹¹ states that it is common in cases of fulminating appendicitis to find the glands of the chain enlarged and inflamed and he believes that the presence of a tender area reaching from the right iliac fossa upwards and towards the middle line is an indication of glandular inflammation and affords some guidance as to the severity of the infection. If it were possible during operations for acute appendicitis to ascertain the condition of the glands of the ileo-colic chain it is likely that they would frequently be found in the condition described by Quenu. Few cases have been recorded in which suppuration of these glands has occurred. Ricard¹² reports a case in which an operation was performed for acute appendicitis. The patient left the hospital apparently well but returned with acute symptoms necessitating a re-opening of the abdomen. Ricard found a chain of infected glands, some of which were full of pus. They were extirpated with a good result. Bloodgood¹³ describes a rare case of appendicitic abscess situated between the layers of the mesentery. The patient was a child; "one could palpate in the middle zone of the abdomen, a mass about the size of two fists slightly moveable from right to left but not from above down (on opening the abdomen) beginning at the cæcum and extending at least to the third lumbar vertebra between the folds of the mesentery there was a mass on separating the exudate at the junction of the ileum and cæcum pus was encountered and a large abscess cavity was found extending towards the vertebral column between the folds of the mesentery." On careful consideration of this case it is difficult to avoid the conclusion that the abscess was due to suppuration of the glands of the ileo-colic chain.

In view of the frequency of appendicitis the comparative rarity of glandular suppuration is somewhat surprising. Cornier¹⁴ suggests that it is due to the fact that the glands become tolerant and inured to the products of bacterial action, so that they are very rarely excited to the pitch of suppuration. It is possible that glandular abscesses are frequently overlooked; for example, an abscess originating

in the posterior ileo-colic glands may easily be opened during the course of the operation without any suspicion of its nature being aroused. It must be remembered in this connexion that, as we have already shown, lymph vessels run directly from the appendix to any gland, even the highest, of the ileo-colic chain, and that there is therefore no reason why the highest gland should not become infected and suppurate just as readily as the lowest. It is conceivable, therefore, that a glandular abscess, due to infection from the appendix, might form in front of the third part of the duodenum.

The ileo-colic chain of glands is frequently affected by tuberculosis. It is common enough in children suffering from abdominal tuberculosis to feel a mass of enlarged glands in this situation, and on examination of these glands in a series of necropsies they frequently show signs of previous disease. Corner¹⁵ describes the case of a boy who had a well-defined mass in the region of the cæcum of about the size of a cricket ball. On opening the abdomen the omentum was found adherent to the mass. "After gradually stripping this off a large rounded mass was found lying in the mesentery, adherent to the cæcum, the ascending colon, and partly to the transverse colon. During manipulation a weak spot in the wall of the swelling gave way, tuberculous caseous pus escaping the cavity extended upwards and inwards towards the root of the mesentery." The cavity was cleaned and obliterated by suture, recovery ensuing. Gerard Marchant¹⁶ reports two cases in which he had treated diseased glands in this region by operation. In one case during the removal of the appendix it was found that there was a mass formed by two caseous glands, apparently in the ileo-colic fold. They were enucleated with ease. In a second case during an operation for appendicitis a mass of enlarged glands was found on the anterior surface of the cæcum; these were curetted and cauterised. In the majority of cases the affection of these glands will be merely an incident in a general tuberculosis of the mesenteric glands. Should operative treatment become necessary the intimate relation of this glandular chain to the ileo-colic artery and vein must be borne in mind; if these vessels are damaged by a too vigorous attempt to remove the diseased glands the vitality of a considerable portion of the intestine will be endangered.

It is in connexion with malignant disease of the cæcum and appendix that the exact anatomy of these lymphatic vessels and glands becomes of the greatest importance. Indeed, it is extraordinary how little attention has been directed to this question in the past. It may be partially explained by the fact that the attention of surgeons has been so much bestowed on the perfection of the mechanical means of restoring the continuity of the intestinal canal after a malignant growth has been removed that the possibility of removing the lymphatics at the same time has received little attention. Another factor which has militated against any serious attempt to remove the lymphatic apparatus in connexion with the cæcum is the fear always present in the mind of the surgeon who is removing a portion of intestine of interfering with the blood-supply of the intestine at the suture line. Furthermore, it is an accepted doctrine that glandular infection does not occur in the early stages of malignant disease of the intestine; whether this doctrine is worthy of the belief which has been accorded it in the past is open to question. To illustrate the methods usually adopted at the present time in dealing with the glands in cases of carcinoma of the cæcum a quotation may be given from one of the most recent and complete works on abdominal surgery. Moynihan,¹⁷ in his description of the operation of excision of the cæcum, after giving the preliminary steps, says: "The ascending colon must then be freed from the posterior abdominal wall to which it is often adherent. For this purpose the parietal peritoneum to the outer side of the colon is incised and raised up towards the colon. The stripping must be continued towards the middle line, behind the termination of the enteric mesentery, so that any enlarged glands—and of these there may be many—are made free also as a general rule the tumour mass will by this means be rendered sufficiently mobile to permit of its easy withdrawal from the abdomen in some few instances, however, owing to the density of the adhesions, or the shortness of the enteric mesentery, or to the enlargement of glands this may

¹¹ Quenu: *Revue de Chirurgie*, 1902, vol. xxi, p. 743.

¹² Ricard: *Ibid.*, 1900, vol. xxi, p. 577.

¹³ Bloodgood: *American Journal of the Medical Sciences*, vol. cxviii, 1900, p. 61.

¹⁴ Cornier: *The Lancet*, Dec. 23rd, 1906, p. 1522.

¹⁵ *Ibid.*, 1907.

¹⁶ Gerard Marchant: *Revue de Chirurgie*, 1900, vol. xxi, p. 520.

¹⁷ Moynihan: *American Operative Surgery*, 1903, p. 322.

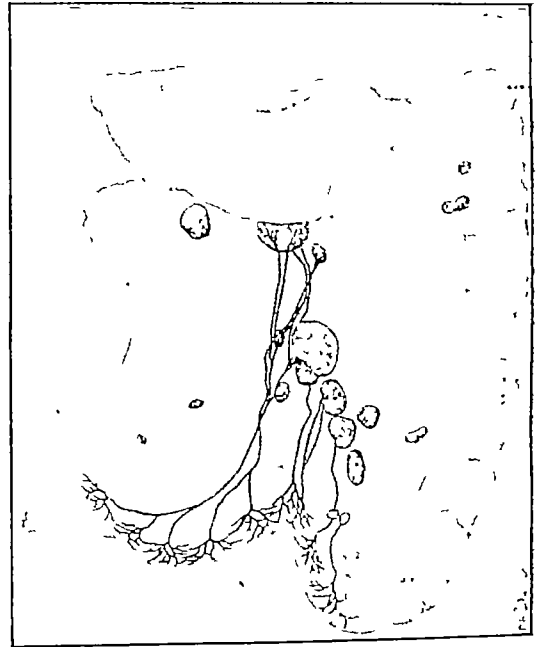
effluents of the upper group pass to the glands around the trunk of the superior mesenteric artery.

The anatomy of the lymphatics of the cæcum and appendix has been much obscured by an unnecessary subdivision of gland groups and by a redundant nomenclature. Poirier and Cunéo⁴ describe three groups of glands lying in the meso-appendix; they term these the retro-ileal, the sub-ileal, and the juxta-cæcal appendicular glands. Olado in his classic memoir⁵ attaches prime importance to a gland situated in the base of the meso-appendix close to the cæcum; this gland he considers to be the chief recipient of the vessels of the appendix. This view was supported by Lafforgue,⁶ who gives tables showing the number and frequency of occurrence of the glands in the meso-appendix. These descriptions limit the attention to the glands near the appendix; in the paper by Tixier and Viannay⁷ we have another illustration of this contracted view of the lymphatics of the appendix in this remark: "Lafforgue, who has studied the glands of the appendix, has well shown that this organ is often furnished with more than one gland." They proceed to show that the lymphatic vessels of the appendix drain into three groups of glands, cæco-appendicular glands lying in the outer angle of the meso-appendix, ileo-appendicular at its inner angle, and meso-appendicular glands lying between these; all these groups are inconstant in presence and number. They advance a step in pointing out that there is more than one lymphatic current from the appendix.

By far the most complete and satisfactory description is that given by Polya and von Navratil⁸ from the study of 13 injected specimens. This paper seems to have escaped general notice, as it is never quoted, and it did not come within our knowledge until our own work was well advanced. In the main our observations agree with theirs, but they are able to quote only one case in which lymphatic vessels from the appendix pass to the higher glands of the ileo-colic chain. Kelly and Hurdon⁹ gave an elaborate account of the lymphatic plexuses, vessels, and glands of the appendix. In the main their description agrees with that of Poirier and Cunéo, but they describe four types of lymphatic circulation from the appendix. We have purposely avoided any classification into types because there is such variety in the arrangement of the vessels and distal glands that it would be possible to multiply the types to any extent and their enumeration would merely obscure the main and important points. The subdivision of the glands into small groups with the consequent increase in the number of names leads to great confusion, of which we find numerous examples in the literature. The gland described by Olado, lying in the outer angle of the meso-appendix, is commonly placed by other authors in the inner angle. In all these descriptions too much importance is attached, perhaps unwittingly, to the glands in the meso-appendix. The specimens from which our description is made show that the glands in the meso-appendix are merely prolapsed members of the posterior ileo-colic gland group and of the lower group of the main ileo-colic chain. The gland which we have termed "appendicular," lying in or near the free border of the meso-appendix, is met with at various levels, sometimes only projecting between the layers at their attachment, sometimes just below the attachment, and sometimes a considerable distance below. When the specimens are compared it becomes very evident that the gland is merely one of the lower group glands. Similarly, the gland or glands which are sometimes found in the upper outer angle of the meso-appendix close to the cæcum are really members of the posterior ileo-colic group; consequently this gland, or glands, on which so much stress is laid by Olado and others, is always present, but does not always lie in the meso-appendix. The group certainly does not require a special name. But the presence or absence of glands in the meso-appendix is a matter of the slightest importance, in view of the fact that these glands even when present do not intercept more than a few of the appendicular lymphatics. It is of importance, and it is the point to which we wish to draw attention, that

lymphatic vessels from any part of the appendix, root, body, or tip, run past the glands in the vicinity of the organ to glands of the main ileo-colic chain, reaching even those members of the upper group which lie on the duodenum. On this point we were entirely uninformed by previous descriptions and it is of great importance to recognise the fact that practically any gland of the ileo-colic chain, from its upper to its lower end, may be a primary gland for the appendicular vessels.

FIG. 6.



Lymphatics of the cæcum and appendix. Two appendicular arteries are present with lymphatic vessels accompanying each.

The account of the lymphatic system of the appendix given by Lockwood differs materially from that of other authors. He says: "I have so frequently found a chain (of glands) along the inner side of the right colon behind the ascending meso-colon, that I have come to the conclusion that this is the course which the appendicular lymphatics mainly pursue. Others without doubt open into the mesenteric glands."¹⁰ There is also a statement to the effect that the lymphatics of the appendix form connexions with the chain of glands lying close to the common and external iliac arteries. In a footnote Lockwood maintains his position against the criticisms of Poirier and Cunéo and of Kelly and Hurdon. We have found in all our specimens the numerous glands which lie along the inner side of the ascending colon and we conclude that these are the glands referred to. But these glands, the right colic glands, drain the colon and have nothing to do with the cæcum and appendix. Some of our specimens (Nos. 55 and 83) show that the main ileo-colic chain may lie close to the ascending colon and it is quite possible that in cases of appendicitis, from which Mr. Lockwood's observations were made, when the glands are perhaps considerably enlarged and when the ascending colon is distended, they may appear to lie in the position described by him. It seems probable that the chain of glands which he has observed is really the ileo-colic chain and is not formed by the right colic glands; we find in his description strong confirmation of our contention that in diseases of the appendix this chain in its entirety may be affected. We have not met with any communication between the lymphatics of the cæcum and appendix and the glands lying along the common and external iliac arteries. A great deal of attention has been directed to the statement of Olado that there is a communication between the lymphatics of the appendix and those of the ovary and uterus, in the so-called appendiculo-ovarian fold. Olado states that he found this communication in two injected specimens. Tixier and Viannay in one case

⁴ Poirier and Cunéo. *Les Lymphatiques*, tome II., fasc. 4, of *Traité d'Anatomie Humaine*; translated and edited by C. Leaf.

⁵ Olado. *Comptes Rendus de la Société de Biologie*, 1892, vol. IV., p. 142.

⁶ Lafforgue. *International Journal d'Anatomie et de Physiologie*, 1893.

⁷ Loc. cit.

⁸ Polya and von Navratil. *Deutsche Zeitschrift für Chirurgie*, 1903, Band LIX., S. 421.

⁹ Kelly and Hurdon: Loc. cit.

¹⁰ Lockwood. *Appendicitis, its Pathology and Surgery*. Second edition.

found a gland in this fold. Lockwood supports these statements from clinical observations. Poirier and Caneco formally deny the presence of such a communication and Polya and von Naxrath have not been able to find it. We have never seen a trace of this communication in any of our specimens, and we do not believe that it exists. Kelly and Hurdon suggest that there is such a communication between the lymphatics of the appendix and those of the ovary by means of the subperitoneal lymphatic plexus which exists everywhere in that tissue, but they have been unable to find lymphatic vessels running from the appendix in the appendiculo-ovarian fold. Comparatively little attention has been given to the vessels of the cæcum in the past. This may be due to the fact that this organ is far more difficult to inject than any other part of the intestine. Most writers simply state that the vessels from the cæcum run to the neighbouring glands. We would emphasise what has been already stated, that while the majority of the vessels from the body and base of the cæcum are intercepted by the anterior and posterior ileo-colic glands, some of these, together with those of the apex of the organ, frequently pass beyond these glands to high glands of the ileo-colic chain, that vessels of the cæcum may ascend in the meso-appendix, and that they freely communicate with the vessels of the appendix.

We have now to consider the practical importance of the information we have derived on the lymphatic system of the cæcum and appendix. We find here a large agglomeration of lymphatic glandular tissue devoted to a comparatively small portion of the alimentary canal. It is evident that this mass of glands is of great importance and that its defensive powers will frequently be called upon. The changes which may take place in the glands of the ileo-colic chain as a result of disease are of the greatest practical importance. Acute inflammation may occur as a result of infection from the appendix in cases of appendicitis, or from the cæcum in rare cases of typhlitic ulceration; tuberculosis is met with not infrequently, and the glands may be invaded by secondary deposits in cases of malignant growth of the cæcum and appendix. Acute inflammation of the glands of the ileo-colic chain in cases of appendicitis is possibly more common than is generally recognised, although it is rare for suppuration to occur. Quenu¹¹ states that it is common in cases of fulminating appendicitis to find the glands of the chain enlarged and inflamed and he believes that the presence of a tender area reaching from the right iliac fossa upwards and inwards towards the middle line is an indication of glandular inflammation and affords some guidance as to the severity of the infection. If it were possible during operations for acute appendicitis to ascertain the condition of the glands of the ileo-colic chain it is likely that they would frequently be found in the condition described by Quenu. Few cases have been recorded in which suppuration of these glands has occurred. Ricard¹² reports a case in which an operation was performed for acute appendicitis. The patient left the hospital apparently well but returned with acute symptoms necessitating a re-opening of the abdomen. Ricard found a chain of infected glands, some of which were full of pus. They were extirpated with a good result. Bloodgood¹³ describes a rare case of appendicitis abscess situated between the layers of the mesentery. The patient was a child; "one could palpate in the middle zone of the abdomen, a mass about the size of two fists slightly movable from right to left but not from above down (on opening the abdomen) beginning at the cæcum and extending at least to the third lumbar vertebra between the folds of the mesentery there was a mass on separating the exudate at the junction of the ileum and cæcum pus was encountered and a large abscess cavity was found extending towards the vertebral column between the folds of the mesentery." On careful consideration of this case it is difficult to avoid the conclusion that the abscess was due to suppuration of the glands of the ileo-colic chain.

In view of the frequency of appendicitis the comparative rarity of glandular suppuration is somewhat surprising. Corner¹⁴ suggests that it is due to the fact that the glands become tolerant and inured to the products of bacterial action, so that they are very rarely excited to the pitch of suppuration. It is possible that glandular abscesses are frequently overlooked; for example, an abscess originating

in the posterior ileo-colic glands may easily be opened during the course of the operation without any suspicion of its nature being aroused. It must be remembered in this connexion that, as we have already shown, lymph vessels run directly from the appendix to any gland, even the highest, of the ileo-colic chain, and that there is therefore no reason why the highest gland should not become infected and suppurate just as readily as the lowest. It is conceivable, therefore, that a glandular abscess, due to infection from the appendix, might form in front of the third part of the duodenum.

The ileo-colic chain of glands is frequently affected by tuberculosis. It is common enough in children suffering from abdominal tuberculosis to feel a mass of enlarged glands in this situation, and on examination of these glands in a series of necropsies they frequently show signs of previous disease. Corner¹⁵ describes the case of a boy who had a well-defined mass in the region of the cæcum of about the size of a cricket ball. On opening the abdomen the omentum was found adherent to the mass. "After gradually stripping this off a large rounded mass was found lying in the mesentery, adherent to the cæcum, the ascending colon, and partly to the transverse colon. During manipulation a weak spot in the wall of the swelling gave way, tuberculous caseous pus escaping the cavity extended upwards and inwards towards the root of the mesentery." The cavity was cleaned and obliterated by suture, recovery ensuing. Gerard Marchant¹⁶ reports two cases in which he had treated diseased glands in this region by operation. In one case during the removal of the appendix it was found that there was a mass formed by two caseous glands, apparently in the ileo-colic fold. They were enucleated with ease. In a second case during an operation for appendicitis a mass of enlarged glands was found on the anterior surface of the cæcum; these were curetted and cauterised. In the majority of cases the affection of these glands will be merely an incident in a general tuberculosis of the mesenteric glands. Should operative treatment become necessary the intimate relation of this glandular chain to the ileo-colic artery and vein must be borne in mind; if these vessels are damaged by a too vigorous attempt to remove the diseased glands the vitality of a considerable portion of the intestine will be endangered.

It is in connexion with malignant disease of the cæcum and appendix that the exact anatomy of these lymphatic vessels and glands becomes of the greatest importance. Indeed, it is extraordinary how little attention has been directed to this question in the past. It may be partially explained by the fact that the attention of surgeons has been so much bestowed on the perfection of the mechanical means of restoring the continuity of the intestinal canal after a malignant growth has been removed that the possibility of removing the lymphatics at the same time has received little attention. Another factor which has militated against any serious attempt to remove the lymphatic apparatus in connexion with the cæcum is the fear always present in the mind of the surgeon who is removing a portion of intestine of interfering with the blood-supply of the intestine at the suture line. Furthermore, it is an accepted doctrine that glandular infection does not occur in the early stages of malignant disease of the intestine; whether this doctrine is worthy of the belief which has been accorded it in the past is open to question. To illustrate the methods usually adopted at the present time in dealing with the glands in cases of carcinoma of the cæcum a quotation may be given from one of the most recent and complete works on abdominal surgery. Moynihan¹⁷ in his description of the operation of excision of the cæcum, after giving the preliminary steps, says: "The ascending colon must then be freed from the posterior abdominal wall to which it is often adherent. For this purpose the parietal peritoneum to the outer side of the colon is incised and raised up towards the colon. The stripping must be continued towards the middle line, behind the termination of the enteric mesentery, so that any enlarged glands—and of these there may be many—are made free also as a general rule the tumour mass will by this means be rendered sufficiently mobile to permit of its easy withdrawal from the abdomen in some few instances, however, owing to the density of the adhesions, or the shortness of the enteric mesentery, or to the enlargement of glands this may

¹¹ Quenu, *Revue de Chirurgie*, 1904, vol. xxi, p. 174.
¹² Ricard, *Revue de Chirurgie*, 1904, vol. xxi, p. 174.
¹³ Bloodgood, *Journal of the Medical Science*, vol. cxviii, p. 174.

¹⁴ Corner, *Revue de Chirurgie*, 1904, vol. xxi, p. 174.
¹⁵ Gerard Marchant, *Revue de Chirurgie*, 1904, vol. xxi, p. 174.

not be possible. In such circumstances the mesentery is tied off in sections and divided on the proximal side of the enlarged glands." It will be seen that although any palpably enlarged glands are removed by this method no attempt is made to deal with a possibly infected lymphatic area.

A method of removing a growth of the cæcum or ascending colon has recently been published by F. S. Bird.¹³ His description of the operation is as follows:—

The tumour is located and its removal being decided on the transverse colon is pulled down, two forceps are applied to it close together, a heavy one on the proximal side, and the gut is divided with large scissors in one cut. Swabs are used to avoid soiling the cavity, and the heavy forceps attached to the gut is allowed to hang out of the wound, a proceeding which puts the mesocolon on the stretch. The branches of the middle colic artery are easily found, for they stand out by reason of the tension and the fact that they are the thickened arteries of an elderly person. Two or three branches have to be secured. The right colic artery now invites attention and can readily be tied far back by a single ligature; this devascularises a large portion of meso-colon, which can be speedily severed by large scissors. The amount of gut at present hanging out of the wound is considerable, as the cæcum "is in the air" without support. The resulting traction shows the ileo-colic trunk in strong salience. Forceps are then placed on the ileum, about four inches from the junction of the great and small intestine, and the gut is divided; the distal end now depends from the wound, so that the whole portion to be resected is hanging by the ileo-colic artery and some peritoneum. This blood-vessel is ligatured far back, the isthmus of tissue left is divided close to it, and the resected gut, two forceps, and the ileo-colic glands fall out of the wound altogether. There is no need to investigate the important ileo-colic lymphatic area, for it has gone.

By this operation Bird appears to secure some of the lower glands, the anterior and posterior ileo-colic groups, but it is evident from the fact that he secures the right colic and the ileo-colic arteries separately, that the important glands of the main ileo-colic chain are not removed.

Considerable permanent success has, however, attended the removal of malignant growths of the intestine, on these lines. In the case of carcinoma of the sigmoid colon, this may be easily understood; these growths are usually of the constricting variety; they produce obstruction of the intestine, in the majority of cases, long before any tumour is palpable and at a comparatively early stage of the disease. Surgical interference becomes necessary for the relief of the obstruction; the condition is recognised and, in favourable cases, the growth may be removed while still in an early stage and probably before glandular infection has taken place. In the case of malignant growths of the cæcum and ascending colon it is a different matter; such growths are almost always recognised as palpable tumours before they have produced symptoms of intestinal obstruction of such severity that operative treatment is imperative. That is to say, they have reached a later stage and are much more likely to have given rise to glandular infection at the time the condition is recognised. It is impossible for us to bring forward any figures demonstrating the frequency of glandular metastasis in cases of malignant disease of the cæcum and ascending colon, or of the extent of the glandular affection. Such cases as we are referring to are comparatively rare; a record of the history after operation of a number of cases would be very difficult to obtain, and even if we were possessed of such a record it would be impossible to say what proportion of the recurrences was due to persistence of the disease in the lymphatic glands and what proportion was due to liver metastasis already present at the time of removal of the primary growth and what to local recurrence.

Text-books have little to say on the subject of lymphatic infection in cases of cancer of the intestine. It is well known that it does occur but of its frequency and extent we know little. It must be remembered that, as we have shown, lymphatic vessels having their origin in the cæcum and colon pass directly not only to the subsidiary gland groups of the ileo-colic chain but even to the lower and upper groups of that chain. This is particularly well seen in Specimen 83, where a vessel arising on the anterior surface of the cæcum is seen running in the ileo-colic fold, past the glands there situated, past the lower group of the main chain, to end in a gland of the upper group. This condition is not so frequent in the case of the caecal lymphatics as in those of the appendix, but it does occur and account must be taken of its occurrence. It is obvious, therefore, that if infection of the glands takes place by a process of embolism, the lower glands of the main chain, and even the upper glands are just as likely to become infected, and that as early in the course of the disease as are the glands in close relation to the cæcum.

In operating for malignant disease, if any attempt is

made to remove glands which are possibly infected, the upper glands of the ileo-colic chain must receive attention. It seems advisable, therefore, in these cases to apply those principles which have been found so successful in the treatment of malignant disease of other organs—viz., to remove not only the organ containing the primary growth but the lymphatic glands receiving vessels from it, the vessels themselves, and the tissues in which these vessels lie. This can be done without a doubt; indeed, there is in the whole body no organ which is so happily placed as the cæcum in this respect; it is possible to remove all the glands receiving vessels from the cæcum and all the vessels, without leaving any subsidiary channels untouched, as must be done in the case of other organs, such as the breast. And this without any very serious extension of the operation usually practised—indeed, with considerable gain, the more radical operation giving a far better control over the blood supply and enabling the surgeon to recognise and avoid important structures which may be wounded and have frequently been wounded in the past. In cases suitable for radical treatment the operation which is suggested by the arrangement of the lymphatics is as follows. After opening the abdomen and exposing the field of operation the lower border of the third part of the duodenum is defined. The peritoneum over this is divided for a short distance and careful search is made for the ileo-colic vessels. The fatty tissue surrounding the vessels, which will contain the uppermost gland of the ileo-colic chain, is pushed downwards and the vessels cleaned by gauze stripping. At this stage the greatest possible care must be taken not to wound the duodenum. The artery and vein are then ligatured in two places and divided, the point of division of the artery being about half an inch from the superior mesenteric trunk. This step will devascularise the whole of the ascending colon, and it is well at this stage to select the point on the colon, at the hepatic flexure or, if an excessive amount of contraction of the colon has been caused by the growth, on the transverse colon, where the gut shall be divided. The peritoneum is then divided from the duodenum to the selected point on the colon, but the section of the gut is deferred until towards the end of the operation. In doing this it will be necessary to secure some branches of the middle colic artery, and if the right colic artery has a separate origin from the superior mesenteric it will also need attention. The peritoneum of the anterior layer of the mesentery is then divided in a line reaching obliquely downwards to the ileum. The ileo-colic and right colic vessels, with the accompanying chain of glands, the fatty tissue, and the overlying peritoneum, are then stripped downwards to the ileum and cæcum and outwards to the colon. In doing this the ureter will be encountered and must be carefully avoided. The cæcum is then lifted up and the peritoneal reflection from it and from the outer side of the colon on to the posterior abdominal wall is divided; a portion of the posterior layer of the mesentery of the small intestine will also require section.

The cæcum and appendix, the whole of the ascending colon, and the terminal portion of the ileum, with the ileo-colic and right colic vessels and the accompanying lymphatic chain, can then be withdrawn from the abdomen, only remaining attached by the continuity of the intestine. At the previously selected point the colon is divided. Some care is needed in determining the point at which the ileum is to be cut through. The terminal portion is supplied by an arcade formed by the ileal branch of the ileo-colic artery and the terminal portion of the superior mesenteric artery. In order to obtain a sufficient blood supply to the ileum at the point of section it is necessary to divide it at some distance (about six inches) from the ileo-caecal valve at about the point where the last part of the superior mesenteric artery runs downwards in the mesentery. If it is divided too close to its termination the blood supply of the cut end will be endangered owing to the removal of the ileo-colic artery.

It is not within the scope of this paper to discuss the various methods of restoring the continuity of the intestinal canal after a portion has been removed. A satisfactory canal after a portion has been removed. A satisfactory method of completing the operation will be to close the ends of both ileum and colon, to draw the termination of the ileum up to the transverse colon, and to effect a lateral anastomosis between the two. In this way the mesentery will be drawn over the raw area on the posterior wall of the abdomen and may be held in position by a few points of suture through the peritoneum. The question naturally

arises. Is it necessary to perform this formidable operation in cases of malignant disease of the appendix? If an undoubted malignant growth of the appendix is found, particularly if it extends on to the caecum, then it certainly would be advisable to do so. A study of recorded cases demonstrates the fact that frequently the condition has not been suspected until a microscopical examination of the appendix, which has usually been removed for recurrent attacks of appendicitis, has been made. In such cases the extensive operation is probably unnecessary.

A SERIES OF CASES OF GOITRES REMOVED UNDER COCAINE ANÆSTHESIA.¹

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ORDINARY goitres are fairly common throughout Wales and Monmouthshire, and in some counties they occur with great frequency, whilst in three counties—viz., Pembroke, Carnarvon, and Anglesea—they are rarely met with. Two years ago Dr. William Williams, medical officer of health of the county of Glamorgan, and I sent a circular letter with questions relating to the prevalence of goitre to every medical practitioner within the above areas and we received replies from 231. We have not yet completed our investigations, but I am allowed to make use of some of the facts that we gleaned from this inquiry. There are many districts where goitres are very prevalent and few in which they are absent. With regard to the causation of ordinary goitres, the opinion of medical practitioners who have observed the rapid transformation of the sparsely populated rural districts of Glamorgan and Monmouth to the present densely populated condition is of great importance and value. For example, Dr. T. Hall Redwood of Rhymney states that 30 years ago ordinary goitres were common in his practice, but since the construction of the new waterworks they have practically disappeared. Similar views have been received from others practising in the county of Glamorgan. The following extract from a letter I received from Mr. —, upon whom I operated for goitre in July, 1903, is of interest in connexion with what seems to me to be the effect of change of water-supply upon the development of goitre. He says: "I am one of six children; the first four were born near Aberystwyth and the other two were born after my parents removed to Glamorganshire, where they obtained drinking water from a deep well in the garden. 1. My eldest sister was ten years old when we came to Glamorgan and a few years after she had a goitre and was an invalid on that account for seven years, before the late Mr. Greig Smith operated upon her in October, 1895, and was under treatment for some months afterwards. 2. My eldest brother was eight years of age when he came to Glamorgan, and before he was 12 years of age developed a goitre, and was operated upon by Sir Frederick Treves in November, 1893, at the London Hospital. He lost his voice for three months and eventually recovered it completely. 3. I came to Glamorgan when six years old and a goitre appeared when about 10 to 12. It grew steadily until it was removed by yourself when I spent the first week of my summer holidays of 1903 at your private hospital, and have been well ever since. 4. Next brother, free from goitre, and went to Leatherhead to school when 10 years of age. 5. Sister, had goitre, noticed when 19 years of age. 6. Sister, had no goitre, and went to school at Bristol."

The eldest three of the above family developed goitres within a few years after going to their new home, and the two boys showed symptoms between 10 and 12 years of age. The younger members of the family spent more time away from their home and the absence of goitre is ascribed to this fact by my correspondent. I have known a lady from a non-goitrous district go to reside in Derbyshire for two years and to return with a well-marked goitre; she was treated by injection of perchloride of iron at great risk to her life and with permanently ugly scarring of the neck. All the above facts support the view that goitres can be acquired

fairly quickly by living in a goitre-producing district and as far as I can judge from analysis of the evidence collected, the distribution of goitres in Wales and Monmouthshire supports the view that the causation of this disease is to be found in drinking water. For example, I would instance parts of the counties of Cardigan, Carmarthen, and Pembrokeshire, which form a smooth undulating plateau with rounded hillocks and gently hollowed valleys. There is total absence of prominent rugged escarpments or precipitous hillsides or narrow valleys running in east and west or north and south or any other preponderating direction. I know of goitres developing in this district in people who have spent their whole life on the top of the hills, as well as in those who have always resided in the lowest part of the valley.

Diagnosis.—In the majority of cases there is no difficulty in recognising the character of a goitre in the neck, but in a case of symmetrical lipoma of the neck in a woman, aged 62 years, I did not suspect its character until operation for its removal was done. The lipoma had none of the ordinary attachments to the skin and moved up and down with deglutition. In intrathoracic goitres and in those which are partly within and partly without the thorax—"the diver" type—Professor Kocher has demonstrated the value of examination by the fluorescent screen in determining whether operation is practicable by observing the mobility of the lower border of the intrathoracic shadow of the goitre.

[Mr. Lynn Thomas here exhibited photographs of the different types of goitres. 1. Symmetrical enlargements of the lateral lobes of the thyroid gland (it weighed three and a half pounds after removal). 2. Enlargement of one lobe. 3. "The diver" type of goitre (Kocher). The isthmus and the left lobe were enlarged. Cyanosis, dyspnoea, and dysphagia existed and when the head was bent forward the goitre was well within the thorax. It was a difficult case and trying to the patient when the intrathoracic portion was delivered. The late Alderman Dr. Naunton Davies was present and said that the operation reminded him of the pre-anæsthetic days. 4. Malignant goitre with enlarged glands on the right side. 5. Goitre of isthmus photographed six days after operation.]

Treatment.—The number of operations that I have performed are as follows:—

No mor-	55, under local anæsthesia (cocaine, 1 per cent.), including 4
tality.	Graves's disease.
	1 without any anæsthesia.
	17 under general anæsthesia, including 5 Graves's disease.
	1 death from respiratory complications } Graves's.
	1 " " hyperthyroidism }
	1 " " sepsis (one of my early cases).

Another case of Graves's disease died suddenly and without any warning in the operation theatre before anything was done. I had had the patient under observation at the Cardiff Infirmary for some weeks; during that time I fully explained to her that the nature of the operation was only ligature of an artery, and apparently I enjoyed her full confidence. After she was carried into the operation-room she chatted with me quite pleasantly and I left her for a few minutes to get ready for the operation when she expired quite suddenly, without any warning, before I returned. Had I injected cocaine subcutaneously, or even manipulated her neck, I could find a plausible explanation for the cause of death.

The case in which I used no local anæsthesia was due to my hypodermic syringe breaking after Kocher's screen had been fixed round the patient's neck and the preliminary marking of the skin incision had been completed. As this accident meant abandoning the operation I decided to proceed at once by telling the patient that the chief pain she would suffer would be from insertion of the needle. She stood the operation very well and next day when I was removing the drainage-tube and skin sutures she told me that the worst pain she felt was during the injection of the cocaine, which in the circumstances meant incision of the skin.

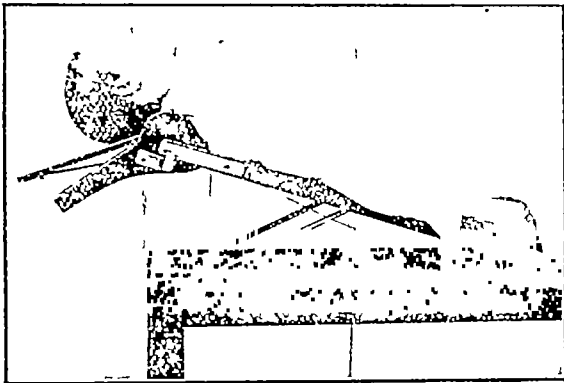
I always use Kocher's "collar incision" whenever possible as it gives ample room and exposes the blood-vessels at right angles to their course and leaves a scar which is scarcely perceptible. When Professor Kocher was the guest of the Cardiff Medical Society last year I took the opportunity of expressing my appreciation of his method and of pointing out that the description of the scar left by the "collar incision" had been described in Wales over 1000 years ago—in legend. We are told that St. Winifred had her head severed from her body, and that St. Beuno performed the operation

¹ A paper read before the Medical Society of London on April 2nd 1907.

of restoring it to its former position in such a skilful manner "that not even a scar was left, but only a thin white thread-line encircled her beautiful neck as evidence of the miracle of the seventh century."

During the last two years I have adopted Dr. Albert Kocher's¹ suggestion of placing the patient in the position shown in the illustration (Fig. 1). This position makes a

FIG. 1.



Kocher's position.

great difference in the amount of oozing and of engorgement of the veins and renders the operation much easier. In large goitres requiring long incisions I mark the skin at right angles to the "collar incision" in two or three places according to requirements, and these serve as landmarks for accurately re-uniting the divided platysma myoides subcutaneously. (Fig. 2.) About one hour before operation the

FIG. 2.



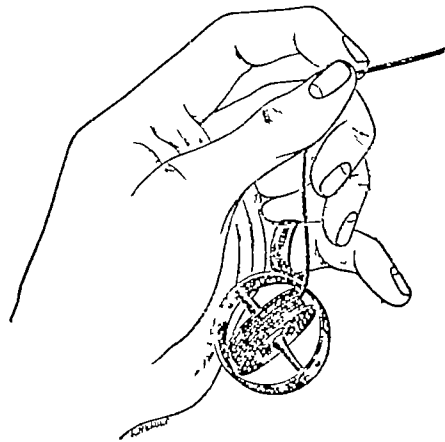
The collar incision. x shows the guide marks.

patient's neck is shaved in order to remove the downy hair and surface organisms and is then thoroughly cleansed with ether-soap and spirit, and a protective covering soaked in a 5 per cent. carbolic lotion is put on until the operation is commenced. The hair bordering on the neck is well brushed with carbolic lotion and the head is covered with a sterile rubber cap. The patient's knees are strapped to the table and the hands are placed at the side in suitable bags which are tied together under the back. Then Kocher's screen for neck operations is fixed so that the risk of contamination of the wound from accidental vomiting, &c., is obviated and the patient cannot see anything or anyone concerned with the operation. The patient is then covered with suitable sterile sheets and the surgeon and his assistant wear dry sterile thread gloves; then the neck is marked by

drawing the edge of the scalpel very lightly round it in the position which later forms the collar incision; by this manoeuvre no pain is inflicted but sufficient blood exudes to form a thin red line under which from one to two drachms of a 1 per cent solution of cocaine are injected by means of Kocher's syringe from end to end so as to form a continuous subcutaneous ridge. As soon as the injection of cocaine is completed the collar incision is made at once and the upper flap is first dissected upwards and consists of skin, subcutaneous tissue, platysma myoides, and the fascia covering the anterior surface of the neck muscles. Every blood-vessel exposed is first clamped by two Kocher forceps and divided between them so that the amount of blood lost is a mere trifle. The lower flap is then formed.

In certain cases it is necessary to divide the sterno-hyoid and sterno-thyroid muscles in order to facilitate the delivery of the goitre; in order to prevent atrophy of these muscles they must be divided near their upper or lower ends according to the exigencies arising, and by so doing the nerve supply to the muscles will not be interfered with. In order that the condition of the neck should be restored as nearly as possible to its normal appearance, and also that the resulting scar should approximate in its cosmetic effect that reputed to have been the case in that of St. Winifred, one must endeavour in the first place to restore to their normal conditions every divided muscle by carefully re-uniting the ends, and in the next place to sew the skin together by means of a very fine needle to avoid puncture scars, and lastly the drainage tube must be removed at the expiration of from 18 to 24 hours, together with the skin sutures. Special attention must also be given to accurate apposition of the edges of the aperture left by the removal of the drainage-tube, otherwise slight puckering will take place. When cases require a large number of ligatures, from 30 to 100, I use a little finger reel (carrying silk No. 00) which I devised for the purpose. Fig. 3 shows

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Cardiff

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¹ Dr. Albert Kocher is Professor Kocher's son.

SEVEN CASES OF GENERAL PERITONITIS
TREATED BY OPERATION, WITH
FIVE RECOVERIES.By B. MATTHEW BONE, M.B., C.M. EDIN.,
F.R.C.S. EDIN.

IN view of the extreme importance of arriving at some definite conclusions as to the best means to be adopted in the treatment of general peritonitis, I venture to publish my notes of seven cases within I have had the opportunity of treating since May, 1934. I notice that they to a certain extent support the views put forward by Mr. A. W. Mayo Robson in his *Practical Obstetrics* and published in THE LANCET of Dec. 23rd, 1935, that by the limited operative treatment a fair percentage of recoveries may be looked for. In my own series of cases the case rate is 23.5 per cent. and the recovery-rate 71.5 per cent.

CASE 1. Appendicitis, general peritonitis; operation; recovery.—At 10 P.M. on May 6th, 1934, I was called in consultation with Dr. A. S. Buchanan of Redcar to see a married woman, aged 52 years, who had been ill for four days. She looked extremely ill and was slightly propped. The abdomen was much distended and a dull could be felt across the lower part. Her illness commenced with pain in the right iliac fossa, which became general all over the abdomen. During the last 24 hours her condition had become steadily worse and the abdominal pain was easier. No induration or tumour could be felt. She also suffered great pain when vomiting. I opened the abdomen along the outer border of the right rectus muscle. Foul pus was at once evacuated from the peritoneal cavity. I found the appendix partially gangrenous and perforated, adhering to the bladder. There had been an abscess in the retro-peritoneal pouch which had burst and discharged its contents into the peritoneum. The pus, which was most offensive, was removed by means of aseptic gauze swabs, the various peritoneal pouches being dealt with one after the other. A large drainage-tube with gauze wick was inserted into the pelvis and gauze drains into the abdominal cavity and right loin. The patient made a good slow recovery and was out in a cain chair at the end of a month. The appendix contained a coagulation and had perforated.

CASE 2. Appendicitis, general peritonitis; operation; recovery.—The patient, a man, aged 43 years, was seen by me upon the third day of his illness. He looked extremely ill, with an anxious expression and sunken eyes. His abdomen was very distended. There was general tenderness to touch all over the abdomen; his pulse was 130 per minute. The patient's chance of recovery appeared to be small. I opened the abdomen and found the appendix balled in foul-smelling pus, there were no limiting adhesions or plastic lymph. The appendix was gangrenous at its distal end and perforated, but no coagulation was found at the operation. The foul pus was removed by aseptic gauze swabs, a large drainage-tube was inserted with a gauze wick, and a gauze drain was put in the right loin. Recovery was slow but steady. The wound healed, all but a very narrow fistula, which after six weeks two small appendiceal concretions were discharged, when it healed within a week.

CASE 3. Appendicitis, general peritonitis; operation; recovery.—The patient, a man, aged 58 years, was seen by me upon the third day of his illness. He complained of rigidity and pain all over the abdomen. The pain could be described, mainly in the right iliac region and had been very severe for some hours; he had not morphine given to relieve the pain. He had vomited green bile twice that day. He looked very ill, with an anxious expression and a pinched countenance. No induration or tumour could be felt. I opened the abdomen and at once found a quantity of foul-smelling pus in the peritoneal cavity. There were no limiting adhesions or plastic lymph. The appendix was free and unswollen, with a black-looking perforation near the base, there only just being room to amputate it close to the caecum. Having removed the appendix the pus was cleared away with dry aseptic gauze swabs and a large drain was inserted with a gauze wick and a gauze drain in the right loin. The patient made an excellent recovery and was up at the end of a month. Concretions of the pus-thrombus in the lumen.

CASE 4. Appendicitis, general peritonitis; operation; recovery.—

CASE 4.—I was called to see the patient, a man, aged 43 years, in consultation with Dr. Douglas Bone of Carlisle, upon the fourth day of his illness. He was extremely ill, with a pulse of 140 and an abdomen tensely distended. Vomiting had occurred at intervals and he had a dry, hard tongue. Operation was advised as holding out the only chance of recovery. His illness commenced with abdominal pain which was at no time particularly apparent in any one place. There was a hard thrill over the lower part of the abdomen. I performed abdominal section and at once evacuated a pint or so of offensive pus from the peritoneal cavity. There were no adhesions or plastic lymph. The appendix was found and was gangrenous, with a coagulation protruding through the tip. Fully another pint of pus was removed from the pelvis and the peritoneum was cleaned as far as possible with gauze swabs. A large drainage-tube was inserted into the pelvis with gauze wicks and other gauze drains were placed in the abdomen and loin. The patient was now so collapsed that I feared he would die upon the table. He was therefore replaced in bed without an enterotomy which I had intended to relieve the intestinal distension and paresis. He never rallied in spite of all that was tried and died on the following morning.

CASE 5. Ruptured pyosalpinx; general peritonitis; operation; recovery.—The patient, a married woman, aged 35 years, who had had two children and several miscarriages, complained of abdominal pain which commenced over the right iliac region. Vomiting occurred every few hours. The patient looked very ill. The abdomen was very distended and a hard thrill could be felt across the lower part. I opened the abdomen and found free pus which was not offensive in odour. The right tube contained a quantity of pus and had ruptured. There were no adhesions or lymph and the tube was not adherent. The tube and ovary on the right side were removed; the left tube was healthy, as was also the appendix. The pus was removed with dry gauze swabs and a large appagapic drainage-tube inserted with a gauze wick. Several other gauze drains were introduced in various directions. The patient made a rapid recovery and left her bed at the end of three weeks.

CASE 6. Appendicitis, general peritonitis; optic haematomas around the right kidney; operation; death.—The patient, aged three days, was seen in consultation with Dr. W. Scott on the third day. The following history was given. The infant had screamed the day previous to my visit in what the mother called an "unnatural" way. It had also been "screaming" just previously to my visit. On examination the abdomen was moderately distended and rigid, with the legs drawn up and spasm of rectum. Peristalsis a tumour could be felt high up on the right side. I opened the abdomen and at once evacuated a quantity of turbid fluid. There were no adhesions or plastic lymph. I discovered the inflamed appendix adherent by one-half of its length to the caecum. The appendix was removed and a "cigarette" gauze drain was inserted, with a gauze drain in the right loin. The infant died the following day.

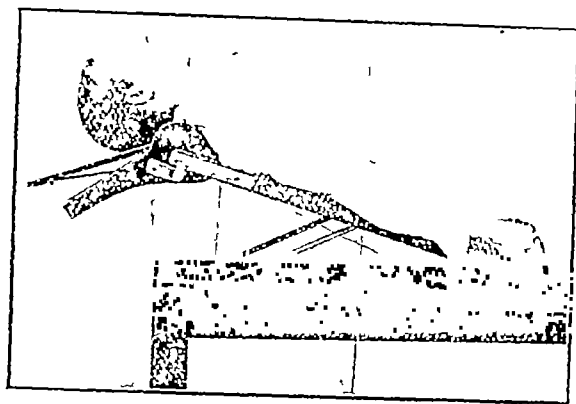
CASE 7. Appendicitis, premature labour, general peritonitis; recovery.—The patient, a primipara, aged 24 years, was taken suddenly ill with pain confined to the right side of the abdomen; she was then seven months pregnant. Hot fomentations were applied without relief and the next day labour set in and at midnight she was delivered of a child. When I saw her on the third day of her illness, having been confined the night previous, she was desperate ill. Her pulse was 150 and her temperature was 105.5° F. She was delirious, with a loss of extreme anxiety or even fear upon her countenance. There was distension of the abdomen and the uterus could not be felt. She was also sweating freely from the forehead. A hard thrill was most to be felt. I opened the abdomen in the middle line and found free foul-smelling pus in the peritoneal cavity. This was removed by means of dry aseptic swabs and then the appendix was found free and perforated near its base and extensively distended. The appendix was removed and the pus was carefully taken up on gauze swabs. A large appagapic drainage tube was inserted with gauze wick and gauze drains were placed in various directions amongst the coils of intestine. The patient made a slow but good recovery.

The chief points in the treatment and after treatment of the series of cases were these: (1) removal of the cause; (2) removal of the pus as far as possible by means of dry aseptic gauze swabs; (3) free drainage with tube and gauze wicks and plain streams of gauze; (4) care to be as gentle as

of restoring it to its former position in such a skilful manner "that not even a scar was left, but only a thin white thread-line encircled her beautiful neck as evidence of the miracle of the seventh century."

During the last two years I have adopted Dr. Albert Kocher's¹ suggestion of placing the patient in the position shown in the illustration (Fig. 1). This position makes a

FIG. 1.



Kocher's position.

great difference in the amount of oozing and of engorgement of the veins and renders the operation much easier. In large goitres requiring long incisions I mark the skin at right angles to the "collar incision" in two or three places according to requirements, and these serve as landmarks for accurately re-uniting the divided platysma myoides subcutaneously. (Fig. 2.) About one hour before operation the

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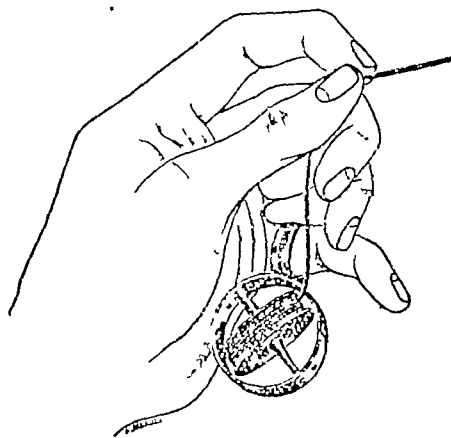
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patient's neck is shaved in order to remove the downy hair and surface organisms and is then thoroughly cleansed with ether-soap and spirit, and a protective covering soaked in a 5 per cent carbolic lotion is put on until the operation is commenced. The hair bordering on the neck is well brushed with carbolic lotion and the head is covered with a sterile rubber cap. The patient's knees are strapped to the table and the hands are placed at the side in suitable bags which are tied together under the back. Then Kocher's screen for neck operations is fixed so that the risk of contamination of the wound from accidental vomiting, &c., is obviated and the patient cannot see anything or anyone concerned with the operation. The patient is then covered with suitable sterile sheets and the surgeon and his assistant wear dry sterile thread gloves; then the neck is marked by

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be heard at a distance of one inch only; at the present time it can be heard at five inches. This is a most useful ear; it is her only available one, and fortunately it is now safer than if the ear had never been diseased, for the mastoid antrum (the danger zone) has been removed; also all discharge has ceased and the perforation in Shrapnell's membrane has healed.

CASE 2. "Attic" disease.—The patient was first seen in July, 1906, with a history of discharge from the left ear lasting two months, following one week of pain. There were giddiness and slight headache. The watch was not heard on contact. Air could not be blown through the perforation by Valsalva's method, though the Eustachian tube was free. There was a polypus about half an inch long in the meatus and after its removal it was possible to see that the perforation was in Shrapnell's membrane. Spirit drops were ordered to be instilled several times a day.

On a subsequent visit a small recurrent polypus was removed and it was found that the otorrhea had increased. In these circumstances operation was recommended and the conservative one was performed on Oct. 25th. Cheesy pus and a few granulations were found in the antrum and pus in some mastoid cells communicating with the antrum. On opening the cartilaginous meatus as usual towards the conclusion of the operation the membrane was fully exposed and then were removed some granulations from within the attic; a probe was passed through the perforation and the attic into the aditus, air was then blown through. On looking into the posterior attic granulations could be seen.

The experiences gained by the operation on Case 1 did not encourage the attempt to force the tympanic obstruction. Four days after the operation this patient also could blow air through the perforation, which indicated that the tympanic barrier had disappeared. Before the operation the watch could not be heard when in contact with the ear; at the present time it is heard 11 inches away. His recovery was uneventful; the perforation healed and all discharge ceased.

CASE 3. "Attic" disease.—The patient was admitted to the hospital on Nov. 2nd, 1906, with a history of four months' discharge from the left ear, tinnitus, and pain over the mastoid. The watch was heard only when in contact with the ear. There was a greyish granulation of about the size of a pea apparently growing through the roof of the meatus but in reality through the upper part of Shrapnell's membrane. Air could not be blown through the perforation from the nose, although the Eustachian tube was clear.

The conservative operation was performed on Nov. 16th. The aditus contained thick pus, and on probing from behind through the attic to the perforation after removal of granulations some white material was thrust out through the perforation, which on examination proved to be a flake of glistening epithelium of about the size of the section of a lead pencil. The probing was continued and two or three similar flakes were removed in the same way. Then air was blown through and all desquamated epithelium was cleared away. This patient progressed satisfactorily and in a few days could blow air through the perforation by Valsalva's method, but developing an infectious disease she was removed. This was a most interesting case and her departure was disappointing.

CASE 4. Facial paralysis.—The patient was admitted to the hospital on Nov. 12th, 1906, with a history of nine days' facial paralysis and a discharge from the right ear of 27 years' duration. The paralysis was as marked as in any case in my experience, and the patient's appearance distressed her greatly. The large exposure of the eye demanded the use of pad and bandage to keep the lid down and thus protect the cornea.

The conservative operation was performed on Nov. 15th. The mastoid antrum contained granulations and pus. Air and lotion were passed through the tympanum from the aditus and forced out through the perforation. There were no apparent granulations, even after 27 years' suppuration. This patient went home on Dec. 2nd. The facial paralysis had disappeared, the discharge had ceased, and she could shut the eye of the affected side as strongly as the other. Before the operation she heard the watch at two and a half inches; she now hears it at six inches, and with her best ear she can hear it at ten inches.

CASE 5. An old ossiculotomy case.—The patient was admitted to the hospital on Nov. 5th for operation on the left ear, after two years' treatment as an out-patient. There had been otorrhea for 14 years but never any pain. There was a cicatricial band on the inner wall of the tympanum and below it a carious patch. The whole tympanum was wet with fetid pus. She could hear the watch at a distance of two inches in that ear and in the other at 14 inches. An operation had been performed at another hospital, probably ossiculotomy and curetting.

The conservative operation was performed on this patient also. The antrum was large and full of granulations wet with pus. The aditus

contained granulations. The removal of the pyogenic membrane lining the antrum and aditus and therefore the cessation of supply of pus to the tympanum permitted the latter, although it was in no way treated, to make a satisfactory and rapid recovery. Of course, not a perfect recovery, as the drum membrane and ossicles had been taken away by the operation of ossiculotomy 12 years before. The caries rapidly healed and all discharge ceased. The patient was in the hospital three weeks and on leaving could hear the watch at four and a half inches, twice as far as before the operation.

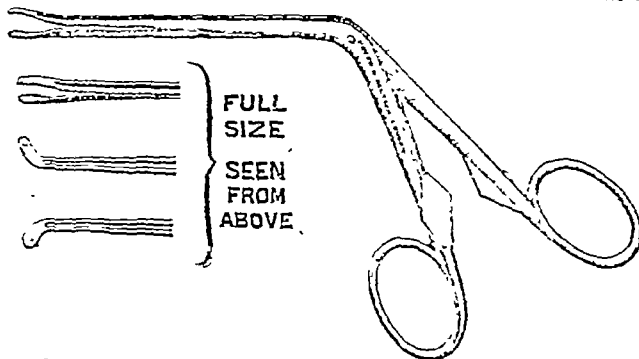
The foregoing notes on these five cases provide matters demanding serious consideration. To take the so-called "attic" cases first, it may be observed that all had disease of the mastoid antrum although the aural discharge was not of long duration nor were there any mastoid symptoms. All had such swelling of the tympanic mucous membrane as to prevent the passage of air and discharge from the antrum or perforation to the Eustachian tube or *vice versa*. In all that firm obstruction spontaneously disappeared within a week of the operation—that is, as soon as the irritation of the tympanum, arising from the presence of pus from the antrum, had been eliminated by the operative proceedings—and none had "attic" disease, so understood, unless the accidental ingrowth of epithelium in one of them could be so called. This ingrowth of epithelium in time might have spread and its products have accumulated anywhere within the tympanum, but more especially in the posterior "attic" portion, for the rest of the tympano-attic cavity was obstructed by the barrier of swollen mucous membrane referred to above or by granulations, therefore the accumulation taking place in the direction of least resistance would naturally occur in the "attic."

How these facts concerning "attic" disease contrast with what has so long been taught about it! And this information is the result of close observation of the living and could not possibly have been demonstrated post mortem; each of these persons suffered from disease of the mastoid antrum affecting secondarily both the attic and tympanum, and in one patient the conditions leading to cholesteatoma were present. The locality in which the perforation occurred appeared to depend on the amount of swelling in the tympanum, which by protecting the rest of the membrane insured that perforation should take place in Shrapnell's membrane; it was the only part exposed.

In the two cases which remained under observation the discharge ceased, the perforations healed, and the hearing greatly improved; also the vertigo and pain disappeared, implying a termination of the disease, due, not to treatment of the tympanum but to the elimination of the mastoid antrum and its putrid discharge which had been irritating the tympanum. Although the giddiness was due to tympanic conditions, treatment of the tympanum, except destructive operation, would not have removed it. The main disease was not in the tympanum or attic at all but in the mastoid antrum—it was mastoid disease, and thus it should be named. The patient in Case 1, in whom air was blown through an artificial opening, showed that the obstruction to the passage of air through the tympanum was unyielding and that therefore the apposition of the swollen mucous membrane of the inner tympanic wall to the drum membrane must have been an accurate moulding in order to prevent the passage of air under such a great pressure as was used in the attempt to force a passage.

Cases 1 and 2 both complained of giddiness, which can be accounted for by the external pressure exercised upon the incus, by means of the swelling of the mucous membrane of the tympanic inner wall, which, pushing out the lower part of that bone until further progress was resisted by its anchorage to the stapes, pulled upon the stirrup and by dragging on the ligaments tended to diminish the pressure in the labyrinth. This was enough not only to account for the vertigo but might even account for the pain. Tympanic obstruction of a less degree is a very common condition in chronic suppuration and swelling of this kind combined with the amount of blood-supply form the chief factors in deciding where a perforation of the drum membrane shall take place.

The patient in Case 2, with giddiness, pain, and nerve deafness, might have been suspected of having labyrinthine implication, but the symptoms were probably the result of alteration of labyrinthine tension due to tympanic swelling as explained above. The labyrinth is far more rarely involved in this



Forceps for removing granulations, &c., from the tympanum or attic. The full-sized ends show the three patterns which are in use—the straight forceps above, those bent to the right in the centre, and those bent to the left below.

possible in all manipulations; and (5) counteracting shock by all means possible. Strychnine and brandy were administered before and after the operation. Gastric lavage was employed before and after operation in cases where vomiting was present. Large quantities of saline solution were administered after operation per rectum every four hours, sometimes with brandy added. Nothing was allowed by the mouth for the first 24 hours after operation except a teaspoonful of albumin water every half hour, and not this if any sickness was present. One-sixth of a grain of calomel was administered at once after operation and one-sixth of a grain every fourth hour until one and a half grains had been given. Turpentine enemata were used with the rectal tube passed high up to relieve flatus and distension. And, lastly, but by no means to my mind the least important, the patients were placed in the Fowler position by means of a bolster beneath the knees and a back-rest, the bolster being retained in position by two bandages tied to the bed head on either side.

I think there are other points of great importance in influencing the result of operative treatment. Firstly, rapidity combined with gentleness in manipulation and thoroughness of operation. Secondly, the administration of the anæsthetic. If the patient has a terror of the operation or is excessively nervous the initial administration of ethyl chloride, I believe, is extremely useful, as it renders the patient anæsthetic in about 30 seconds and allows the exhibition of ether or chloroform to follow it at once without difficulty. It also shortens the duration of the operation in that often the surgeon, if he sees that he has everything prepared, may make the incision under the ethyl-chloride anæsthesia and may have time to open the peritoneum before its effects have completely passed off. This allows of the operation being carried through with the minimum of ether or chloroform, it being only needful to push it a little towards the end if sutures are to be introduced or another incision made for drainage. I consider the limitation of the anæsthetic to the minimum necessary as of extreme importance in these cases. It is also of great importance to keep the patient warm during operation, and to this end a hot-water tank on the operating table is very valuable, and also I employ a jacket for the patient's body with sleeves out of which there is no opening, a small slit being provided at the wrist to enable the pulse to be felt. I also have leggings with socks all in one which pull up to the top of the thigh. These are made of thick woollen blanket and, I find, keep the patient warm. As little of the surface of the body should be exposed as possible.

Lancaster.

THE TREATMENT OF CHRONIC SUPPURATION OF THE MIDDLE EAR WITHOUT THE REMOVAL OF THE DRUM MEMBRANE AND OSSICLES.

By CHARLES J. HEATH, F.R.C.S. ENG.,

SURGEON TO THE THROAT HOSPITAL, GOLDEN-SQUARE, LONDON.

THERE should no longer be any doubt of the fact that chronic suppuration of the middle ear, if promptly treated, is usually curable, with restoration of hearing and with healing of the perforated drum membrane. It appears also that practically every man or woman who suffers from chronic suppuration of the middle ear has disease of the mastoid antrum, and although occasionally the discharge may cease with or without treatment on account of a favourable anatomical formation of the antrum and aditus, this fact does not invalidate the contention that while there is chronic suppuration there is disease of the mastoid antrum. These statements are founded on the experiences of over 500 mastoid operations performed during the various stages of this disease, and in all those patients not in one instance was the mastoid antrum in a condition of health.

Since the publication of a previous paper on this subject many surgeons have seen my patients and operations at the Throat Hospital and have adopted the procedure advocated in a large number of cases with great success. The operation affords no great difficulties, nor is it accompanied by much danger, for after years of gradual diminution mortality

has now disappeared among those patients submitted to operation before dangerous symptoms have developed.

The patients referred to in my previous paper were admitted to the Golden-square Hospital because they were serious cases of chronic suppuration in the middle ear; they all had perforation in some part of the tense portion of the drum membrane and the aural disease varied in duration from three months to 18 years. Some had polypus in the meatus, others granulations in the tympanum, one had a discharging sinus behind the ear, all had deafness and fetid discharge, and some in whom the disease had become acute were in great danger from extensive exposure of the dura mater of the middle brain and the lateral sinus in the acute mastoid abscess. Yet such severe cases as these were shown to be capable of complete recovery, with cessation of discharge, healing of the perforation, and perfect restoration of hearing. These ten patients were exhibited at a meeting of the British Laryngological and Otological Association¹ and the result of the discussion was greatly in favour of the new operation. One or two who took part in the discussion expressed their doubts as to the new method being adequate to deal with "attic" disease (so-called). In my reply, the belief was expressed that by operating in time it would be possible to prevent the "attic" from being involved and that recently, when operating fairly early on three patients with "attic" disease, serious disease of the mastoid antrum had been found in all of them, and probably the "attic" disease would be recovered from when the diseased cavity of the antrum was eradicated. These expectations regarding the possible cure of "attic" disease were so far fulfilled that at the next meeting of the association, a month later, two of those three "attic" patients were exhibited completely recovered from the disease, with the discharge ceased, with the perforation in the membrane healed, and with much hearing restored. The third patient had been removed from the hospital before recovery because she developed an infectious disease which demanded her removal to another institution.

Not only are the ordinary forms of chronic suppuration of the middle ear amenable to the new treatment, but it is equally effective in the attic form also. In October and November last some of the rarer and more complicated forms of suppuration came under observation and operation, such as "attic" disease (so-called) with perforation of Shrapnell's membrane and chronic suppuration associated with facial paralysis. Particulars of these cases are recorded below and, in addition, details of a most interesting and instructive case in which the operation of ossiculectomy had been performed 12 years previously for the purpose of attempting to cure chronic suppuration in the ear.

The following five cases were exhibited at the meeting of the British Laryngological and Otological Association on Dec. 7th, 1906:—

CASE 1. *Attic disease (so-called).*—The patient, aged 24 years, was admitted to the Throat Hospital on Sept. 21st, 1906, complaining of pain in the right ear, also of a feeling of giddiness even when lying down. There had been discharge for six months from this ear. In down. There was a perforation of Shrapnell's membrane. She could hear the watch at a distance of one inch. The Eustachian tube was free but not communicating with the perforation, there being some obstruction to the passage of air through the tympanum, and in order to attempt to save the hearing of this, her only useful ear, operation was decided upon and was performed on Oct. 11th. The conservative operation was adopted, as described in THE LANCET of August 11th, 1906, p. 353.

There was pus in the antrum and that cavity was draining through a perforation in Shrapnell's membrane. The probe was passed completely through the posterior part of the "attic" from the perforation in the membrane to the aditus; air was then blown through. Next, having obstructed the perforation with a wet woollen mop, an attempt was made to force air forwards through the tympanic cavity, from the aditus to the anterior part of the tympanum near the Eustachian tube, and to distend the tympanum, but without success, it escaped through the perforation in spite of the occlusion of that opening by through the wet woollen mop firmly held. Next, by incision, an artificial opening was made in the anterior inferior quadrant of the drum membrane, and a cannula, which had been prepared for the purpose, was passed through the opening, and an attempt was made to force air backwards through the tympanum from the neighbourhood of the Eustachian tube to the aditus, but this, too, was unsuccessful; of the obstruction in the tympanic cavity was unyielding. No further attempts at forcing a passage were made.

In this patient a small part of the bridge above the perforation was removed, this has been done in three other cases in order to examine the attic. On the sixth day after the operation the patient could blow air through the perforation by Valsalva's method, indicating that the obstinate tympanic obstruction had been spontaneously removed; also it was observed that the artificial opening which had been made also in the membrane was healed. Before the operation the watch could

Cases which are devoid of apparent granulations are slower in recovering after operation, and by being less protected are more liable to the penetration of disease into the tympanic walls leading to caries, a far more serious condition, as in the facial paralysis case. Many other pathological matters noticed in this investigation are in entire conflict with the teaching hitherto accepted, and if the old pathology were right the gratifying results of this new treatment at the hands of many surgeons would be impossible; it is however founded, and fortunately so, upon a new aspect of pathology of this disease.

Some surgeons have lately informed me that they are operating by this new method on patients whom they have had under observation for years, but dared not operate by the radical operation as it might destroy the hearing of the only useful ear (such conditions prevailed in Case 1). This operation might be called the conservative operation, because it is designed to save what is essential to perfect hearing; but the name is a small matter as the evolution of the operation was a certainty once the true pathology was known. What, however, was most important was the recognition of the fact that the pathology hitherto taught was not to be relied on, and the duty of acquiring a more accurate knowledge of the nature of this serious disease has demanded years of the closest clinical study, for as long as the old pathology dominated the surgery of this disease no advance was possible; as long as the tympanum was considered the root of the disease so long would the disastrous results of the radical operation and ossiculectomy be perpetuated.

Many questions as to the scope of this operation have reached me from surgeons in this country and abroad; it is not a simple opening up of the antrum and a clearing of that cavity and the aditus followed by drainage, as in Schwartz's operation, which caused so many disappointments and led to the institution of the radical operation, which, on the other hand, went much too far. In the new operation not only the posterior superior part of the meatus is removed, as in some other operations, but the antrum and aditus are practically eliminated, as well as all disease associated with those cavities. The whole posterior wall of the bony meatus and even its arched floor must also be removed, and this latter proceeding is followed in no other operation, but it must be done if that full access to the tympanum which is necessary both during and after the operation is to be assured. This is essential not only for the safe and thorough removal of granulations, polypi, &c., at the operation, but especially for the dressings during the after-treatment, for without the removal of the floor it is impossible to see the whole of the membrane; moreover, a pocket would be left between the arched floor and the membrane where discharge might accumulate.

Already over 100 of these operations have been performed in the country for chronic suppuration, and it is also being practised in America. Between 20 and 30 have taken place at my hands; two surgeons of my acquaintance have, together, and in a shorter period, performed a similar number, and one of them, a resident in a northern city, is so satisfied with his results that some months ago he had adopted this method in 12 out of 15 mastoid operations and has exhibited some of his patients at the local branch of the British Medical Association.

It is not claimed that under all diseased conditions of the tympanum this elimination of the antrum and aditus is to be expected to restore the ear to health, for the drum membrane may be extensively destroyed or completely gone; the ossicles, too, may have necrosed and disappeared, as sometimes happens in scarlet fever and other acute diseases, but this does not occur in chronic disease. For such cases the radical operation will still be required, yet they form a small proportion and will rapidly diminish, as the treatment of this disease is more promptly undertaken on the lines recommended herein. The surgeon's aim should be the restoration of a perfect ear. The aim, however, of the radical operation and the hope of ossiculectomy is to get the discharge stopped with a certainty of a defective ear.

It is as much the duty of the aural surgeon to operate in time to save the hearing as it is that of the ophthalmic surgeon to operate in time in chronic glaucoma to save the sight.

RECENT DEVELOPMENTS IN THE THERAPEUTICAL APPLICATIONS OF ARSENIC.

By J. SNOWMAN, M.D. BRUX., M.R.O.P. LOND.

MODERN advances in the progress of pharmaceutical science are not confined to the invention of highly complex and synthetic organic preparations. Research must necessarily be prosecuted along this line because it has already produced remedies of permanent value to our daily pharmacopœia. But though investigation may mainly proceed in this direction, it will be occasionally worth while to devote some attention to our old-fashioned and time-honoured drugs. This attention will often be rewarded by the discovery that neither all their therapeutical nor their pharmaceutical applications have been exhausted. Some of the recent studies in arsenic exemplify this contention in a striking degree and a review of the present position of this drug in the treatment of disease may therefore be both opportune and profitable.

Arsenic must always command the interest of the clinician because its toxicology is so reminiscent of pathological processes. It is often instructive to study the action of drugs from the point of view of their influence either on structure or on function. The pharmacology of opium, strychnine, and digitalis, for instance, mainly concerns function; while potassium iodide, phosphorus, and arsenic may be regarded as drugs the value of which chiefly depends upon the circumstance that they produce structural alterations in the tissues. If the alteration tends to restore a pathological condition of a tissue to its normal state the drug will be credited with a specific curative action. Our control of pharmacological action is, however, too imperfect to enable us to arrange our employment of remedies in such a manner as to guarantee that structures of morbid anatomy will revert into those of health. The group of drugs formerly known as alteratives possess the property of modifying the nutritive processes in the body. It is obvious that this effect involves definite chemical changes in cell constitution, and advanced changes of this character inevitably modify structure. The great value of alteratives in therapeutics is that they often change pathological processes brought about by disease into physiological processes. Their failure frequently arises from the circumstance that they introduce into the body their own toxic pathological processes. This is exceedingly well exemplified by arsenic, which is able to produce a mimicry of several diseases, much to the discomfiture of diagnosticians. In the nervous system we may have peripheral neuritis with rapid muscular atrophy, or definite myelitis. The intestinal canal may present appearances closely resembling cholera, with granular changes proceeding to fatty degeneration in the epithelial lining, the interstitial tissue and Peyer's patches being invaded by large round granulated cells. The liver may be affected in such a manner as to suggest a diagnosis of acute yellow atrophy. The skin may be the site of lesions the number of which is almost legion. Every anatomical manifestation known to dermatology from a slight erythema to a bulla is represented. The most characteristic appearances, however, are pigmentation, herpes zoster, and hyperkeratosis of the palms and soles. Hutchinson maintains that these thickenings may develop into true epitheliomatous growths.

The sphere of action of arsenic is obviously very extensive when it is allowed to act on the general healthy organism. Its danger lies in its tendency to cause fatty infiltration and degeneration, and its therapeutical applications are accordingly very much hampered, though practical medicine still indicates a considerable field for its employment. Happily, recent investigations are indicating how the drug may be used so as to obtain its therapeutical effects with a considerably diminished risk of incurring its toxic consequences. It is probable that the organism itself provides a defence against arsenical poisoning, in a manner similar to the production of an antitoxin in the case of certain bacterial poisons. It is found that subcutaneous injection of arsenious acid into rabbits in large but not fatal doses is followed by a prolonged leucocytæmia. This increase in polymorphonuclear leucocytes, it should be added, is preceded by a temporary decrease in their number. The point, however, is that after the increase has occurred each leucocyte contains arsenic. If a fatal dose is injected no

country than abroad, if statistics are to be considered reliable.

The hearing of these two patients considerably improved after their recovery, but it does not compare favourably with the cases already recorded in *THE LANCET* and with many other cases treated since, and the reason is not far to seek, for the tension in, and therefore the sensibility of, the labyrinth was altered by the long-continued stretching of the stapedial ligaments; also, the ossicular chain of bones, and their intervening joints, and the vibrating tympanic membrane itself had all suffered by the long-continued stretching and pressure to which they were subjected by the outward swelling of the mucous membrane of the tympanic inner wall. Even better results regarding the hearing might therefore have been expected had they been operated upon even earlier, before the tympanic swelling had damaged the labyrinth and the ossicular chain and attachments. (The hearing of these two patients is slowly and steadily improving.) Again, the whole week of pain suffered by Case 2 before the perforation occurred suggests the gradual accumulation of the drainage from the antrum which appears to secrete but little, and contrasts therefore with the abundant discharge observed when the tympanum is much affected.

Case 3 exhibited conditions indicating the commencement of cholesteatoma, and in this patient it appears to have been due to the implanting of the squamous epithelium of the outer surface of the drum membrane upon the granulation which happened to be in close contact with it. The squamous epithelium was probably first implanted upon the protruding granulation, which being large and coming like a button through a buttonhole might have been tightly nipped round its neck by the edge of the perforation and possibly excoriated there, and once the epithelium from the outer edge of the drum membrane became implanted it might grow and travel over the surface of the granulation, along its stem, and thus inwards through the perforation, until it reached the general mucous membrane of the tympanic attic of which the granulation was a part, and there the effete epithelium becoming thrown off would naturally accumulate and lead to cholesteatoma; also the squamous epithelium might continue to extend over the mucous surface of the cavity. The grey-white appearance of the granulation itself might indeed have indicated a covering of squamous epithelium, but it was unfortunately not microscopically examined.

Observations such as these may assist in settling the disputed origin of cholesteatoma and should it ultimately be generally concluded that this is the way in which it usually originates valuable hints are obtained as to what surgical or other treatment is desirable in order to prevent such a calamity.

From experiences of these cases there appears much difficulty in recognising any disease as peculiar to the attic as well as any peculiar to the tympanum. That such a division seems arbitrary, as the tympanum, and its upper part the attic, together form one tiny cavity; it is an attempt at a distinction without a difference, for granulations or caries may be present in either locality or in both, as in the cases recorded above, the disease merely being modified by the anatomy of the part. Further, that whether the pathological changes are apparently more in the tympanum or more in the attic, the conditions are secondary to disease of the mastoid antrum. Again, the discharge from the antrum which causes the attic or tympanic disease has to pass through the attic in every case to reach the perforation wherever it may happen to be, whether in the tympanic or attic portion of the drum membrane, and to call this disease by the name "tympanic" or "attic" because of the situation of the perforation, high or low, seems devoid of all reason. Moreover, practically all these cases are curable by the same operation if dealt with at the proper time. The following conclusion was therefore ultimately reached—namely, that however diverse the conditions in the ears of different persons may appear to be in the late stages of suppuration, they all appear to fall into one category in the early stages—that is, disease in the mastoid antrum—for it can now be demonstrated that the same principle governs them all, and therefore the same treatment may be expected to be effective in all if carried out at the proper time.

The above cases emphasise the importance of an early operation when the disease settles down into a condition of chronic suppuration. The majority of cases of acute

suppuration, however, recover completely; they do not become chronic.

The use of the Politzer bag is especially indicated after operations upon these attic cases, for the ossicles and joints have been pressed upon by swelling, and their loosening and shaking up and the breaking of their adhesions are as necessary here as in any other part of the body after somewhat similar conditions of strain and subsequently an enforced rest.

In Case 4 (with a history of suppuration for 27 years and of facial paralysis for nine days at the date of admission) there can be no reasonable doubt that the cause of the paralysis was the onset of caries, as anything short of that would probably not have affected the bony aqueduct and the nerve after such a long period of disease. This case demonstrated that such a serious disease as caries of the tympanum can be recovered from even without the removal of the drum membrane, as is done in the radical operation, if the cavity is freed from the irritating effects of putrid discharge from the mastoid antrum by a less destructive method, and as there was no apparent protective swelling of the tympanic mucous membrane in this patient there was greater liability to caries of the walls of the cavity as the result of the irritation from the discharge from the antrum.

In Case 5 an operation was performed 12 years ago on the patient through the meatus, probably ossiculectomy, with the hope of curing chronic suppurative catarrh. This case illustrates the fact that ossiculectomy was not to be relied upon to stop otorrhoea, but was in fact futile, for it did not reach the dangerous disease in the mastoid antrum, and thus make the life of the patient safe, in spite of the sacrifice of all possibility of restoring the hearing, and even if ossiculectomy would cure the mastoid disease the fact of its destroying the hearing should prevent its adoption. This case shows also that even without the presence of the drum membrane caries can be produced on the inner wall of the tympanum and perpetuated there by discharges draining down from the mastoid antrum, and that it can be recovered from when that discharge is arrested. There can be no doubt as to the presence of caries in this case, for bare bone could be felt by the probe and its situation proved by observation prior to the operation, but more fully demonstrated when the meatus had been enlarged, as is the rule in this method of operation.

To take the facial paralysis and ossiculectomy cases together. In each there was caries in the tympanum; in the first it appeared after 27 years of suppuration and in the second it was observed after disease of 14 years' duration. In both it disappeared when the discharge was arrested by operation on the mastoid antrum, the fountain-head of the suppuration which caused the caries, and not by operating on the seat of the caries in the tympanum. These facts, it will be observed, are in direct opposition to the teaching hitherto in vogue.

Caries is rare; so are the results of that disease such as facial paralysis and labyrinthine suppuration, yet suppuration is extremely common, and if caries was the cause of it, it should always be present. It does not need the presence of caries to cause perpetuation of suppuration, while the mastoid antrum is the factory of fetid pus, for which the tympanum has to act as the drain and is thereby constantly irritated and perpetually discharging. Caries is not, as has been hitherto taught, the cause of the persistence of suppuration, but according to the investigations noted above it is the effect of that persistence.

Further, and a most important point common to these five cases, serious diseases of the mastoid antrum were found in all of them, even in those of but short duration—a matter that could only be demonstrated by an early operation such as was done in some of them; and this fact again emphasises the contention that practically all cases which do not recover after acute catarrh and relapse into a chronic suppuration have disease in the mastoid antrum. As remarked before, for practical purposes there is no exception to this rule, and the fact that some cases do recover on account of exceptionally favourable conditions of the aditus and antrum (not to be relied upon nor to be diagnosed) does not invalidate the contention that while there is chronic suppuration going on there is disease in the mastoid antrum. The results of these and other operations appear to show that those ears are the healthiest and most vigorous in which the tympanic swelling and granulations are most abundant.

alopecia, which showed no improvement, dermatitis herpetiformis, xanthoma, psoriasis, and lichen. The average duration for the cure of 20 cases of psoriasis was 29 days and for ten cases of lichen 25 days.⁶ Both these series were treated with external applications in addition. But cases of lichen treated exclusively with atoxyl all gave excellent results. The worst case required 42 injections. It was found that after a few injections the itching of the skin subsided, the papules became flatter and paler, the scalliness diminished, and finally nothing remained but a little faint pigmentation. In regard to psoriasis, the reports indicate that atoxyl must be supplemented by local remedies. After about six injections the infiltration becomes less and the scales decrease, but apparently a thorough cure cannot be relied upon. Guszman of Budapest,⁷ however, has achieved such remarkable success by the energetic use of atoxyl in psoriasis without any other treatment that he looks upon it as a specific. He points out the great advantage of this method of treatment when the use of baths and inunctions would be difficult. He agrees, however, that the employment of local measures distinctly expedites the cure. Atoxyl tends to increase the circulation in the cutaneous capillaries, and assists, therefore, in the absorption of pathological pigmentations such as chloasma. A case of xanthoma treated in Lassar's clinic⁸ exhibited flattening of the plaques after the fourth injection. The colour became less intense, and after 22 injections a perfect recovery ensued. Again, a young girl whose face was covered with yellow warts received nine injections of atoxyl on alternate days, and this sufficed to cause their absolute disappearance. A series of 18 injections resulted in the absorption of numerous subcutaneous endotheliomatous tumours in the case of a man aged 68 years.⁹ Naturally atoxyl has been applied to other general morbid conditions wherein arsenic finds a field for employment. The improvement in nutrition which follows the use of the cacodylates in pulmonary tuberculosis obtains also in the case of atoxyl. Cases of anæmia and chlorosis which appeared to resist iron treatment¹⁰ did well and finally became quite cured under a course of atoxyl. It should be noted that in these cases the first indications of improvement concerned the nervous symptoms of the disease, such as the headache, giddiness, and palpitation. Mendel has used the drug in neurasthenia, hysteria, facial paralysis, sciatica, and spasmodic asthma, and he regards it as a perfect substitute for arsenic. It is eminently applicable in chorea and is one of the most successful remedies for Graves's diseases. In three cases of this condition the symptoms practically subsided in from six to eight weeks. Atoxyl also finds an excellent application in the neurotic disturbances associated with the climacteric.

The very latest investigations into the action of this drug are concerned with the therapeutics of trypanosomiasis. It has been demonstrated by Laveran and Mesnil that arsenic kills the trypanosomes circulating in the blood. It can, however, only be relied upon to cure the disease in an animal which otherwise possesses great resisting power, because this lethal action of arsenic on the parasites ceases with the excretion of the drug or on its combination with the fixed tissue elements. It follows, therefore, that the trypanosomes which have not been destroyed continue to exist and multiply and circulate in the blood stream, as the examination of a film will prove. Atoxyl possesses the same action as arsenic, but can be pushed to a much greater extent than the latter. The following scheme indicates the specific action of atoxyl on the parasites when administered to an animal suffering from trypanosomiasis.¹¹

First 4 hours ...	No change.
4 to 5 hours ...	Trypanosomes swell; movements diminish.
7 hours ...	Movements slow; protoplasm in irregularly disposed granules, with ground-glass appearance and vacuolated. Shape of parasites deformed, but their number not greatly decreased.
3 hours ...	Sudden diminution in number, from 40 in a field to 3.
15 hours ...	Absolute disappearance; centrifugalised blood shows no parasites. A great increase of leucocytes.

There is a disease in horses, known as dourine, confined to

Algiers and North America, due to the trypanosoma equiperdum, as discovered by Rouget in 1894. The symptoms consist of inflammation of the genitals, oedema of the abdomen, eruptions, and inflamed glands. Wasting, anæmia, and paralysis follow. It has been clearly proved by experiments that the introduction of atoxyl into the blood absolutely prevents the development of the disease in susceptible animals as a result of inoculation.¹²

The reports of Robert Koch and others on the treatment of sleeping sickness by atoxyl are distinctly encouraging. In a recent report he records a trial of this drug in 986 cases of the mild and severe varieties. In the former class he included those patients who complained of impaired movement of the legs with pains therein and had swollen glands which contained the trypanosome. In the latter variety were included those who exhibited tremors, unsteady gait, going on to complete helplessness. After atoxyl injections the weakness gave way to increased power and very many of the patients were again able to walk about. Some desperate cases even lost their drowsiness, consciousness returned, and they improved so much as to walk about without assistance. So far authorities do not allow themselves to put their trust in atoxyl to effect a cure, but its therapeutical activity in that direction is undoubted.

There seems to be every prospect that this drug will acquire a permanent and very valuable position in the pharmacopœia. It should therefore be pointed out that idiosyncrasy to this drug may exist. A case is recorded of an adult who suffered from amaurosis, oedema of skin, and hyperkeratosis after the continued injection of atoxyl,¹³ but it is not clear whether the aniline may not have been concerned with the production of this untoward effect. Those who have had most experience of the use of atoxyl state that the only unpleasant results they have noted were dragging pains in the extremities, which, however, were quite evanescent.

Brondesbury, N.W.

THE BALNEOLOGICAL TREATMENT OF URINARY DISEASES.

BY DR. OSCAR KRAUS.

THE last few years have seen a notable change in the ideas dominating the field of balneology as well as in the domain of medicine in general. This is due to the fact that our views of physiological processes have been changing, that we are no longer prone to consider the human body as a chemical laboratory, pure and simple, that, on the contrary, we are now taking proper account of other non-chemical biological processes. As a result our views on the mechanism of the healing process and the indications for bath treatment and particularly on the "specificity" of the curative agents have become correspondingly clearer and more rational.

Purely external conditions assign to balneotherapy a field of action peculiarly its own. The patients whom a physician sees in the city are, as a rule, either bedridden or well enough to attend to their business. The physician at a mineral spring, however, has to do with a third class of patients—viz., with such as are not bedridden but nevertheless do not need to attend to professional duties and can and will therefore devote the whole work of the day to the treatment of the maladies. It is at once apparent from this that results may be attained on general hygienic principles—entirely apart from any therapeutic power of the various waters themselves—results, however, which are fundamentally a part of the particular province of balneotherapy in the broader sense.

There are, generally speaking, few affections, especially chronic ones, which will not be benefited by a rational dietetic and climatic general treatment of longer or shorter duration. But of particular value, at any rate for certain diseases, must be the profound influence upon certain phases of the metabolic process, such as the digestion and urinary functions, which may be brought about by so powerful a medication as, e.g., the Carlsbad mineral water.

In giving the following report out of my 18 years' experience in treating urinary cases in Carlsbad I do so primarily because the matter is of paramount professional interest to

⁶ Wiener Medicinische Wochenschrift, 1903, No. 17.

⁷ Orvosi Hírlap, July 15th, 1903.

⁸ Berliner Klinische Wochenschrift, 1902, No. 13.

⁹ Therapeutische Monatshefte, August, 1903.

¹⁰ Ibid., April, 1903.

¹¹ Brit. Med. Jour., May 27th, 1906.

¹² Deutsche Medicinische Wochenschrift, 1907, No. 4.

¹³ Münchener Medicinische Wochenschrift, 1905, No. 22.

leucocytosis takes place, neither do the white cells contain any arsenic. The inference, therefore, is that the increase in leucocytes and the presence of arsenic therein are associated with the establishment of immunity or tolerance. The importance of this observation lies in the fact that arsenic has been found of great value in various blood diseases, notably leucocythæmia, pernicious anæmia, and chlorosis. As a result of experimental work it is quite certain that the nutrition of growing bone is improved by the administration of small doses of arsenic. According to Stockman and Charteris¹ the action on bone marrow is also very definite. The leucoblastic cells are formed in increased number and a resulting leucocytosis ensues. There is, however, no indication of any increased production of red corpuscles. On the other hand, excessive doses lead to a hyaline degeneration of the bone marrow cells, with a decrease in both red and white corpuscles. It must be noted, too, that although arsenic is the most approved drug for the treatment of pernicious anæmia it does itself cause increased blood destruction when given in poisonous doses. The pigmentation which is a feature of the toxæmia of arsenic is probably due to the deposit in the skin of hæmoglobin derivatives.² The profound influence which arsenic is able to exert on the organism has, as already mentioned, secured it a position in the group somewhat vaguely called alteratives. Its chemical position is, however, more defined as a member of the nitrogen group, which includes also such powerful elements as phosphorus and antimony. Nitrogen is the cardinal constituent of the protoid molecule, but apparently other members of the nitrogen group are able to take its place in the molecule. Obviously the substitution of arsenic for nitrogen must alter the whole chemical physiology of the body. The change manifests itself as a fatty degeneration of protoid tissue, in which the liver, kidneys, heart, and muscle share. There is a larger excretion of nitrogen, mainly in the form of ammonia. The formation of glycogen in the tissues is diminished, but an increase of lactic acid takes place in the blood and therefore its alkalinity is lessened.

The art of employing arsenic in medicine consists of gaining control of its pharmacological action and making it subservient to therapeutic aims. As is well known, the Styrian peasants have long succeeded in applying this drug to the purpose of increasing the vigour of the male population and enhancing the physical charms of the female. Perhaps one of the best-established facts in the therapeutics of arsenic is that it modifies the nutrition of the skin. The adipose tissue is certainly increased, and the Styrian ladies take advantage of this circumstance to improve their complexion. There must, however, be some specific action on the epithelium; fatty degeneration of the lower layers has been suggested. There is also some modification in the orderly process of the shedding of the cutaneous epithelium. The fact, however, remains that its influence in skin disease is a matter of considerable therapeutical value.

The other departments of disease which are favourably affected by arsenic are represented by such diverse conditions as chorea, malaria, and the anæmias. The rationale of its action is indefinite. In chorea, for instance, the abatement of symptoms may be due to improvement in general nutrition or to specific action, either on nerve centres or definite toxins. In malaria the plasmodium is probably destroyed by arsenic, on the analogy of certain observations made in trypanosomiasis, which are referred to later. The clinical value of arsenic in the anæmias, including leucæmia, pernicious anæmia, and also lymphadenoma, is undoubted; but it must be confessed that in view of conflicting statements regarding its hæmatinic action the *modus operandi* remains obscure. It may, however, be laid down as a golden rule in the treatment of chlorosis that arsenic should be combined with iron when the red cell count falls below 3,000,000 per cubic millimetre. In a severe degree of chlorosis the iron may be relied on to increase the hæmoglobin, while the action of the arsenic will assist in the production of new red corpuscles.³ The pharmacopœial preparation of iron arsenate must be given in such minute doses that the amount of iron contained therein is necessarily a negligible quantity. An exceedingly useful and effective combination of these two drugs is to be found in arseno-ferrate, where the iron is presented as an organic protoid compound and is of undoubted therapeutic activity in chlorosis and cases of

secondary anæmia.⁴ The arsenic exists in this preparation in the form of arseno-albumin. In regard to other combinations of arsenic reference should be made to bromide of arsenic, which may be given in minim doses of a 2 per cent. solution. This has been found serviceable in diabetic cases with nerve complications. Arsenate of strychnine is a preparation which has been found useful in severe cardiac asthenia of an influenza type for patients who will not tolerate the usual mixture of iron, quinine, and strychnine.

The impetus to the chemical modification of arsenic was mainly given by the desire to obtain a preparation whose therapeutical value should not be prejudiced by its toxicity. Accordingly, in 1897 Danlos introduced cacodylic acid which is chemically di-methyl arsenic acid. Its sodium salt—sodium cacodylate—is occasionally disguised under the names of arsinyl or arrhenal. The arsenic exists in this compound in very close combination and its liberation in the body is a very slow and gradual process. This consideration is regarded as the explanation of its low toxicity. The cacodylates certainly gained wide popularity as safe and efficient substitutes for arsenic. Their reputation in chronic pulmonary tuberculosis was remarkable and they sustained the credit of arsenic for improving nutrition when metabolism was deranged in wasting diseases. They were applied to every therapeutical purpose to which arsenic is put, but with conflicting results. Fraser, for instance, used the cacodylates in many diseases which are benefited by arsenic, but he could not satisfy himself of their value. Hypodermic injection was the favourite method of administration and $\frac{1}{4}$ th of a grain is an average dose. As much as $\frac{1}{4}$ to 1 grain may be given by the month. Hefter⁵ states that not more than $\frac{1}{10}$ th of the cacodylate of soda is decomposed in the body. At any rate, the odour of cacodyl As (OH)₂ is evident in the exhalations of the patient.

It should be said that some of the older dermatologists of the nineteenth century had already resorted to the hypodermic administration of arsenic in order to prevent the irritative action of the drug on the intestinal mucous membrane and in order to secure its specific virtues with more reliability. When lichen ruber planus was treated largely by pills containing arsenic (Asiatic pills) something like the number of 1000 constituted an average course; but subsequently it was found that 30 hypodermic injections sufficed to attain the same end. In 1897 Herxheimer advanced upon this and injected up to $\frac{1}{10}$ th of a gramme of arsenious acid into the veins for psoriasis. He cured his cases in an average of 48 days. The Levico arsenical water has been used for hypodermics with good results. The records of the first attempts at the hypodermic administration of arsenic supply a goodly number of unpleasant accidents, and these to a great extent were responsible for the introduction of the cacodylates.

At the present moment, however, interest in the potential developments of arsenic is concentrated in the combination known as atoxyl. Chemically this substance is meta-arsenic anilid ($\text{O}_2\text{H}_3\text{AsO}_2$). It was first used in 1900 in Lassar's skin clinic, after its properties had been determined by experiments on rabbits. It contains metallic arsenic in the proportion of 37.69 per cent., or, in other words, half the amount of arsenic present in arsenious acid. It possesses one-fortieth part of the toxicity of arsenic or one-twentieth of that of arsenious acid. It is an odourless white powder with slightly saline taste and its solubility in warm water is 1 in 5. Its solution is stable and does not give the characteristic tests for arsenic. Atoxyl has now had a somewhat prolonged trial and the clinical results justify the conclusions that (1) it affords the means of increasing the amount of arsenic given without the risk of poisoning; (2) it possesses in full measure all the therapeutical properties of arsenic; and (3) that its value is proportionate to the increase of arsenic which its administration permits. The favourite method of the exhibition of this drug is by hypodermic injection. Originally $\frac{1}{10}$ th of a gramme was given, but experience now shows that the dose should start with $\frac{1}{10}$ th of a gramme and go up to $\frac{1}{4}$ th of a gramme. When it has been determined to give a course of arsenic over any prolonged period the most convenient plan is to inject $\frac{1}{4}$ th of a gramme of atoxyl twice a week. Intravenous and also intramuscular injections are employed, but subcutaneous injections are unirritating and quite efficient. The earliest cases treated by atoxyl were dermatological. They included

¹ Journal of Pathology and Bacteriology, 1902-1903.

² Dixon's Pharmacology.

³ THE LANCET, 1901, vol. I, p. 1148.

⁴ Klinische Therapeutische Wochenschrift, March 25th, 1906.

⁵ Archiv für Experimentelle Pathologie und Pharmakologie, 1901, p. 45.

It is usually accompanied by disturbances of circulation the deeper pelvic organs. Moreover, the increased bowel activity and the flushing out of the urinary apparatus act as a depletive. Reference cannot too often be made to the very intimate reciprocal relations between intestine and urinary tract; it is a result of their contiguity, of their common blood- and lymph-supply, and in part common nerve-supply and musculature. We will neglect the controversial question as to the penetration of the bladder wall the colon bacillus; he it only said that we never see strikingly the defervescent action of a laxative in an acute attack of fever as after operations on the urinary passages or in affections of this apparatus.

Turning again to nephritis, or rather to the different sections grouped under the name Bright's disease, we have to admit that we are as little able to cure them completely by balneotherapy as we are by any other measures. I hope none will expect such results of us. On the other hand, balneotherapeutic treatment is particularly well fitted to combat certain symptoms with success. In those cases where the quantity of urine is low we see a rapid rise. We all return to this point again. As to the behaviour of the albumin and formed elements in the urine I am not able to make a detailed report before completing certain experiments now in hand, which I shall reserve for a future communication. I may say, however, that my experiences at this point have been encouraging.

We should lay particular weight on the behaviour of that group of symptoms which Bouchard has called symptoms of *toxic uræmia*. These are the remoter or general symptoms which we have mentioned earlier as the result of toxic influences. Such are gastric and intestinal disturbances, anorexia, profuse diarrhoea or chronic constipation, hemiparesis, hiccup, as well as certain forms of paroxysmal frequency of micturition, or "pollakiuria," a term introduced in medicine by Dieulafoy, phenomena which from their whole nature are to be regarded as toxic. These are favourably affected by every stimulation of renal or intestinal secretory activity. This fact will be especially emphasised if we remember that Biedl and Kraus were able to demonstrate the elimination of various bacteria through the kidney, such as the bacillus coli, staphylococcus, &c., and that they could facilitate this elimination by stimulating the flow of urine. (This is also naturally of importance with regard to certain infective varieties of nephritis. Indeed, we observed in such acute cases rapidly successful results with no other medication than large quantities of mineral water to induce diuresis.) These patients improve notably at Carlsbad, recover appetite and regularity of the bowels, gain in weight, and lose the distressing headaches; their complexion improves—that characteristic toxic complexion—and good humour returns. The physician forgets too often that patients who cannot be cured need and will demand treatment. They are the ones who are most thankful for relief from distressing symptoms, and so much the more thankful if, like most nephritics, they are unaware of the seriousness of their condition and regard the remoter symptoms as the most important or as the whole disease itself.

And so I have more or less defined the goal which balneological treatment has in view for nephritis. My experience has been that compensated heart lesion, even oedema if of a slight degree, are not contra-indications for Carlsbad treatment provided that it is carried out carefully and in the right way. On the other hand, patients with ascites—and, strangely enough, they keep coming to Carlsbad as a last resort—are quite miserable there, as might be expected, and their medical men have to get them home again for their pains. I remember two such cases where I was compelled to tap the abdomen soon after arrival.

Nephritis with serious circulatory derangements (hypertrophy and dilatation of the ventricles) with considerable oedema had better not be sent to Carlsbad, not even *solatis causâ*, because the heart-pump is too sorely taxed by the increased amount of fluid taken, as well as by the walks, especially the climbing, which patients at a resort will indulge in, in spite of the doctor's advice. I should like to add another consideration. Nephritics catch cold easily, therefore they should be sent to a place which is subject to so sudden temperature changes as Carlsbad only at the most favourable season of the year. I have had some rather unpleasant experiences in this connexion.

As to renal tumours, there is nothing to be said except that we occasionally see them in Carlsbad after hæmorrhages,

when they have been taken for stone in the kidney. They are, of course, sent at once to the surgeon as soon as the diagnosis is made.

Without wishing to go further into the question of pyelonephritis, pyonephrosis, and other such forms of infection, we must speak of *pyelitis*. This is sometimes due to calculus formation, the *pyelitis calculosa*, or may be of the ascending variety, the *cysto-pyelitis*. The treatment of the first depends on that of the *nephrolithiasis*. The treatment of the second must not only consist in flushing out the infected urinary apparatus by the "drinking cure" and helping in the elimination of the toxins, but must be directed as well against the various local conditions in bladder, ureters, and prostate. Every case of *pyelitis* is sooner or later sent to Carlsbad and one may say, without being too sanguine, that a beneficial effect of the water cure is evident not only in those forms of *pyelitis* where the removal of the causal factor is possible (*pyelitis calculosa*, certain forms of *cysto-pyelitis*) but even in the incurable forms as well. Whether the infection is purely of colon type, or whether it is mixed with proteus, staphylococcus or streptococcus, the increased diuresis and the elimination of the toxins through intestine and kidney seem to play a definite part in bringing about recovery. For many years alkaline waters have been used "to dissolve the concretion and to mitigate the inflammation." We shall presently discuss whether it is possible or not to dissolve the concretion, but the healing effect of the alkalies upon the inflamed pelvic mucous membrane is, at any rate, most apparent in Carlsbad.

We come now to the discussion of *nephrolithiasis*. Among the laity the opinion still prevails that Carlsbad water is able actually to dissolve kidney- or bladder-stones. Strange to say, this opinion has also crept into professional literature without meeting criticism. It is recorded in a Carlsbad publication by Dr. Springsfeld of the year 1756, "*Commentatio de prerogativa Thermarum Carolinensium in dissolvendo calculo renicæ præ aqua calisviæ*," that a kidney-stone of almost two and a half ounces (i.e., about 87 grammes) in weight was dissolved in six days "entirely to a pap, like fine, soft chalk," in sprudelwater.² Springsfeld's other data are all as inexact as that mentioned and give no indication as to the chemical constitution of the stone thus softened. However, we once took the trouble to make a similar test with a urate stone of about the size of a hazel-nut, obtained through the kindness of the late Professor von Dittel. It was a calculus removed, with several others, by a *scietio alta*. We put it into a vessel and for 24 hours let Carlsbad water flow in and out, the whole being maintained at body temperature on a water-bath. The concretion remained unchanged, a loss of weight of only a few milligrammes being appreciable, such as was to be explained by the mechanical breaking and floating off of superficial particles. This experiment proves that uratic stones are not even dissolved *in vitro*; any attempt at a solution of them by the injection of Carlsbad water into the bladder, as has been proposed by some, must therefore *a priori* be condemned as hopeless.

That a solution of calculi in the bladder cannot be brought about by *drinking* the water need only be pointed out to the laity, among whom this superstition still prevails. On the other hand, experience teaches us that concretions both of the kidney or its pelvis and of the bladder may be driven out by the drinking-cure here. The increased diuresis resulting from the latter is beyond question and to this chiefly is to be ascribed the discharge of the stones.

The question, when can Carlsbad treatment promise a success and when ought surgery to assert its rights will be considered in the sequel.

(To be continued.)

² Cited by Hlavacek, Carlsbad, twelfth edition.

WEST LONDON POST-GRADUATE COLLEGE.—The inaugural lecture of the summer session will be delivered by Major Leonard Rogers, I.M.S., on Monday, May 13th, at 5 p.m. The title of the lecture is "The Clinical Diagnosis of Fevers in the Tropics," illustrated by lantern slides. Anyone interested who would like to attend will have a card of admission sent on application to Mr. L. A. Bidwell at the West London Hospital.

me and because I believe that in this chapter of therapeutics there remain many questions yet to be answered, many errors yet to be set right. The first of these questions is fundamental: whether, in reality, for patients with a diseased urinary apparatus there is a need for a balneological course of treatment or not? The answer is found in the practice of every day: such patients are, as a matter of fact, sent to the baths, therefore, there must be a felt need of that kind of treatment. The question only remains, whether we may expect such treatment to benefit our patients and, if so, to what degree? I do not wish to be misunderstood; the mere fact the patients visit the baths is in itself certainly no proof of the necessity of bath treatment; the triteness of the phrase "fashionable watering-place" is sufficient testimony to that. But when genuine invalids, such as patients with urinary diseases really are, are sent to a watering-place the conscientious physician must not only feel the need but also be convinced of the expediency of this treatment. If asked what are the indications in such cases for balneological treatment we may give a fairly general answer. Those patients should as a rule be sent whose progress at home is not as satisfactory as might be desired, whether the aim be a complete recovery through influence on the metabolism in general or by local treatment of the urinary organs in particular, or whether in the case of incurable processes one expects an ameliorating effect both on general condition and on particular disease symptoms through the specific healing properties of the mineral-water in question and the general benefit of the *régime*—or whether finally the processes to be combated are in reality those of a generally disordered metabolism and only happen to make themselves evident through the urinary system, as in the case of renal calculus, diabetes mellitus, diabetes insipidus, &c.

It is hardly necessary here to go into the specific properties of the Carlsbad thermal waters; others have discussed them for centuries before us. The properties of Carlsbad waters are beyond controversy which justify their use more especially in diseases of the urinary apparatus. These mineral waters have a favourable influence on the functions of all mucous membranes, especially of those of the bladder and bowel, and they stimulate intestinal and renal activity to a marked degree. We will bear these points in mind, they furnish a starting-point for our inquiries.

It is far from my present purpose to go into the pathology of urinary diseases, I wish only to speak of a certain few factors which have impressed their importance upon me in my practice. As is well known, the diseases of the urinary apparatus may be broadly divided into two groups, the one where local and the other where general symptoms play the chief rôle. The majority of the local affections have an infective origin, while a toxic character prevails in the other group. As I am to confine myself to purely clinical observations I may be allowed to make use of this purely clinical classification.

Of first importance is the question: How do the diseases of the kidney fare at Carlsbad, what is our experience with them there? We will speak, to begin with, of acute and subacute diffuse nephritis. Of late years we have been seeing them more frequently at Carlsbad, and, I must add, have been glad to see them. I at least have had a favourable experience with them. Without further remarks I will give the following case as an example.

An English lawyer, aged 42 years, consulted me in the summer of 1902. Within the year he had been having hæmorrhage from the kidneys, which had lasted with remissions until he came to Carlsbad. Rather in consideration of pain in the left kidney region, of the fact that his father had once undergone an operation for stone, of the sedentary life of the patient, and of the scanty uric acid excretion said to be present, than of any typical course of the disease, a probable diagnosis of nephrolithiasis had been made. To be sure, the possibility had been left open by his conscientious adviser of a hæmorrhage "from another cause." I have mentioned here the nationality of the patient with a reason. It is well-known that England was the starting-point of the movement which defends most emphatically a diagnostico-therapeutic incision of the renal capsule. At the annual meeting of the British Medical Association at Cheltenham surgeons expressed themselves in favour of such an incision in just such cases as the one here cited. If a stone is found it is removed; if not, the after-effects of the operation, due, as is said, to a

"relief of kidney tension," are beneficial, and the pain and the hæmorrhage are said always to disappear. This effect would be comparable to that of an operation for glaucoma. However, the more recent views as to the harmlessness and the favourable after-effects of the operation are by no means so unmixed, and Barth's word of warning with regard to diagnostic nephrotomy at the Berlin Chirurgical Congress in 1900 seems to have found response both in England and on the continent. The two well-known surgeons whom this patient had consulted had spoken of operation as a last resort but were quite agreed in sending him to Carlsbad to begin with. When I saw him first he had a continual dull pain in the left kidney region. The left kidney was tender to pressure. There had been no attacks of colicky pain. In the urine was a layer of blood sediment of a finger's breadth but no clot. The treatment ordered consisted of drinking the waters and heat applications (mud packs) to the kidney region. In a few days the sediment (i.e., the hæmorrhage) had become so scanty that one could recognise, besides the erythrocytes, characteristic blood casts and kidney epithelium. The quantity of albumin was greater than that to be explained by the blood present. Further, in the course of treatment the pain and hæmorrhage disappeared completely. There was never any trace of uric acid and never any trace of pus in the urine. Other points which were in favour of the diagnosis of nephritis need not be here enumerated (as a matter of fact the case was: probably one of the post-scarlatinal form), but I wish merely to throw some light on those aspects of the case which were of weight as regards treatment. How are we to explain the cessation of the pain and the hæmorrhage? It is generally accepted that the pain in diffuse nephritis is due to an over-stretching of the capsule from enlargement of the kidney. The diuretic action of Carlsbad water has been so freely discussed by Sandberg, Ewald, Jaworsky, London, &c., that I may properly assume that it is generally familiar. Now Leube recommends the administration of large quantities of alkaline carbonated waters in the early stage of nephritis; and when we remember that Anfrecht regards an occlusion of the tubules of Henle as the cause of the anuria, the mode of action of a diuretic mineral water becomes obvious. As Fürbringer first suggested for infective nephritis the micro-organisms themselves do not seem to be the cause of the kidney injury; this injury seems rather to be attributable to a product of the metabolism of the pathogenic bacteria, to a poison which is excreted through the kidneys. It may be assumed that a diuretic mineral water favours the excretion of the toxins, dilutes them, and so diminishes their harmful action, explaining in this way the favourable results which follow the use of such waters.

The increased diuresis certainly favoured the cessation of the renal hæmorrhage in this case, as in many similar ones that I have seen. The first necessity for hæmostasis is always the elimination, the "flushing-out" of coagula—a process without which the contractile elements in the pelvis or the calices cannot act properly. For example, in checking a hæmorrhage from the bladder the bladder must first be washed clean from clots, these being removed by whatever expedient is necessary, even to aspiration with an evacuator. It is plain that the diuretics works in a similar way upon the kidney.

We learned in school that in case of hæmorrhage, whether of the kidney or elsewhere, the bleeding organ is to be kept at rest and the vaso-constrictors are to be stimulated by cold applications. It will be remembered that I had ordered hot applications, thus departing seriously from traditions. Moreover, the patient in question had by no means kept his bed; he had taken no violent exercise to be sure, but he had taken walks and thus failed to "keep the kidney quiet." Nevertheless, the hitherto refractory hæmorrhage ceased in this as in very many similar cases immediately the treatment was begun. It is not to be assumed that this was a mere coincidence but that the warm compresses first soothed pain, then dilated the urinary passages, opening an unimpeded outlet for the increased diuresis, and that in this manner, as explained above, the elimination of the coagula took place.

I can also record similar results in prostatic cases. Of course, the mechanism is here rather different. We know that the bleeding in prostatic hypertrophy usually comes on at the height of one of the recurrent attacks of congestion

1 I wish to emphasise that the causal connexion between the commencement of treatment and the cessation of the hæmorrhage had continued in spite of the usual measures the hæmorrhage had continued unabated for weeks before the Carlsbad treatment was begun.

allow of the poison being worked off in small non-lethal doses. It seems to me that if the circulation be brought to a standstill at the seat of injection it might be possible, if this be done early enough, to prevent any venom at all entering. The venom would be imprisoned, as it were, and could be dealt with by permanganate of potash and incisions. I suggest, therefore, that in cases seen early enough the part be frozen with ethyl chloride spray during the making of the incisions and the rubbing in of permanganate of potash. Where the subcutaneous cellular tissue is loose the part containing the imprisoned poison might be shut off from the general circulation by ligature should needles and thread be handy. All the operations would be painless. A tube of ethyl chloride would not be a large addition to a snake-bite outfit.

Kayana, Cape Colony.

A CASE OF POISONING BY COAL-GAS.

By JOHN REID, M.D. ABERD.

THE patient in the present case was a female child, born on Feb. 20th. When I saw her and her mother on that day I called attention to a slight escape of gas from a bracket in the centre of the room. This bracket was not in use but was tied to the ceiling. On the 21st neither the mother nor the child seemed to suffer from the escaping gas. The room was large and a good fire was burning. On March 8th the child could not suck and had the usual signs of capillary bronchitis. She was in the kitchen, which was somewhat draughty. On the 9th she was removed to the room in which she was born but which had been out of use for a day or two. The change took place after my midday visit, at which I found that marked improvement had occurred in her lung symptoms and that she was able to suck. On the 10th I found very few rales on auscultation, but her lips were chocolate coloured and she was rolling her tongue in the mouth as if gasping for breath. She offered no resistance to examining her throat or to depressing the tongue; on the contrary, there was marked apathy. The eyelids were puffed and a thick mucus exuded from the edges of the swollen lids. The conjunctiva was red on the 8th and was so on this date, but the cornea had the dull lustre found in interstitial keratitis. The pupil was small; the general aspect of the face was ashy; the mouth was dry; and on the tongue there was thick mucus, but no saliva. The mucus seemed to be pushed out of the mouth by the rolling movements of the tongue and to reaccumulate. There was cyanosis of the soft palate, which was of the same colour as the lips. The abdomen was tympanitic and when it was pressed the child showed some signs of uneasiness. She was constipated but the bowels had been well opened on the 9th. She was placed suitably for fresh air and was fed by milk given with a spoon. On the 11th the skin of the body had a dusky or ashy hue. The bowels had been moved by a piece of soap in the rectum and the tympanic appearance had subsided. The eyelids were now open and there was no mucus on the lids—probably a boric acid lotion had removed it—but the cornea and conjunctiva were injected and the dull look suggesting keratitis was still present. The lips were chocolate coloured and the soft palate was cyanosed. There was a slight improvement in the movements of the tongue, but there still was thick mucus in the mouth. The child took milk readily from a spoon. On the 12th there was a bright roseolar rash over the whole body, including the head. A few sudamina were present, but there were large rosy red patches over great parts of the surface. A magnifying glass showed that the condition was a dermatitis or bleeding under the skin rather than a proper eruption. The colour was bright red. The tongue was now bright red, intolerant of touch, and covered with aphthae. It was difficult to feed the child but she took milk which was given to her. The chocolate colour of the lips and the cyanosis of the soft palate were now less marked. The condition of the cornea was unchanged. The lungs gave no signs of disease, but only of dryness of the tubes. The motions were black (melæna).

The child's state on March 13th was about the same as on the 12th but the soft palate and lips were now red and showed no chocolate colour. On the 14th her state in the morning was much the same as on the 13th, but towards the

evening the rash and aphthae had pretty well disappeared. She took milk which was given her. The injection of the cornea had passed off but the dull lustreless appearance remained. There were frequent fits of difficult breathing with cyanosis during the day. On the 15th the child looked almost moribund in the morning, but improved with the inhalation described subsequently. There were frequent fits with chocolate colouring of the lips and palate. From the 12th to the 14th there was occasional yawning. It should be mentioned that these fits were not like those met with in fevers and lung affections. There was a semi-comatose state with a chocolate colouring of the lips, which passed off after a time, especially on rousing. In the evening the cornea became more natural and the child's general appearance improved. After the rash had disappeared, in the morning a few bright red patches made their appearance on the fingers; these alone were seen. Her general appearance was more natural, her bowels acted, and the motions were now natural. She was spoon-fed with mother's milk. On the 16th in the morning she had a convulsive seizure, a general convulsion of an epileptic nature, with foaming at the mouth but with little cyanosis. She had been fed during the night and the milk had been returned curdled. Jelly and trypsinised milk were now substituted and retained. At 6 P.M. the child looked natural; she had had no fits but her heart's action was weak. She died from syncope at 7.50 P.M. Marked hypostatic lividity was observed 16 hours after death and a roseolar raised eruption, of a dull character, was at the same time present over the body but not on the head; it was, however, much less copious than during life.

The mother's milk, which ceased on the 10th, was brought back on the 12th by pilocarpine, and on the 16th she had lost all the cyanotic signs from her lips. Evidently the first symptoms of carbon monoxide poisoning were paralysis of the salivary, lacteal, and lacrymal glands, with headache in the case of the mother, and stimulation of mucous glands, or glands of organic life. The fit which the child had on the morning of the 16th was, I think, owing to enfeebled circulation and was not of the carbon monoxide type. The milk had been returned from the stomach curdled.

The treatment up to March 14th consisted of fresh air, appropriate diet, and calomel to move the bowels, and boric acid lotion to bathe the eyes and tongue, with medicines likely to improve secretion. On the 14th, inhalation of chlorine was commenced, the process employed being to mix 10 grains of potassium chlorate with 30 minims of dilute hydrochloric acid in a teacup which was placed near the child's nose until evident signs of irritation occurred. This was frequently repeated during the day. Two minims of this were also added to a two-ounce mixture, of which one-sixteenth part was taken every three hours. It will be observed that the remedy was used late in the case of a very young child, and that no steps were taken to minimise the effects of the release of considerable quantities of carbon dioxide by the chlorine, which formed carbon oxychloride. Probably a more leisurely action employed at an earlier stage would be a safer remedy unless oxygen were available for inhalation, as it was not in this case. I should state that I first used dilute phosphoric acid and potassium chlorate in the mixture, but I think that little or no chlorine resulted from this. The mother recovered rapidly under the treatment. It is rather strange that a dusky or earthy colour at first covered the body. This, I think, was hæmorrhage or pigment of a punctate character. The bright red colour (rash) did not appear till the third day.

Although the antidote was used in the case of a very young subject, debilitated by broncho-pneumonia and tonsillitis (influenza), I feel confident that early and judicious treatment by the chlorine antidote would have led to recovery. As it was death resulted from syncope. It is noteworthy that the mother and child managed to live during the puerperium in the room with a leakage of gas which was repaired on March 11th. The gas became ignited and continued to burn when a lighted match was placed at the point of leakage. The accumulation of gas through the disuse of the room during two days was sufficient to produce very evident signs of poisoning. The child slept in a perambulator, with a hood, both in the kitchen and bedroom. The nursing was good. An inquest was held and the jury returned a verdict in accordance with my evidence.

Walbrook, E.C.

TWO CASES OF SNAKE-BITE, WITH A SUGGESTION FOR TREATMENT.

By WALTER H. HAW, B.A., M.R.C.S. ENG., L.S.A.

ON Nov. 23rd, 1906, I was sent for to see a native girl, aged about 16 years, alleged to have been bitten on the outer surface of the foot at 5 P.M. on the previous evening by a small snake a few inches long. It was described as having a comparatively large head and is well known to the residents here as a "dik-kop adder" (thick-head adder) or "spring-adder," on account of its jumping propensities, I suppose, when irritated. Apparently the snake is the "horned viper," or hornman, but none of the several who had seen it mentioned the presence of horns above the eyes. The animal had been killed, cut open, and the raw surface applied to the wounds after these had been scarified and a ligature applied above the ankle. The girl, after having been bitten, ran at once back to the house and was naturally terribly scared. As far as I could make out no symptoms occurred until about 8 P.M., when vomiting and dimness of vision came on, as well as drowsiness, which increased and necessitated her being kept awake all night. I saw her first at about 12 o'clock mid-day on the following day. She was lying on a pallet in a dark hut, surrounded as usual in serious illness by all her friends and relatives. She was on her right side and the eyes were closed. I am sorry that I am not able to give a more detailed account of the condition of the nervous system, but, of course, my chief attention was directed to what proved to be hopeless attempts to save life. What I have to say was rapidly noted in the course of the treatment.

On the outer side of the left foot, below and in front of the outer malleolus, were the marks of scarifications which had bled. As these had been made through the punctures made by the fangs the latter were not visible, but the farmer who had taken the chief part in the "first aid" informed me that there had been three punctures, suggesting that she had been bitten twice. These were in a single row and had bled. The whole foot was swollen, but I saw no discolouration of skin, ecchymosis, or necrosis of tissue in the region of the bite. A ligature was tightly bound round the leg above the ankle. The leg above this ligature was also swollen and there was a second ligature round the leg below the knee. Above this ligature nothing abnormal was noted externally. The patient lay apparently asleep but could be roused on being shouted at by name and would answer shortly. On being asked if she had pain anywhere, the answer was, "No; only in the leg." If asked to turn over the attempt would be made but without success. The arms and legs could be moved and apparently tactile sensation was not gone from the face, for spasmodic and abortive attempts were made to brush away the flies which had settled on the face and lips. Being asked to put out the tongue the mouth was opened but the tongue did not protrude. There was no objection to the prick of the hypodermic needle in the injured foot, some pain was evidently felt on inserting the needle below the right scapula, and decided struggling occurred on inserting it below the right breast. The breathing was shallow, with marked expiratory phase (not counted), and the pulse was full and strong (also not counted). The respirations were, I should judge, from 20 to 24, and the pulse would be about 90. There was no marked salivation. The eyes were closed and were not opened in response to a request to do so. The upper eyelids were swollen and presented a pinkish-blue discolouration. The colour of the face was not much changed beyond some pallor, which deepened just before death. There had been no hemorrhages. On lifting the eyelids the eyeballs were fixed and staring with dilated pupils, which did not react to the little light in the chamber. No attempt was made to test the ocular muscles or the optic nerve, but the impression which the position and look of the eyeballs gave me was that both paralysis and blindness were present. On one occasion the father of the girl lifted her into a sitting position, when it was noticed that the muscles supporting the head were paralysed, the latter falling about like a flail and having to be supported. I thought, also, that the breathing became more embarrassed while the patient was in the sitting position. When a teaspoonful of a mixture containing strychnine was placed in the mouth it was discovered that the power of

swallowing was lost, so that the face had to be turned downwards to allow the fluid to run out, for it threatened the larynx. These abortive attempts to swallow appeared to throw the breathing into greater difficulties and shortly afterwards I noticed that the breathing was going to stop, so I tried artificial respiration for some time but in spite of this it steadily and rapidly grew shallower until it ceased altogether. At the moment that the breathing proper finally ceased (what followed were only the final gasps of death) I felt the pulse to be then beating strongly but it slowly grew weaker in spite of the attempts to keep it going by artificial respiration and ceased from five to ten minutes (exact time not taken) after the last respiratory effort, which actually drew air into the lungs. Just before the breathing ceased flatus was passed by the anus. The symptoms observed conformed to those described as resulting from the injection into animals of colubrine venom.

A more fortunate issue attended the treatment of another case of snake-bite which occurred in my practice two years previously and of which I give a *résumé*.

On Dec. 14th, 1904, two natives walked into my surgery, one of them stating that his mate had been bitten on the foot a few hours previously by a night adder. The wounds had been cut into, so that no punctures were visible. Being workers on the railway being built here they were some distance from the village when the accident occurred, but they did not lose much time in coming for help. The man bitten complained of nothing but some dimness of vision and he did not appear to be much concerned about the matter. There was no swelling or discolouration round the alleged seat of wound beyond the general swelling of the foot due to a ligature above the ankle and he seemed, with the exception of the slight dimness of sight, to be in full possession of his faculties, both mental and physical, so much so that I was rather sceptical about his having been bitten, although I am aware that natives are no "slouches" in the matter of snake-bite and seldom or never accuse themselves falsely of having been bitten. The snake had been killed but of having been brought in to me. I injected a solution of permanganate of potash round the alleged seat of the bite, left the ligature, which had been tightly applied above the ankle, in position, and gave him a mixture containing liquor strychninae, ten minims for a dose. They would not stay in the village, but went home to their huts on the railway line. Two days after, on Dec. 16th, 1904, the same two natives walked into my surgery, and on this occasion the one was leading the other, who had his eyes closed, and held his head high in efforts to see under the upper lids. On being asked to open his eyes he made an attempt to do so, but ended by lifting the lids with his fingers. He was therefore suffering from ptosis of both upper lids. On examining the eyeballs themselves I found both pupils widely dilated and the globes fixed and staring, with no action either to light or to accommodation. There was no blindness, for he could count fingers at the distance of a few paces, and no apparent loss of sensation. On testing the musculature of the eyeballs I found that on looking to the right the right eye moved well towards the outer canthus, while the left remained looking straight forward. Similarly on looking towards the left the left eye moved well towards the outer canthus, while the right remained looking straight forward. No movement either upwards or downwards could be obtained. On testing all the other cranial nerves in order, as well as the spinal nerves, nothing abnormal was elicited. Apparently all sensation was normal. There was therefore a complete paralysis of both third nerves on the third day after the bite of a night adder. I repeated his strychnine mixture and did not see him again, but was informed that he and recovered later. He was not taking belladonna and I got no history that he had taken any native herb which might cause such paralysis. His intellect was quite calm and clear.

With regard to the treatment of snake-bite, I am unaware whether the suggestion I am about to offer has been previously made, but as it seems to me to be in accordance with the dictates of common sense I give it for what it may be worth. I have had no opportunity of trying it, but I shall do so on the first occasion. The great difficulty in the treatment of snake-bite is to keep the venom out of the circulation. If this could be effectually done until such time as the venom is destroyed it may be possible to save more lives than is now being done. The usual method of preventing the venom entering the circulation is by means of the ligature and one is advised to slacken it occasionally to

The operation was prolonged. The patient's radial pulse became very irregular but was fairly forcible. The circulation in the foot of the affected limb seemed to be fairly good though the pulse in the dorsalis pedis artery could not be felt. After the operation the limb was massaged in an upward direction for a short time every hour so as to aid the venous circulation. On Oct. 20th the wound was dressed and the drainage-tube removed. The limb was a good colour and quite warm. Slight fulness was noted on the inner side of the ankle and there was some numbness present on the inner side of the leg. On the 23rd the condition of the limb was very satisfactory and the rubbing was discontinued. The wound healed readily except for necrosis of a small area of skin. The temperature reached its highest point (100.4° F.) on the 26th and fell next day to normal. The man was discharged on Nov. 9th.

The aneurysm after removal measured three and a half inches in its vertical diameter and three inches in its greatest transverse diameter. It involved the common, superficial, and deep femoral vessels. The external iliac artery above the point of origin of the deep epigastric branch was entirely occluded, as was the superficial femoral artery at the point of ligation. The deep epigastric and profunda arteries were dilated, and coming off the back of the aneurysm were three vessels, probably the external and internal circumflex and the first perforating arteries. The interior of the aneurysm was partly filled by laminated clot.

Remarks by Mr. BILTON POLLARD.—Excision is, in my opinion, the best treatment for all aneurysms situated in accessible positions and no aneurysms are more suited to that method of treatment than femoral aneurysm. With cautious dissection it is not difficult to isolate and ligature all the vessels supplying the aneurysm before they are divided. In the case now reported the aneurysm, which filled Scarpa's triangle, involved the common and superficial femoral arteries, and to some extent the deep femoral artery also. The external iliac artery had been tied some years before the patient came under my care, but pulsation returned soon after the operation; and immediately before I took charge of the case compression of the external iliac artery had been tried without success. The failure of both these methods was clearly due to the free supply of blood to the aneurysm from other vessels than the external iliac. The profunda femoris, the external and internal circumflex and the first perforating arteries all appeared to arise separately from the sac of the aneurysm and, although the external iliac artery was occluded, blood was still entering the aneurysm from the deep epigastric artery. The anterior crural nerve and its branches and the femoral vein were the only important structures endangered by the operation. The anterior crural nerve was defined just below Poupart's ligament and there was not much difficulty in separating it and its branches from the aneurysm. It was quite otherwise with the femoral vein, for it was so incorporated with the wall of the aneurysm as to be quite unrecognisable for about three inches of its course. The vein was isolated above and below, but the line of the intervening portion had to be guessed at. Whilst this part of the vein was being dissected from the sac a slit about an inch in length was made into it. The bleeding was completely controlled by a fine continuous silk suture and no further trouble resulted from the accident. The patient made a rapid recovery and when last seen six months after the operation the cure was perfect. The size of the patient's thigh was decreasing and he was no longer troubled by either weakness or swelling of the leg.

TORBAY HOSPITAL, TORQUAY.

- (1) A CASE OF STRANGULATED FEMORAL HERNIA; HERNIOTOMY FOLLOWED BY RESECTION OF BOWEL AND CIRCULAR ENTERORRHAPHY; AND (2) A CASE OF FRACTURE OF THE PELVIS FROM SLIGHT VIOLENCE, WITH NIPPING OF SMALL INTESTINE BETWEEN THE FRAGMENTS CAUSING ACUTE INTESTINAL OBSTRUCTION AND GENERAL PERITONITIS.

(Under the care of Mr. GILBERT J. ARNOLD.)

CASE 1.—On Dec. 31st a woman, aged 33 years, was sent into hospital by Dr. F. T. Thistle for operation. On admission the patient stated that for some years she had noticed a small lump in the right groin which had hitherto been painless. She was quite well on the previous day until 7 P.M., when

she began to experience great pain in the groin and this was followed by severe vomiting and a sleepless night. On examination there was found a small tense hernia of the size of a Tangerine orange, occupying the right femoral canal. Mr. Arnold saw her when she entered the hospital and did not employ taxis but had her prepared for operation, which was commenced one hour after admission and 19 hours from the onset of ileus. Local infiltration anaesthesia was employed, a $\frac{1}{2}$ per cent. isotonic novocaine solution containing suprarenin being used. The sac was dusky in colour and contained a loop of small intestine and a small piece of adherent omentum. The bowel was dark and congested, with loss of polish, but by no means gangrenous. The narrow tightly constricting neck of the sac was cautiously nicked with a blunt bistoury sufficiently to relieve strangulation and to enable the bowel at the seat of constriction to be drawn down and examined. Immediately this was done a slight leakage of the liquid intestinal contents was seen at the point where the bowel was compressed against the sharp edge of Gimbernat's ligament. The parts were cleansed with hot saline solution and the small necrotic opening in the softened friable bowel was invaginated and closed with a few Lembert's sutures. However, the appearance and behaviour under stimulation with hot saline solution of the involved three-inch loop of small intestine contrasted badly with the healthy bowel beyond and Mr. Arnold had no hesitation in deciding that it was unsafe to return it. The strangulated knuckle was divided through its centre and two small-sized Paul's glass tubes were tied into the open ends, the parts being carefully isolated with sterile gauze and the operation concluded by one or two sutures which served to secure the intestine and glass tubes in the wound. The patient vomited a considerable quantity of faecal fluid during operation, but there was no shock during or after its progress. Three hours later, as the amount of intestinal drainage that had taken place through the glass tubes was small, Mr. Arnold passed into the intestine by means of a catheter and funnel some warm normal saline solution, and this was quickly followed by a free discharge from the tube in the afferent piece of bowel which was received into an attached waterproof bag.

A second operation was performed on Jan. 2nd (two days after the herniotomy), the patient having greatly improved and taken a fair amount of nourishment. Mr. Arnold removed the Paul's tubes and inserted some gauze within the open ends of the bowel, and again operating under the same local analgesia the femoral wound was enlarged into the inguinal canal by division of Poupart's ligament. The affected loop of small intestine, together with healthy bowel beyond, was then readily brought outside the abdomen and surrounded with sterile gauze. Healthy bowel was then occluded by double ligatures of rubber drainage-tube four inches on each side beyond the open ends. Its mesentery was ligated with sterile catgut and approximately eight inches of small intestine were removed. An end-to-end anastomosis was then effected by an inner row of interrupted sutures of No. 0 catgut, not including the serous coat, the sutures being tied with the knots within the lumen of the bowel and particular care being taken of the mesenteric border. An outer row of fine Lembert's sutures, using fine silk and cambric needles, completed the union, which was accomplished without narrowing. The ligatured mesentery was folded on itself and secured thus with a few stitches in order that no hole should be left at the site of the anastomosis and possibly give rise to future trouble. The bowel was returned. The divided Poupart's ligament and the femoral canal were then methodically sutured and the wound was closed round a small gauze drain. Recovery was quick, complete, and uneventful.

CASE 2.—A woman, aged 76 years, was seen on Jan. 8th, in consultation with Dr. J. U. Huxley, and immediately sent into hospital as a private patient. She had recently been through a dangerous illness under Dr. Huxley's care suffering from bronchitis and a weak heart. She had formerly worn a truss for a right femoral hernia. Two days prior to admission she was discovered by her daughter on the floor in her bedroom. The patient, who had been confined to her bedroom when the accident occurred, stated that she had tripped over the leg of a chair. There were no bruising and no evidence of injury to the femur or hip-joint. Severe abdominal pain with frequent vomiting rapidly set in. On admission the condition of the patient was extremely bad. Her thin abdomen was greatly distended and did not move with respiration. There

had been treated for two months.

On admission to University College Hospital on Sept. 22nd, 1906, he was found to be a heavily built, well-nourished man. In the left groin was a swelling which filled Scarpa's triangle and on the surface of this just below Poupart's ligament was a prominence the size of a walnut. The latter was ill-defined above but sharply outlined elsewhere. The skin over it was normal. There was slight but definite expansile pulsation in the superficial prominence but no pulsation could be detected in the main mass of the swelling. The pulse in the artery below was weaker than on the right side and was slightly delayed. Pressure on the external iliac artery led to diminution in the pulsation of the aneurysm but it was impossible completely to control it. Immediately above Poupart's ligament was the oblique scar of the previous operation. The cedema of the leg had subsided as the result of rest in bed, but the whole of the left thigh was much bigger than its fellow. No other aneurysms could be found. The heart's impulse was very weak and a double murmur was present at the apex. The second sound was considerably accentuated. A moderate degree of arterio-sclerosis was present. On Oct. 4th continuous digital compression of the external iliac artery was carried out for eight and a half hours. No effect on the aneurysm was perceptible. On the 19th a vertical incision was made downwards from the old scar for about nine inches. The surface of the aneurysm was exposed and cleared and it was then found that the above noted prominence was a secondary dilatation of the large mass which lay more deeply. The mass was first cleared on the outer side, the anterior crural nerve being exposed and held aside. The parts surrounding the aneurysm were greatly matted together and after a prolonged dissection the deep circumflex iliac artery was found and ligatured and the external iliac artery was recognised. In the process of clearing it the deep epigastric artery was wounded. It was ligatured, the external iliac artery being secured above its point of origin. The superficial femoral artery was then exposed and ligatured below the aneurysm. Even after this stage the aneurysm still pulsated. It was then found that the femoral vein was closely incorporated with the sac of the aneurysm on the inner side. Part of the sac was therefore cut away and left attached to the vein, and the aneurysm was rapidly turned downwards and removed. Several large vessels were involved at the back of the sac but they were readily controlled by forceps. It was then found that a longitudinal wound about three-quarters of an inch in length had been made in the femoral vein. The rent was closed by a continuous suture of fine silk. Immediately below this wound a large vein, probably the profunda, entered the main vein. All divided vessels were then ligatured and the skin wound was partly closed, a drainage-tube being introduced.

With regard to the occurrence of pigmentation, if the suprarenals were removed in animals pigmentation did not occur, but if they were damaged or infected pigmentation of the skin developed. In rapid destruction of the suprarenals, as, for example, by carcinoma, pigmentation of the skin did not take place. He referred to a case in which the solar plexus was alone involved and the pigmentation was on the trunk rather than on the peripheral portion of the limbs. The more rapid the disease the less the pigmentation.

MEDICAL SOCIETY OF LONDON.

Surgical Affections which Simulate Appendicitis.—Cases of Goitre removed under Cocaine Anæsthesia.

A MEETING of this society was held on April 22nd, Mr. C. A. BALLANCE, the President, being in the chair.

Mr. H. J. WARING read a paper on Some Surgical Affections of the Right Iliac Fossa which Simulate Appendicitis. He would, he said, restrict his remarks to the actual conditions which had come within his own personal experience. The main symptoms of all these conditions were pain in the right iliac fossa of sudden onset with nausea or vomiting. A series of cases were then narrated illustrating the following conditions which had been mistaken for acute or subacute appendicitis: (1) acute infective osteomyelitis of the ilium (acute necrosis); (2) secondary infection of tuberculous lymphatic glands in the right iliac fossa; (3) septic infection of the right broad ligament or Fallopian tube with direct extension to the right iliac fossa; (4) adeno-papilloma of the mucous membrane of the cæcum surrounding the opening of the vermiform appendix into the cæcum; (5) acute torsion of a displaced right ovary; (6) hæmatoma of the right ovary (cases of this condition had been recorded by Mr. H. W. Wilson in THE LANCET of May 26th, 1906, p. 1462); (7) hæmatoma of the right iliac fossa; and (8) intussusception of the vermiform appendix. In the diagnosis of appendicitis it was important (a) to ascertain the exact mode of onset; (b) the previous history of the patient; (c) to make a complete examination of the abdomen and pelvis; and (d) to examine the blood.—The PRESIDENT had met with instances of the first class of cases, and he instanced the case of a boy, eight years of age. He had also seen appendicitis simulated by suppuration and calcification of the lymphatic glands in the mesentery and by extra-uterine gestation. Whenever the end of the appendix was located in the pelvis considerable difficulty in diagnosis was liable to occur.—Mr. ALBERT CARLESS remarked on the difficulties which might arise when appendicitis was mistaken for other morbid conditions. He narrated a case of twisting of the pedicle of an ovarian dermoid which had been mistaken for appendicitis, and referred to perityphlitis, typhlitis (without involvement of the appendix), and suppuration of the kidney as conditions in which a similar mistake might be made. The situation of the pain and tenderness was not, in his experience, of very much aid in the diagnosis.—Dr. F. DE HAVILLAND HALL referred to the case of a girl, aged 12 years, in whom a twisted ovarian pedicle was mistaken for appendicitis.—Mr. A. E. J. BARKER had met with illustrations of all but one of Mr. Waring's groups of cases. He had also met with cases of torsion of omentum, hæmatoma of the broad ligament, perforated gastric ulcer, stone in the kidney, and retrocæcal hernia simulating appendicitis.—Mr. WARING replied.

Mr. J. LYNN THOMAS communicated a paper entitled "A Series of Cases of Goitre removed under Cocaine Anæsthesia" which will be found in *extenso* at p. 1143 of the present issue of THE LANCET.—Mr. BARKER had operated upon a considerable number of these cases and all of them had been done under cocaine anæsthesia. Cocaine was almost a thing of the past. He preferred β eucaine with a slight addition of adrenalin. It was better to strap down the patient's limbs, especially in nervous patients. Professor Kocher did not apparently produce anæsthesia of the deeper parts but this could be accomplished by proper procedure and waiting a sufficiently long time after the injection before the operation. The formula used consisted of eucaine 0.02 per cent. with adrenalin 1 in 200,000, of which an average of three and a half ounces was injected. It was better to inject more till all the œdema had subsided.

LIVERPOOL MEDICAL INSTITUTION.

Suppurative Otitis.—Extroversion of Intestinal Mucous Membrane.—Fracture of the Humerus.—Empyema.—Abnormal Conditions within the Chest Wall.

A MEETING of this society was held on April 18th, Mr. FRANK T. PAUL, the President, being in the chair.

Mr. E. M. STOCKDALE read a note on Chronic Suppurative Otitis Media, with special reference to surgical treatment, the clinical material being a series of cases which included 60 radical mastoid operations. He drew attention to the importance of skin grafting in certain circumstances and mentioned the case of a "bleeder" in which frog skin had been used with an excellent result. A case was related in which an infant, eight months old, had suffered from a discharge from the left ear for seven months. Exploration revealed the fact that almost the whole of the mastoid and petrous portions of the temporal bone were necrosed. Removal of the diseased bone brought into view an extensive surface of dura mater covered by unhealthy granulations both in the middle and posterior fossæ. A considerable portion of the lateral sinus was exposed and the internal carotid artery could be seen as it ascended to enter the skull. His experience showed that the hearing was often improved by the radical operation. His cases demonstrated that the danger of allowing the disease to run its course was much greater in every respect than the risk of even the radical operation.—Dr. W. MILLIGAN said that the great difficulty in practice was to determine the extent of the disease in the accessory cavities of the ear. An exploratory operation, followed if need be by a complete radical operation, was frequently indicated in chronic cases. He found, as Mr. Stockdale had said, that after many radical operations the hearing power was distinctly better than it had been prior to operation.

Mr. G. P. NEWBOLT showed a case of Extroversion of Intestinal Mucous Membrane after operation. The case in its original condition had been shown before the society on Oct 23rd, 1906. The abdominal wall was now completely restored with the exception of a small sinus from which a little mucus sometimes escaped.

Mr. RUSHTON PARKER read a note on Compound Fracture of the Humerus and showed a patient whose upper arm had been severely lacerated and the humerus broken transversely. Mr. Parker explained by means of lantern slides the way in which the ends of the bone had been kept in position by means of a sheet-iron twisted back-splint and two smaller lateral ones without having recourse to wiring. An excellent result had been secured. Radiographs were shown exhibiting the stages of callus formation.

Dr. W. B. WARRINGTON read notes of three cases of Empyema of an Unusual Nature. In the first patient, who was a boy aged 17 years, the empyema was latent for over a year. There were very few symptoms and spontaneous recovery followed rupture of the empyema through the lung. In the second case the empyema followed pneumonia and was limited to the upper part of the thorax. The patient had six years previously had an empyema which had been opened in the usual infra-scapular site. The third patient was a boy, aged eight years. The physical signs were unusual; they comprised extended hyper-resonance, with amphoric breathing, coin sound metallic tinkling, depression and rotation of the liver. There was an area of movable dullness in the lateral and basal regions of the right thorax. Dr. Warrington considered that the symptoms were such as could be caused by air and fluid in the pleural cavity, though evidence as to the cause of a pneumothorax was wanting.

Dr. JOHN HAY read notes of three Cases illustrating Some Points in the Diagnosis of Abnormal Conditions within the Chest Wall. The first case was one of actinomycosis of the lung simulating pulmonary tuberculosis and terminating fatally. The patient, who was a girl, aged 16 years, suffered from great dyspnoea, cough, and anæmia, and had been losing weight for six months. Her pulse-rate was 160 and there were signs of consolidation at the apex of the right lung. Three weeks later numerous abscesses had formed. Actinomycosis of the lung was diagnosed with a secondary actinomycotic pyæmia and this diagnosis was verified by subsequent examination of the pus. The second case was one of centrally placed empyema not discovered by frequent exploratory aspirations. The patient, who was a woman,

was a slight fullness over the right femoral canal. Vomiting of very offensive material was frequent. The pulse-rate was 120, weak, thready, and intermittent. There had occurred some slight loose actions of the bowels during the previous sleepless night. Acute intestinal obstruction was manifest and Mr. Arnold was rather of the opinion that the cause might be found in a Richter's hernia in the right crural canal. It was obvious, too, that operation under general anaesthesia entailed a great risk of death on the table. The patient, however, expressed herself as willing to face the risk of operation rather than endure further misery and acute suffering.

By means of the same local anaesthesia as was used in the previous case the old femoral hernia was rapidly explored but only a narrow empty sac communicating with the general peritoneal cavity was discovered. The abdomen was then quickly and painlessly opened in the linea alba above the pubes. Much brown turbid serum escaped and there were flakes of lymph on the deeply congested and greatly distended coils of small intestine. Next, some pale collapsed small intestine was discovered and the seat of obstruction was traced to the right side of the pelvis below the brim where the bowel was immovably fixed. An unsuccessful attempt was then made to discover and remove the cause, but no amount of gentle manipulation with the gloved fingers sufficed to liberate the bowel, the distended coils of which were weakly agglutinated at this situation. Concluding that the case was a strangulated obturator hernia irreducible from the abdomen Mr. Arnold returned to the femoral wound and after infiltrating the deep structures superficial to the upper and outer portion of the thyroid foramen by blunt dissection through the pectineus muscle there was exposed a small dark nodule of tissue recognised as a bit of intestine lying against the horizontal ramus of the os pubis. Examination with a finger in the abdomen at the spot where the bowel was fixed revealed a rough irregularity of the bony pelvis due to fracture of the horizontal ramus near the body of the os pubis. Some force was required to separate the bony fragments and to liberate the lacerated intestine which was held as in a vice. The crushed and nearly severed piece of bowel was brought outside; its division was completed and Paul's glass tubes were tied in the ends. The pelvis was flushed out with hot saline solution and the abdominal incision was closed sufficiently to secure the bowel *in situ*. The femoral wound was closed round a gauze drain. Very offensive faecal vomiting occurred repeatedly during this trying operation, unusually difficult owing to this unexpected traumatic fixation of the gut. Unfortunately, the patient survived barely an hour after the completion of the operation.

Remarks by Mr. ARNOLD.—These two cases were in hospital at the same time and both, I venture to think, present features of considerable interest.

Case 1 is a good example of the rapidity with which grave changes occur in the contents of a strangulated femoral hernia owing to their severe constriction at the neck of the sac. It will be noted that within 19 hours of the onset there was a virtual perforation of the bowel at the neck of the sac and the vitality of the knuckle was so impaired as to render its return unjustifiable. Even gentle taxis at this stage might have resulted disastrously. With regard to the local infiltration anaesthesia, the patient bore her second operation extremely well and felt but little inconvenience throughout the whole procedure, which was conducted without haste, extra time being of no moment. Her pulse was good and only 88 at the conclusion of the operation. At the first operation, when she was acutely ill and therefore intolerant of any manipulation, she complained of being hurt but not until after the sac had been exposed and opened.

As regards Case 2, it is remarkable that a fracture of the brim of the pelvis should have resulted from what seems a comparatively slight degree of violence in a woman who had not previously shown signs of fragilitas ossium. There was no one with her at the time of her fall. It is probable that the small intestine was caught, crushed, and fixed between the pubic fragments during their momentary separation at the time of the accident. On the other hand, the possibility of this disastrous incident having occurred shortly after the accident owing to movement taking place between the fragments cannot with certainty be excluded. Such an accident is probably of extreme rarity.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

The Diagnosis of Addison's Disease.

A MEETING of this society was held on April 23rd, Mr. J. WARRINGTON HAWARD, the President, being in the chair.

Dr. OTTO F. F. GRÜNBAUM read a paper on the Diagnosis of Addison's Disease. He said that the chief signs and symptoms of Addison's disease were asthenia and pigmentation, but either or both of these might be present in many other diseases and frequently the early stages were difficult of diagnosis. Some eight years ago he found that oral administration of suprarenal extract to normal individuals did not cause a rise of blood pressure. Since then evidence had accumulated to show that when a rise of pressure followed the exhibition of the drug by the mouth it indicated suprarenal inadequacy. In doubtful cases the blood pressure was determined accurately and then three-grain doses of suprarenal extract were administered thrice daily for three days. The blood pressure was again estimated and a distinct increase was very suggestive of Addison's disease provided there was no valvular lesion of the heart. Often it was possible to decide that the lesion of the adrenals was tuberculous by suitable examination of the opsonic index of the blood after inoculation with tuberculin.

Dr. H. D. ROLLESTON said that there was very great difficulty in the diagnosis of the early stages of Addison's disease and the method suggested by Dr. Grünbaum was most valuable. He knew that the administration of suprarenal extract raised the blood pressure in cases of Addison's disease, but he had not used it as a diagnostic method. The question of Addison's disease was often raised on the presence of pigmentation only and the condition of the blood pressure was a valuable aid in diagnosis. A condition of suprarenal inadequacy had been described and it would be of interest to find out whether in such cases the blood pressure was raised by the administration of suprarenal extract. In a patient who was given suprarenal extract both during and after pneumonia no rise of blood pressure occurred. He referred to the disappearance of the radial pulse in cases of Addison's disease and said that in one case he had noticed this 36 hours, and in another 48 hours, before death. Pigmentation of the mucous membrane of the mouth occurred only when there was a source of irritation as by bad teeth. The absence of pigmentation in this situation was not of importance in the diagnosis of the disease. He referred to a case in which the diagnosis of Addison's disease had been made on the presence of pigmentation alone more than 30 years ago. The man has exhibited no other symptoms and is still a strong athletic individual.

Dr. F. PARKES WEBER referred to a case in which very prolonged asthenia followed an attack of influenza. From this complete recovery took place and the patient went to India, where he contracted malaria. He then suffered from exhaustion and weakness and pigmentation of the skin was noticed. He had frequent syncopal attacks, in one of which he died. At the necropsy both suprarenals were found to be caseous and matted together across the aorta. He thought that in cases in which prolonged asthenia was present the possibility of Addison's disease should be borne in mind.

Dr. HOWARD H. TOOTH suggested that bromide sometimes gave rise to pigmentation of the skin and he asked Dr. Grünbaum whether he had met with such a case.

Dr. W. EWART said that there was great variation in the symptoms in cases of Addison's disease; in one variety asthenia was the prominent symptom, whereas in another pigmentation was the most marked character. He suggested that the variation in symptoms might depend upon the different portion of the suprarenal affected. He thought that the cases exhibiting much pigmentation were less severe than those with asthenia. He related a case in which pigmentation had existed for many years.

Dr. GRÜNBAUM said that he had never seen a case in which he could prove that pigmentation was due to bromide.

Axial Rotation of Ovarian Cysts during Pregnancy. The patient, aged 27 years, was suddenly seized with severe abdominal pain and vomiting when she was three and a half months pregnant. A tense cystic tumour occupied the right side of the abdomen and a smaller cystic mass was felt on the left side, the uterus occupying a central position. Abdominal section was performed. Both ovaries were converted into dermoid cysts, each of which had undergone acute torsion. The tumour on the left side had ruptured and the peritoneal cavity contained blood. Both tumours were removed and 15 days later miscarriage occurred spontaneously. The foetus had evidently been dead for some days. Bilateral ovariectomy, said Dr. Lea, had now been performed during pregnancy in at least 60 cases, and it was remarkable that in the great majority the pregnancies had continued to the full term.—Dr. T. B. Grimsdale (Liverpool) communicated the case of a patient, aged 29 years, who had never menstruated, but had complained of pain in the back, which had lasted for two days each month. Her general health was good. There was no cough and no abnormal signs could be detected in the lungs. There were old healed scars in the right groin, suggesting old suppurating glands, and a depressed healed scar on the inner side of the lower part of the right thigh, suggesting old necrosis of the femur; there were also some healed scars over the right tibia. The patient could not give any account of these scars. She was well developed and apparently was a strong healthy woman. There was no abdominal tumour. The vaginal examination was made under an anæsthetic. The uterus was found to be somewhat enlarged and moveable. There was a definite elongated swelling to the left of the uterus. An endeavour to pass the sound failed; it would only pass for three-quarters of an inch. The diagnosis of malformation of the uterus with possibly some retention of blood was made. The abdomen was opened and the uterus and Fallopian tubes were removed; the vermiform appendix was adherent to the right tube, and also to the upper part of the rectum into which it had opened. Both Fallopian tubes were distended with thick pus. The uterus contained caseous pus in its cavity, which was also disseminated through its walls. The case was one of tuberculous disease of the uterus and appendages causing primary amenorrhœa.

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held on April 16th, Dr. J. D. E. Mortimer, the President, being in the chair.—Dr. J. H. Dauber read a paper on *Some of the Factors which Contribute to Success in Abdominal Operations*. He said that in malignant cases the mortality was necessarily great; otherwise old people bore operations well. The mental condition was most important. Pessimistic remarks should always be carefully avoided and all the surroundings should be encouraging. If kept long in hospital the courage of patients was liable to evaporate and they refused to be operated on. Obviously any inflammatory condition should be allowed to subside if possible. An even temperature before, during, and after operation was most essential, and for the sake of others the patient should not be returned to the ward till the effects of the anæsthetic had passed off. The disinfection of inhalers and warmth after operation were very essential precautions. Wrapping in cotton-wool was an excellent practice. No patient should have the stomach empty for more than three and a half hours before operation. Asepsis must, of course, be absolute and preferably by the agency of heat, and all concerned must be constantly on their guard against septic loopholes. There was no object so delicate, so susceptible to septic infection, as one that had just been sterilised. Patients trusted their lives to them and it was treachery to neglect the elimination of any possible risk. A heavy-handed operator was distinctly unfavourable to a successful operation, and rapidity of operation was as important as ever it was. An operation which lasted more than an hour was always dangerous from mere lapse of time. After this period exhaustion set in and the patient was liable to sudden heart failure. Assistants should be as few as possible. The risk of sepsis increased with numbers. After operation it was essential to relieve thirst either by giving water to drink or by rectal injections. Occasional movements from side to side relieved the intolerable backache. Morphine was occasionally necessary, and purgatives or injections frequently, especially when the bowels were distended with flatus. Much of the success of operations depended on the commissariat. Patients required tempting and coaxing when convalescing or they would

well-known dictum, "A patient convalesces on his belly." Besides mending the injured part they must patiently endeavour to restore the disordered function.—Mr. J. Foster Palmer then read a paper on the *Treatment of Apoplexy*. There were only two methods of treatment, he said, the active and the passive. Any middle course was dangerous—fatal. As they were not yet supplied with appliances for a sufficiently accurate diagnosis to justify operative proceedings they must steadily adhere to the passive treatment. The indications, therefore, were chiefly negative, warnings against hostile dragons and venerable superstitions. Bleeding was now, perhaps, practically non-existent; but strong aperients, which were not yet extinct, were even more dangerous. Whatever the cause the patient would often go on well until an aperient was given and then he would die almost immediately. The nerves supplying the intestinal canal required rest as well as the nerves of motion, of sensation, and of special sense. It was better to leave the bowels inactive for a fortnight or more than to irritate them in the slightest degree. Blisters, too, were objectionable in a lesser degree as unnecessarily exciting the nerves of sensation. Ice to the head only drove the blood from the surface to the interior and when applied to the back of the neck increased congestion in the brain by dilating the blood-vessels. Position was all-important. Nothing was so fatal as to allow a patient to lie on his back. The powerless muscles allowed the tongue to fall back in the pharynx; the entrance of air into the lungs was hindered, stertor resulted, and apnoea followed in its train. This was generally relieved by placing the patient on his side, preferably the paralysed side, though bed-sores must be carefully watched for. Possibly in some cases the addition of oxygen to the inspired air might be of advantage. Rest was the great desideratum. Rest for the injured brain, rest for the nerves of motion and sensation, rest for the nerves controlling secretion and digestion, and rest for the nerves of special sense would include the objects chiefly aimed at in the treatment of this severe lesion. In regard to prevention the importance of calcification as a factor in arterial degeneration suggested the avoidance so far as possible of lime salts by all above middle age. Mineral waters containing lime were especially dangerous, as they also contained free carbonic acid, which rendered it more soluble. Still more dangerous were medicines containing lime salts.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A clinical meeting of this society was held on April 12th, Dr. Augustus H. Hampton being in the chair.—Dr. A. G. Barrs and Mr. R. Littlewood showed a case in which a tumour pressing on the spinal cord at the level of the ninth dorsal vertebra, and causing complete paraplegia, was removed by laminectomy. Sensation in the limbs returned as soon as the patient regained consciousness after the operation; in a fortnight there was perfect control over the sphincters and improvement was still proceeding.—Mr. A. L. Whitehead showed a case of extensive Mastoid Disease with extradural abscess and much external pachymeningitis successfully operated upon. There had been an old-standing otorrhœa but the acute condition supervened upon an attack of influenza.—Mr. R. L. Knaggs showed a case of Duodenal Fistula in the right loin in a girl aged 17 years. In August, 1906, she had an acute attack of abdominal pain; from October, 1906, to January, 1907, she had pyrexia and induration in the right psoas region. This was opened and was thought to be a psoas abscess, until two months later food began to come through the fistula shortly after being swallowed. For various reasons the fistula was regarded as being probably of duodenal origin, an opinion concurred with by the meeting.—Mr. J. F. Dobson showed a case of Spinal Caries treated on a Bradford's wire frame for six months with much improvement.—Dr. W. H. Maxwell Telling showed two cases of Anæmia Splenica Infantum in twins; also a third case in which complete recovery had taken place. He also showed a case of Chronic Favus refractory to the ordinary treatment for ten years. It was proposed to treat it by the application of x rays.—Dr. J. Gordon Sharp showed a girl, aged five years, in whom Motor Aphasia with Left Hemiplegia developed subacutely. The patient was right-handed. In two months right hemiplegia was ushered in by a convulsion. The right side was now well but some weakness of the left side persisted.—Mr. T. H. Fox exhibited a Cretin showing marked improvement under thyroid treatment continued for three years. The case was interesting in that a particular brand of tabloids produced improvement for six months and then became inactive. A similar result was obtained with

aged 35 years, was admitted into the Stanley Hospital five weeks after a difficult confinement suffering from pain in the chest, pyrexia, and cough. Ten days before admission she had a rigor and pain in her left side. Exploration of the chest gave a negative result. Later the spleen was found to be enlarged, the temperature remained elevated, and there was leucocytosis. The Widal reaction was negative. Exploration on two more occasions failed to locate pus, but finally it was found below the costal margin and the abscess was drained. The patient died the next day. The necropsy revealed an empyema in front of the root of the right lung adjacent to the pericardium. The pus had travelled down through the diaphragm and formed a subphrenic abscess. The recent delivery, the rigors, the continued high temperature, the normal position of the apex beat, the enlarged spleen, the severe anemia, and the failure to strike pus all added to the difficulties. The third patient was a man, aged 36 years, suffering from marked dyspnoea, cough, recurring hæmoptysis, and cardio-pulmonary murmur audible at the mouth, but with slight physical signs. He had contracted syphilis when aged 27 years. He first began to suffer from lung symptoms five years ago. The x rays showed some fibrosis, especially at the root of the right lung, but the apices were clear; the right side of the diaphragm was limited in its movements. There was no history of night-sweats or of any abnormal temperature and there was no expectoration. Under treatment by mercury and potassium iodide the dyspnoea had greatly diminished, the cough had almost disappeared, and the man's weight had increased, but the cardio-pulmonary murmur remained unaltered.—Dr. T. R. GLYNN referred to a case of actinomycosis apparently commencing in the lung. The patient was an elderly man whom he had seen with Dr. R. Thacker King. The early symptoms were harassing cough with expectoration of blood and sanguineous mucus; a tumour in which the ray fungus was found subsequently formed on one of his legs. The mode of infection was not discovered.—Dr. T. R. BRADSHAW, in discussing Dr. Warrington's cases, drew attention to the difficulty of distinguishing between empyema at the apex and a pulmonary abscess pointing in the same situation. He narrated the case of a man who had pneumonia of the right apex. After a week fever was noticed in the breath for one day. A few days later a prominence was noticed below the right clavicle and on being punctured it yielded foetid pus. Operation showed that the abscess was in the lung and that it contained a large slough which was removed. Recovery was satisfactory.—Dr. N. P. MARSH, Sir J. BARR, Dr. R. J. M. BUCHANAN, Dr. G. A. CRACE-CALVERT, Mr. R. W. MURRAY, Mr. T. O. LITLER JONES, and the PRESIDENT also took part in the discussion.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Exhibition of Cases and Specimens.—Addison's Disease.—Cerebro-spinal Fever.

A MEETING of this section was held on April 5th, Dr. JOSEPH M. REDMOND, the President, being in the chair.

Dr. DEMPSEY exhibited a case showing Unusual Nervous Symptoms which he regarded as the result of multiple spinal sclerosis.

Dr. WILLIAM A. WINTER showed a man suffering from Aneurysm of the Thoracic Aorta. There was loss of voice owing to paralysis of the right vocal cord. There were no other physical signs except a limited area of dullness on percussion and some difficulty in deglutition. On examination with x rays a definite pulsating tumour could be seen to the left of the sternum.

Dr. ALFRED R. PARSONS read a paper on Pseudo-renal Colic. It was an account of a case which had long defied diagnosis but had ultimately been correctly diagnosed as an aortic aneurysm. The specimen was exhibited.

Dr. DEMPSEY read an account of a case of Addison's Disease of unusually short duration.

Dr. GEORGE PEACOCKE read a paper on Cerebro-spinal Fever occurring in a Child the subject of Lymphatism. The patient, who was a girl aged five years, died 11 hours after the onset of the symptoms. The chief symptom consisted in repeated attacks of convulsions. There was only slight retraction of the head. Kernig's sign was absent. There

were several purpuric spots of irregular size present on the legs and arms. The necropsy revealed the presence of lymphatism characterised by enlarged and bulky thymus gland, enlarged mesenteric glands, hypertrophied Peyer's patches and solitary follicles, and prominence of the Malpighian corpuscles on section of the spleen. Cerebro-spinal fluid removed by lumbar puncture after death was turbid, the turbidity being due to leucocytes. Weichselbaum's meningococcus was found.—Dr. T. P. O. KIRKPATRICK asked if a diagnosis of the condition of lymphatism had been made before death and if there was any way by which it could be recognised. He said that the condition had been found in a number of cases in which sudden death had occurred during the administration of anaesthetics for operations and the diagnosis of lymphatism before death was a matter of practical importance.—Professor ARTHUR H. WHITE said that, in his opinion, it was possible that the condition of lymphatism was connected with the question of infection. Most of the patients who died from cerebro-spinal meningitis had had trouble with adenoids and a good deal of lymphoid tissue at the back of the nose, and it was possible that they became infected in that way. The organisms existed in some healthy people. At the back of the nose there were many kinds of diplococci, several of which were difficult to distinguish from the organism found in cerebro-spinal fever. The only case in which he had seen a necropsy made during the present outbreak had the condition which Dr. Peacocke called lymphatism.—Dr. PEACOCKE, in reply, said that the idea of lymphatism did not occur to him during the patient's life. The symptoms before death were practically nil and the only physical sign likely to be detected would be the presence of a very large thymus showing dullness.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held at Manchester on April 19th, Dr. E. O. Croft (Leeds), the President, being in chair.—Dr. D. Lloyd Roberts (Manchester) exhibited a Malignant Ovarian Tumour removed by abdominal section from a multiparous widow, aged 65 years. The menopause had occurred 20 years before and an abdominal swelling had been noticed for eight months. There had been no pain or loss of flesh. The physical signs were those of an ovarian cyst with ascites. On account of the enfeebled condition of the patient a preliminary paracentesis abdominis was performed followed by ovariectomy four weeks later. The opposite ovary was cystic and was therefore also removed. Recovery was uneventful. Microscopically the growth was an adeno-carcinoma.—Dr. W. E. Fothergill (Manchester) showed Compressed Swabs for Use in Abdominal Sections in Private Practice.—Dr. W. Blair Bell (Liverpool) showed a specimen of Sarcoma of the Ovary removed from a woman, aged 55 years, 6 para, and who was nine years past the menopause. Microscopically it was shown to be a large spindle-celled sarcoma, the cells composing the tumour having large oval nuclei. There was a somewhat unusual amount of intercellular substance.—Dr. Arthur J. Wallace (Liverpool) related a case in which a large Fibroid had been Removed with the Uterus from a woman, aged 53 years. The tumour had burrowed between the layers of the left broad ligament and up beneath the peritoneum covering the posterior wall of the abdomen, and during operation the lower part of the descending colon and its sigmoid flexure had to be stripped off the growth. 40 hours after operation the patient began to have a continuous discharge from the rectum of dirty, watery, slimy fluid, very occasionally streaked with blood. All general and local remedies proved ineffective, the discharge persisting until the sixteenth day. Dr. Wallace was inclined to think that the cause of the condition was damage to the nervous supply of the colon during operation, with resulting vaso-motor paralysis and trophic disturbances in the wall of the bowel involved and sepsis within its canal. Six weeks after operation a temperature of 104° F. suddenly developed and for a week it was rarely below 100°. The patient's general condition steadily improved during this time and no cause could be discovered for the high temperature. The operation wounds had healed by first intention and there had been no return of the diarrhoea. Now, in four months after the operation, the patient was in good health but she still had elevations of temperature for which there was no apparent cause.—Dr. Arnold W. W. Lea (Manchester) related a case of Bilateral

Morgagni.—Dr. H. J. Davis exhibited a boy, aged 12 years, who, according to his mother's statement, had never spoken. The boy was unable to protrude the tongue. He was very intelligent and he heard and understood perfectly. He could hum songs in tune but could not speak a word (aphemia). At the age of three years, it was stated, he had right hemiplegia.—Dr. J. Bonelan exhibited a patient with Destruction of the Columella of the Nose occasioned either by syphilis or by lupus. In view of there being some evidence of active disease he decided to observe the case a little longer before doing anything of a surgical nature.—Dr. J. Dandas Grant exhibited a case of Pharyngo-keratosis (mycosis) improving under application of salicylic acid in sulpho-riolate of soda. The patient had been under this treatment for 12 months.—The President said that he had tried salicylic acid for mycosis but that he did not have much faith in the treatment.—Dr. F. de Havilland Hall commented on the way that keratosis, like warts elsewhere, would sometimes clear up in an astonishing way.—Sir Felix Semon inquired why keratosis should be treated at all locally, inasmuch as it always got well of itself. He hoped the profession would recognise that keratosis occurred when the patient was run down, and that it would disappear under a change of air and tonic treatment and that no local treatment was necessary.—Dr. Grant, in reply, expressed himself in agreement with Sir Felix Semon. He had put before the patient the fact that the appearance of the throat was of no significance, and he thought the discomfort that the patient had gone through in using the remedy was out of proportion to the result. He would not recommend the treatment in every case of the kind.—Dr. W. Jobson Horne exhibited a macroscopic specimen of Lympho-sarcoma of the Mediastinum. The growth had caused extensive obstruction, almost obliteration, of the oesophagus without any breach of the mucous membrane. The larynx presented oedema localised to the right arytenoid region; immediately below the oedema, in the fold passing down between the cartilages of Santorini and Wrisberg, was a small ulcer. The points of interest were the unusual extent of the oesophageal obstruction and also whether the localised oedema of the larynx was occasioned by local infection or was secondary to obstruction caused by the mediastinal growth.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—

A meeting of this society was held on April 17th, Mr. E. Powell, the President, being in the chair.—Reference was made to the death of Dr. W. H. Ransom, one of the founders of the society, and a resolution of sympathy with the members of his family was moved by the President, seconded by the President-elect, Dr. L. W. Marshall, and adopted unanimously.—Dr. M. Parry-Jones (Derby) read a paper on some cases of Pneumothorax. As far as the causes could be classified 90 per cent. were due to pulmonary tuberculosis, 8 per cent. to gangrene and acute inflammatory conditions, and only 2 per cent. to various rare causes, such as severe pleurisy, empyema, enteric fever, hydatid, or aneurysm. Pneumothorax was very rare as the result of chest injuries, even with fractured ribs or stabs. A case of pneumo-hemothorax the result of injury without any fracture was narrated. The onset of pneumothorax was most variable and the degree of pain present, as well as the displacement of viscera, might be greatly dependent on the presence or absence of adhesions. The signs, too, might be greatly modified by the presence of fluid effusion, and in this way the tympanic area might vary in pneumothorax, which was not the case in a large vomica. In the more severe cases death might occur rapidly from shock and exhaustion, in more favourable ones the air might be rapidly absorbed without any further complication, but, on the other hand, the pneumothorax sometimes became chronic or was accompanied by serous effusion, while the pleuritic effusion might quite overshadow the pneumothorax or even rapidly become empyema. A man, aged 28 years, was shown (by Dr. Parry-Jones) illustrating apparently complete recovery from acute pyo-pneumothorax. Pus was found within a few days of the onset and the chest promptly opened. Progress was unsatisfactory, so portions of two more ribs were removed and the wound freely opened up. The drainage seemed good, but at the upper part of the space a large opening in the lung came into view leading into a vomica, from which foul pus was discharging. A drainage-tube was therefore inserted into the lung. From this time his recovery was rapid and the lung had expanded well, while there were no abnormal sounds audible.

He had gained weight, felt well, and was at work.—The paper was discussed by the President, Dr. J. H. Johnston, and Dr. F. H. Jacob.—Mr. J. C. Sale (Skegness) mentioned the case of a girl who had come under his notice where there had been 11 separate attacks of pneumothorax, and Dr. Parry-Jones replied.—Dr. Jacob read a few notes on the Treatment of Ringworm by the X rays. He showed Sabouraud's pastilles, by the aid of which epilation by one exposure was rendered safe. Reference was also made to its treatment by copper ions.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—A meeting of this society was held on April 19th, Dr. O. W. Chapman being in the chair.—Dr. Chapman read notes on two cases of Glandular Fever in a mother and child.—Dr. T. R. O. Whipham showed a girl, aged eight years, who was the daughter of alcoholic parents and had developed deafness, stuttering, stridor, transient ptosis and anæsthesia, and some atrophy of the tongue. She was hypersensitive and emotional. The diagnosis lay between neurosis and disseminated sclerosis.—Dr. Whipham also showed a girl, aged 11 years, with Adherent Pericardium and Aortic and Mitral Regurgitation, due to acute rheumatism 18 months previously.—Dr. Fletcher Beach showed a boy, aged six years, with fibrous nodules over the right eye and occiput, atrophy of the left side of the face, marked curvature of the dorsal spine, and large pigmented areas on the abdomen and back. The case was considered to be von Recklinghausen's disease.—Dr. J. Porter Parkinson showed a girl, aged two and a half years, with Right Hemiplegia and Motor Aphasia. The power of speech was gradually returning after having been completely lost for a month.—Dr. F. J. Poynton showed a case of Addison's Disease in a girl, aged nine years. She had suffered from vomiting, lassitude, and fainting attacks for a year and from pigmentation of the face for a month; there was some pigmentation of the mucous membranes and the blood pressure was only 60 millimetres of mercury, but there was no anæmia.—Mr. Duncan C. L. Fitzwilliams showed the following cases and specimens: 1. A case of Multiple Abscesses in a child nine months old. There were 27 abscesses on the head, body, and limbs; a few had burst; there was no history of syphilis. 2. A girl, aged 11 years, with Congenital Absence of the Left Arm. The bones and muscles of the shoulder girdle were well developed. There was spinal curvature due to the unbalanced weight of the right arm. 3. A Siren Fœtus with a Normal Pelvis, but a solitary lower extremity, containing a thick femur below which were two partially separated bones; the bones of the paddle-like foot were normal.—Mr. G. Pernet showed a case of Erythema Iris in a child, aged three years, due to intestinal intoxication, and a case of Erythema Papulatum Hemorrhagicum in a girl, aged 15 years, stated to be a vegetarian.—Mr. Francis Jaffrey exhibited an infant, aged six months, with a Cartilaginous Tumour attached to the whole length of the nasal septum, blocking the left side of the nose and bleeding freely.—Dr. J. H. Tallent showed a child, aged two and a half years, with Double Retained Testes. When he was six weeks old a swelling appeared in the right groin but disappeared again in about five minutes, and this swelling had frequently been noted subsequently.

THERAPEUTICAL SOCIETY.—A meeting of this society was held on April 16th, Dr. T. E. Burton Brown, the President, being in the chair.—Dr. George Oliver read a paper upon Some Notes on the Control of Supernormal Arterial Pressure. He gave the leading results of his clinical observations on the management of a persistent rise in the arterial pressure by diet, baths, electricity, and other remedies. He indicated some practical suggestions furnished by physiology in the selection of apressor remedies for less or more continuous use and stated his further favourable experience of the benzene derivatives, at the same time showing that their control over persistent increments of arterial pressure was limited to the case in which the pressure rise was moderate and the vaso-motor play of the peripheral arteries was not seriously impaired.—Sir Lauder Brunton considered Dr. Oliver's paper very valuable. He thought that in cases of very high tension absolute rest in bed with quiet of body and mind was indispensable. With perfect rest, vegetarian diet, and the steady use of nitrates even cases of exceedingly high tension might be successfully treated. A salt-free diet might be useful in cases of very high tension, but it could not be continued for a length of time as it was so

another preparation; on reversion to the first a like result followed. This has happened throughout the case.—Dr. T. Churton showed a case of Anæmia Splenica Infantum in a child the subject of congenital syphilis. The spleen was enormously enlarged and five distinct notches could be felt in it. He also showed a case of Splenic Anæmia in a man of 30 years. The anæmia was of the secondary type; there had been three severe attacks of hæmatemeses during an 18 months' history.—Dr. E. F. Trevelyan showed a series of cases of Tabes, illustrating various typical and atypical features of the disease.—Dr. T. Wardrop Griffith showed a case of Ataxia of sudden onset and rapid progress. The disease commenced on Feb. 27th and rapidly spread to the arms, increasing in the legs. The Babinski phenomenon was present and varying areas of anæsthesia were present in the legs but there was no other abnormal sign. The case was regarded as probably one of disseminated sclerosis.—Mr. H. Collinson showed a case of Removal of Half the Tongue by Whitehead's method, three and a half years ago. The sub-maxillary and deep cervical glands were removed at the same time. So far there had been no recurrence.—Mr. Michael A. Teale showed a series of cases exhibiting Disorders of the Mobility of the Iris.—Mr. H. Secker Walker showed a case of Dermoid Cyst of the Eye and Supernumerary Auricles. He also showed a case of Xerosis of the Conjunctiva.—Dr. Alexander Sharp showed two cases of Tuberculous Laryngitis in the catarrhal stage.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held on April 17th, Dr. Edward Malins being in the chair.—Dr. Walter R. Jordan showed a father and two children (boy and girl) with a condition of Congenital Keratoderma affecting the Palms of the Hands exclusively. The father's father had been similarly affected. A brother of the father and a third child of the father were entirely free from the condition.—Mr. L. P. Gamgee showed a woman, aged 24 years, who for eight years had suffered from symptoms of Gastric Ulcer. She had had two attacks of hæmatemesis. The symptoms had been relieved by medical treatment but there had been a relapse each time. On July 25th, 1906, an anterior gastro-jejunostomy was done by stitching. Within half an hour of the patient's return to the ward severe hæmatemesis set in, three pints of blood being vomited within the first 24 hours after operation. This ceased and then at the end of ten days it became evident that a vicious circle had been formed, large quantities of bile-stained fluid being frequently vomited. On Oct. 20th a lateral anastomosis was done between the piece of jejunum passing up to, and that passing down from, the junction with the stomach. This resulted in cessation of the vomiting till Feb. 13th, 1907, when vomiting recurred. On March 4th the abdomen was re-opened and it was found that the jejunum, at a point just over the seat of the lateral anastomosis and at another point six inches below this, was bound down by dense adhesions. These were divided and the patient had been perfectly well ever since.—Dr. J. Douglas Stanley showed a girl, aged 12½ years, who first came under observation when ten years old on account of typical Raynaud's Disease and Rheumatoid Arthritis. At that time the joint lesion was slight. The patient was deficient in weight and stature and her mental condition was much under the average. During the two and a half years the Raynaud's disease had improved but the arthritic lesions had advanced, the hands especially showing typical characters of rheumatoid arthritis. The height and weight were now 3 feet 10½ inches and 30½ pounds. There was no evidence of enlargement of the spleen or lymph glands. Dr. Stanley discussed the possible connexion between rheumatoid arthritis, Raynaud's disease, and myxœdema.—Dr. J. G. Emanuel showed a Heart in which there was practically a Single Ventricle (the right ventricle) into which the mitral and tricuspid valves opened and from which arose the aorta anteriorly and the pulmonary artery posteriorly. Close to the opening of the aorta was a foramen which led into a small potential cavity in the wall of the ventricle, and with this cavity the aorta communicated. This therefore represented a rudimentary and functionless left ventricle and the foramen of communication between it and the right ventricle was the patent pars membranacea septi. The interauricular septum was complete. The aorta septi. The interauricular septum was complete. The aorta at its origin lay anterior to the pulmonary artery and externally there was but an imperfect separation of the aorta from the pulmonary artery. This malposition of the great vessels was explained by an irregular descent of the septum which should completely divide the primitive arterial bulb

into aorta and pulmonary artery. All the valves were well formed; the foramen ovale was closed; the ductus arteriosus was obliterated. The specimen was from a male infant, aged 20 months, who died from thrombosis of the right pulmonary artery with multiple infarcts in the corresponding lung. During life there were no cyanosis and no clubbing. The symptoms were sudden syncopal attacks. There was no thrill but a loud systolic murmur was audible all over the præcordium.—Mr. A. W. Nuthall showed a case of Mongolian Idiocy, exhibiting typical characteristic features.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on April 19th, Dr. J. R. T. Conner, the President, being in the chair.—Dr. Alexander Morison read a paper on the Nature and Management of Hypertrophy of the Heart. He said that when the heart dealing with an obstacle in the normal and easy transmission of blood hypertrophied, in just proportion to the additional work thrown upon it, it was said to be "compensated." But such a condition of "compensation" was one of a more or less uncertain state of equilibrium between obstacle and heart power and this uncertainty was proportionate to the character of the obstacle. There were certain conditions in which the compensatory hypertrophy overstepped the limits of beneficial increase. This was, no doubt, because the degree of embarrassment in the circulation was of more than average severity. It was the cor bovinum—a heart hypertrophied in a degree beyond the average—which exemplified that degree or condition of cardiac hypertrophy which ceased to be beneficial in compensation and became from its bulk an added intrathoracic embarrassment to the circulation of the blood. The effect of excessive effort was, naturally, exhaustion, and in the production of this result several factors—hæmic, neural, and muscular—were operative. That the disabled heart, sufficiently "compensated" by the hypertrophy provoked by its condition, might efficiently do its work for lengthened periods in circumstances of considerable stress and strain was a common experience. It followed, therefore, that no more injudicious course could be taken with the patient than that of rendering him "nervous" about the condition of his "heart" or so hedging him about with restrictions as to suggest that little lay between him and dissolution. Rest of body and mind, regulation of food, and cardiac tonics were indicated, whether hæmic, neural, and muscular, or these combined, and later graduated exercises by baths, gymnastics, or walking. But as time advanced and hypertrophy increased, giving way later to dilatation, and they had a large ineffective organ pulsating in the thorax and crowding neighbouring organs directly and indirectly, the question arose whether anything else could be done to render cardiac action more easy and to relieve the patient for a longer or shorter period. They were all aware of the baneful influence upon the circulation of removeable accumulations within the chest, such as air, serum, pus, or blood, accumulations that is, which by their pressure "crowded" the heart and hampered it in its easy and free movement. They might legitimately, therefore, surmise *a priori*, that when the central organ took the initiative in congesting and encroaching upon the lungs, relief of intrathoracic pressure by costal resection might also in some cases be beneficial. Dr. Morison thought that he would be justified on the first available opportunity in putting these views to the test of experience.—Dr. David Ross showed an improved Chest-piece for Binaural Stethoscopes which he had been using for several months.—The following office-bearers were elected for the session 1907-08:—President: Dr. W. Langdon Brown. Honorary secretary: Dr. David Ross. Honorary treasurer and curator: Dr. B. G. Morison. Council: Dr. J. R. T. Conner, Dr. Leslie Durno, Mr. G. Angus Hunt, Mr. W. Campbell McDonnell, and Dr. J. S. Risien Russell.

LARYNGOLOGICAL SOCIETY OF LONDON.—A meeting of this society was held on April 5th, the President, Dr. J. B. Ball, being in the chair.—Dr. St. Clair Thomson exhibited a man, aged 29 years, who had been shown at the previous meeting on account of a Malignant Shown at the previous meeting on account of a Malignant Endo-laryngeal Growth. Since then an operation had been performed for its removal, and a section of the growth was exhibited. 'As some of the members were unable to satisfy themselves that the growth was of a malignant nature it was decided to refer it to the Morbid Growths Committee for a further opinion. The interest of the case rested in the early age of the patient.—Dr. Thomson also exhibited a woman, aged 50 years, with Prolapse of the Ventricle of

diagnosis, the patient being a lady who had lived in China for 11 years and during the past year had developed a pigmented eruption upon the neck, arms, legs, and abdomen. There was no history of any preceding eruption; there were no subjective symptoms except moderate itching; the mucous membranes were not involved. No swellings or alterations in the nerve trunks could be detected. It was considered impossible to come to any decision as to the character of the eruption in its present condition.—Dr. Colcott Fox showed a case of *Lupus Vulgaris* dating from an attack of measles at the age of two years. The patient was a boy now aged ten years and he had recently developed a follicular eruption, which the exhibitor was inclined to regard as a miliary tuberculide of the nature of *lichen scrofulosorum*.—Dr. H. G. Adamson showed a child with a Reddened Shiny Soft Congenital Tumour of the size of half-a-crown. In some respects this resembled a lymphangioma, but the consensus of opinion favoured the diagnosis of soft mole.

MEDICO-LEGAL SOCIETY.—A meeting of this society was held on April 16th and was devoted to toxicology. Mr. Walter Schröder presided.—Professor H. Harvey Littlejohn described three cases of Fatal Poisoning by Strychnine, including the recent "Cumnock shortbread poisoning case." It appeared that in each of the cases consciousness was present during the convulsions. Professor Littlejohn also described a Fatal Case of Poisoning by Potassium Bichromate. The necropsy was performed six hours after death while the blood was unreduced and contained met-hæmoglobin which gave the skin the characteristic hue.—Dr. W. H. Willcox, Dr. W. Scott Tebb, and Dr. S. B. Atkinson discussed these cases.—Dr. Scott Tebb described a Fatal Case of Poisoning by Oxalic Acid, and gave a short historical account of the use of this poison.—The next meeting will be held on June 18th, when Dr. O. H. Wise will give a paper on *Facts and Opinions in Medical Practice*, and Dr. Willcox will describe a Case of Gunshot Wounds (illustrated by specimens).

MANCHESTER CLINICAL SOCIETY.—A meeting of this society was held on April 16th. Dr. J. F. Le Page, the President, being in the chair.—Dr. G. H. Lancashire read a paper on Tuberculous Skin Affections. The common bacillary types of disease were described, especial attention being paid to lupus vulgaris and its treatment. It was pointed out that there was still considerable scope for caustic methods of treatment in lupus, amongst the best caustics for this purpose being a saturated solution of zinc chloride, of pyrogallol or of potassium permanganate. The last Dr. Lancashire employed in the form of powder, which was packed into holes made in the nodules by means of a wooden skewer, the powder being afterwards moistened. In this way several nodules could be treated at a sitting, a local anæsthetic being preferably used. Diseases of the so called *toxi-tuberculides* type were also described and a case shown which was held to be a *papulo-necrotic toxi-tuberculide*.

Reviews and Notices of Books.

The Prophylaxis and Treatment of Internal Diseases. By F. FORCHHEIMER, M.D., Professor of Theory and Practice of Medicine and Clinical Medicine, Medical College of Ohio, Department of Medicine of the University of Cincinnati; Physician to the Good Samaritan Hospital London: Sidney Appleton. 1906. Pp. 652. Price 21s. net.

THIS work is designed for the use of practitioners and of advanced students of medicine and the author has carried out his task with success, embodying in his remarks the results of 30 years' experience in hospital and private practice. In dealing with the treatment of the various diseases he mentions those methods first which he himself has found most serviceable, subsequently describing other measures recommended by accepted authorities. The directions suggested for prophylaxis are such as can be readily carried out in private practice and the most modern therapeutic systems of all kinds are fully considered. Thus much space is devoted to hydrotherapy, gymnastics, exercises, and diet, always with a view to their adaptation to

private patients. When the requirements are so expensive or elaborate as to necessitate a special establishment certain resorts are suggested where such can be satisfactorily obtained. Surgical methods are referred to mainly from the point of view of the physician and unless there is some special object for so doing no reference is made to the technique of operations. We have perused the work with much pleasure and have found Dr. Forchheimer's recommendations and suggestions fully trustworthy and up to date.

In describing the treatment of typhoid fever hydrotherapeutic measures naturally take first place, for in America the employment of baths is more common than in this country. Brand's method, a combination of baths and massage, has yielded excellent results. The advantages claimed are that the course of the disease is shortened, the nervous symptoms are controlled, the circulation is improved, the condition of the mucous membranes is changed for the better, and lastly, the mortality is diminished. We are not aware that a full trial has been given to this method in England, but it would be interesting to ascertain whether the results of such a course would compare favourably with the means now generally adopted. The remarks on the prophylaxis of tuberculosis are well worthy of attention. Dr. Forchheimer lays stress on the importance of popular teaching in the fight against the disease. This tuition must be given lucidly, for, as he says (and we are entirely in accord with him), much harm may be done to the tuberculous individual if the chances of prevention of the disease are not stated clearly and forcibly. We quote the author's own words: "Fear is best controlled by knowledge, and our knowledge of tuberculosis is positive as to its prevention. The danger in the popular conception is exaggeration, which in this case makes a leper of the patient, destroys his utility, and frequently deprives a whole family of its natural supporter." This argument has been strongly urged against the proposals for compulsory notification, and in our opinion is a weighty one and needs careful consideration before mandatory legal measures are generally adopted.

The author's views on the treatment of pleurisy with effusion differ somewhat from those which are usually held by English physicians. He maintains that when effusion is the result of primary pleurisy paracentesis is always indicated. "It matters not," he says, "whether the level of the fluid reaches the top of the first or the fifth rib; whether the patient is in immediate danger or not." He refers to the fact that the older clinicians laid down the rule that there should be no operation when fever was present. Dr. Forchheimer then remarks: "When there is great dyspnoea or the fluid collects very rapidly so that there is danger of suffocation, the operation should be done at once; otherwise the subsidence of inflammatory symptoms may be waited for; but even here I aspirate early, whether the effusion is large or small, my own experience having taught me that aspiration when a patient has fever is not followed by a re-accumulation of fluid. On the contrary, more frequently aspiration acts in the same way as would the opening of an abscess; the fluid disappears and the fever with it." These remarks are interesting and worthy of full consideration. There is a tendency on the part of some practitioners to postpone operation as long as possible in the hope that the fluid will be reabsorbed. The author deprecates this course of action. He considers that the early removal of fluid prevents the formation of adhesions. The importance of attempting to prevent adhesions is obvious, as they play an important rôle in the production of bronchiectasis, chronic pneumonia, and deformities of the chest. If early withdrawal of the fluid will tend to prevent such sequelæ then certainly it should be adopted. Dr. Forchheimer also very rightly lays stress on the necessity of regulating the

ksome. Salt might be to a considerable extent replaced by sugar in the dietary. The modern treatment of high tension by nitrites and nitrates had been recommended by the great Bacon in the time of Elizabeth, as the only remedies he recommended for prolongation of life were nitre and blood-letting. The nitre he employed probably contained a quantity of nitrates and blood-letting as a remedy which had fallen too much into disuse and in cases of high tension might be employed again with advantage. He showed von Basch's instrument as modified by Potain for estimating blood pressure and also combination of this instrument with Riva Rocci's armlet. —Dr. Herbert S. French reminded the society that cases of very high blood pressure occurred even amongst those who were at the same time vegetarians, non-smokers, and life-long abstainers. —Dr. Oliver, in reply, agreed that rest in bed would diminish the high blood pressure even in the worst cases, but this was owing to a diminished call upon the cardiac end of the circulation. In those who were obliged to work the ventricle factor could not be diminished and such cases seldom reacted to depressor drugs so long as they remained up and about. He thoroughly approved of the revival of venesection for such cases.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 6th, Dr. J. Walker Lowrie, Vice-President, being in the chair. —Dr. Albert A. Gray showed the Temporal Bones of a patient who suffered from serous catarrh of the middle ear. Both tympana were all of gelatinous pearly-grey material. The membranes were adducted but not perforated. The mucous membrane of the tympanum and antrum was softened and friable. The stapes was moveable. The exudation filled up the middle ear, antrum and mastoid cells, and attic. This case explained the frequent absence on the membrane of any line of demarcation between the lower part of the tympanum which was filled with fluid and the upper air-filled part. —Dr. H. Wright Thomson showed cases illustrating Skin-grafting in Ectropion, Symblepharon, and Rodent Ulcer. The skin flap was mapped out and rapidly removed along with the subcutaneous fat, which was afterwards removed with curved scissors. The cases were greatly benefited by the operation. —Dr. G. T. Beatson reported a case of Translucido Asphyxia. The patient, who was a man, aged 24 years, was crushed by a pit cage, the compression being antero-posterior and the shoulders being crushed downwards and forwards. On admission to hospital two hours after the accident there was intense congestion of the head and neck, almost petechial in character but not affected by pressure. There was also considerable oedema around the eyes and mouth. There was some proptosis indicating hæmorrhage into the orbit. There was no fracture. In three days the congestion and discoloration had faded and by the eighth day were only present in the forehead and now yielded to pressure. There was discoloration around the eyes and nose as in an ecchymosis. This also soon disappeared. —Professor John Glaister referred to the importance of such cases from a medico-legal aspect and referred to some cases which had occurred by crushing in a crowd. —Dr. George H. Edington, Dr. Somerville, and Dr. A. Young referred to other cases. —Dr. Young gave a lantern demonstration illustrating a Modification of the Wolfe-Krause Method of Skin-grafting. The whole skin and fat were rapidly removed and placed in sterile saline solution. The wound was then stitched up. The raw surface was then prepared for the grafts, which were then made ready by removing the fat and cutting them into suitable pieces. A layer of protective gauze was then applied and a moist boric or saline dressing was put on. The moist dressing was changed daily but the gauze was not removed for several days.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—A meeting of this society was held at 20, Hanover-square, on April 10th, Dr. Frederic Bagshawe (St. Leonards-on-Sea) being in the chair. —The adjourned discussion on "The Present Position of the Treatment of Tuberculosis in Marine Climates," which was introduced by Dr. William Ewart at Hastings on March 16th, was resumed by Dr. Alfred F. Street (Westgate-on-Sea). He said that the weight of evidence was on the side of those who contend that pulmonary catarrh is essentially microbic in origin and that it always owns a factor other than mere cold. The humidity of marine climates was usually a tolerable humidity, for humidity must always be considered in relation with temperature, the really important point being

the amount of moisture which could still be absorbed before saturation was reached. The climate of the north coast of the Isle of Thanet had long been recognised for its favourable influence in cases of tuberculosis, especially those amenable to surgery, but its precise factors were not yet discovered. Cases of locally originated tuberculosis were rare there. Hæmoptysis might be relatively more frequent at the seaside than inland and there was need for abundant open-air shelter. As maintained by the opener of the discussion, the more extensive and more systematic use of our marine climates was strongly indicated. —Dr. E. Solly (Harrogate) alluded to the beneficial influence of variety of scene to all who were obliged to seek health under the necessarily restricted conditions of a sanatorium life, and in this respect a "sea view" offered advantages which no inland station could afford. —Dr. S. D. Clippingdale expressed the view that a case of phthisis in any stage of the disease did better in a bracing climate than in a relaxing one. —Dr. Leonard L. B. Williams said that it was necessary to draw distinctions between various kinds of marine climates. It depended upon the type of tuberculous person which of these climates should be recommended. —Dr. Ewart, in reply, explained that the bacilli could not be directly influenced by such slight oscillations of temperature or such moderate variations of climate as occurred within the temperate zones. But to their host these influences made all the difference. He entirely agreed with Dr. Street and other speakers as to the unequalled value of the bracing climate of Thanet, but it was liable to be too "strong" for the more advanced cases of phthisis, although invaluable in the early stage and in surgical tuberculosis.

INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this society was held on April 12th, Dr. D. S. Davies, the President, being in the chair. —Dr. J. Wright Mason read a paper upon the Inspection of Food at our Ports. He said that there was no universal method for examining imported cargoes of food-stuffs, only two authorities, those of London and Manchester, having special powers of examination vested in them. Under these powers the examination is conducted immediately upon arrival and before the food-stuffs are deposited or exposed for sale. Elsewhere food-stuffs are only examined after being landed and deposited for sale. This anomalous position would be remedied by the Public Health (Regulations as to Food) Bill now before Parliament. Dr. Mason said that, in his opinion, an inspection before being landed or before leaving the docks would not only be beneficial from a public health point of view, but would also be some guarantee to the public generally that they are being more fully protected. The power to inspect a ship's cargo consisting of food-stuffs before or when being landed would enable an inspector to satisfy himself as to whether the cargo had been stowed in a proper manner so as to avoid the cargo being damaged, or whether injury had arisen owing to the proximity of other and objectionable cargo. With regard to tinned foods Dr. Mason was strongly of opinion that they should be required to bear the name and address of the manufacturer and the date when packed. He urged the importance of providing suitable warehouse accommodation for the purpose of examining and sorting cargoes of food-stuffs of a doubtful and perishable character. —In the course of the discussion which followed the President emphasised the importance of uniformity in methods of examination at the various ports of entry, for importers would divert traffic from those ports where stringent measures were enforced. —Dr. E. W. Hope pointed out that stricter examination at the ports would not absolve inland sanitary authorities from the obligations at present placed upon them.

DERMATOLOGICAL SOCIETY OF LONDON.—A meeting of this society was held on April 10th, Dr. T. Colcott Fox being in the chair. —Dr. Wilfrid S. Fox showed a case for diagnosis. The patient was a man, aged 42 years, who had had syphilis 14 years previously. He had lived much in South America, where the disease for which he was shown had appeared about six years ago. He was now extensively covered with a small papulo-pustular eruption which was particularly marked on the back of the thighs. These lesions recalled the papulo-pustules of acne scrofulosa and a section from one such lesion showed a losorum and a section from one such lesion showed a cellular infiltration about the blood-vessels with numerous plasma cells, an appearance which was suggestive of tuberculosis. The general opinion was in favour of a diagnosis of tuberculides. —Dr. E. G. Graham Little showed a case for

etiological agency to these conditions and in this respect the authors rightly assume a conservative attitude. Nevertheless, in the present relations of civilised life, physiological functions are carried out in a highly artificial environment and are liable to react adversely upon a debilitated organism. The authors have wisely interpolated a chapter upon the theory of menstruation and have described briefly the little which is known or conjectured about the effects of the process upon the blood and upon the general system. The facts elicited tend to support the view that suppression of the normal function causes an auto-intoxication which may induce ocular complications under suitable conditions. We have seen a case of thrombosis of the central vein of the retina in a girl whose sole constitutional defect was a temporary suppression of menses and the association of iridocyclitis with disorders of the sexual apparatus in women is well established. It may be hoped that in the future further researches will be carried out upon the condition of the blood during menstruation and other physiological and pathological states of the sexual organs. There is little doubt that profound changes exist, having important bearings not only upon ophthalmology but upon other branches of medicine.

LIBRARY TABLE.

The Royal London Ophthalmic Hospital Reports. Edited by WILLIAM LANG, F.R.C.S. Eng. Vol. XVII. Part 1. London: J. and A. Churchill.—The present number commences a new volume of these old-established reports. It fully sustains the high reputation which they have gained in the past. Mr. E. Nettleship continues his extremely interesting and valuable researches on the influence of heredity in ocular disease. His paper deals with so-called retinitis pigmentosa and allied diseases. He has collected some astonishing pedigrees from his own experience and from the writings of others. His graphic method of representing his results, familiarised to readers of the reports by his previous papers on cataract, shows the salient points of each pedigree at a glance. Mr. Nettleship rivals Sherlock Holmes in his skill and perseverance in tracking down individual suspects. In his case of retinitis pigmentosa seven generations, including 200 persons, have been traced, with the discovery of 38 members affected by the disease. The paper is one of importance not only to ophthalmologists, who are not likely to overlook any work of this distinguished clinician, but also to those interested in the problems of heredity, for the evidence derived from disease may well be found to play a decisive rôle in the controversy of the rival theories. The paper will be concluded in the ensuing number of the reports. Mr. J. B. Lawford, walking in the footsteps of his sometime colleague at St. Thomas's Hospital, records examples of hereditary primary glaucoma. In one pedigree four generations have been traced, three showing members, five in all, affected with the disease. Mr. George Coats writes upon the Pathology of Macular Holes and an Unusual Form of Cyst of the Iris. Both papers are illustrated by excellent microphotographs. The first is an exhaustive discussion of a condition which can only rarely be elucidated by microscopical examination. The wealth of material which the Royal London Ophthalmic Hospital supplies has provided the curator of the museum with four cases for his valuable investigation. Mr. E. E. Henderson and Miss Janet E. Lane-Clayton report a Study of the Ciliary Epithelium after Puncture of the Anterior Chamber. The paper deals with an experimental and histological investigation of certain points in connexion with the secretion of the intra-ocular lymph, a subject which the first author has previously studied with Professor Starling. Mr. W. Albert Hancock has furnished a thoughtful communication on Head Nodding and Nystagmus. His observations on

spasmus nutans are of great interest; his criticisms of prevalent theories of the disease are chiefly destructive. He rightly distinguishes these cases rigidly from those of congenital head-nodding which are also associated with nystagmus but which do not undergo spontaneous resolution. Dr. T. Harrison Butler discourses upon the Clinical Features, Bacteriology, and Treatment of Acute Ophthalmia in the East, giving an analysis of 5700 cases observed whilst occupying the post of assistant surgeon to the British Ophthalmic Hospital at Jerusalem. We welcome this contribution to the literature of ophthalmology from this noble charity. The author's pathological results are somewhat revolutionary from the standpoint of western investigations and we shall await the confirmation of his experience of the incidence of the various organisms of acute ophthalmia with interest.

Lateral Curvature of the Spine and Pelvic Derivations. By RICHARD BARWELL, F.R.C.S. Eng., Consulting Surgeon, Charing Cross Hospital; Surgeon, Cripples' Home. Sixth edition. London: Baillière, Tindall, and Cox. 1905. Pp. 103. Price 3s. net.—We have reviewed with approbation early issues of this work, but this sixth edition deserves especial notice, as for it the book has been entirely rewritten. The chief idea embodied in this edition is that the starting-point of the greater number of cases of lateral curvature of the spine is an obliquity of the pelvis and as a corollary it must necessarily follow that treatment to be effective should be directed, not merely to the secondarily affected spinal column but to the primary pelvic obliquity. In the chapter on Certain Prevalent Methods of Treatment the author discusses the therapeutic means usually employed and he shows that they may fail to achieve what is desired. The greater part of the book is devoted to treatment, and the methods advocated are described sufficiently fully to enable an estimate to be formed of their value. We are in accord with very much of what the author maintains and we think that he has given a very lucid account in this little book of the great importance of pelvic deviations in the production of lateral curvature. The treatise must prove helpful to anyone anxious to understand fully the production and treatment of these deformities.

The World's Classics. Volume LXI. *The Autocrat of the Breakfast Table.* By OLIVER WENDELL HOLMES. Oxford University Press: Henry Frowde. Pp. 271. Price 1s.—In our issue of April 6th, in reviewing certain volumes of "The World's Classics," we said that the sight of "The Professor at the Breakfast Table" and "The Poet at the Breakfast Table" made us hope that a future number of "The World's Classics" would be "The Autocrat of the Breakfast Table." We now learn that this particular volume was issued quite early in the series and Mr. Frowde has kindly sent us a copy. There is no need at this time to praise these delightful essays, to say nothing of such possessions for ever as "The Chambered Nautilus," "The Living Temple," "The Wonderful One-Hoss Shay," and "Contentment," poems which shine like jewels in the setting of the prose.

Photographic Atlas of the Diseases of the Skin. In four volumes. A series of 96 Plates, comprising nearly 200 illustrations with descriptive text and a treatise on Cutaneous Therapeutics. By GEORGE HENRY FOX, A.M., M.D., Professor of Dermatology, College of Physicians and Surgeons, New York; Consulting Dermatologist to the Department of Health, New York City; Physician to the New York Skin and Cancer Hospital, &c. Vol. IV. London and Philadelphia. Pp. 62 and 24 plates. Price 25s. net each volume.—This is the concluding volume of the present issue of Dr. G. H. Fox's atlas. He is one of the most energetic dermatologists in bringing out atlases of diseases of the skin and they have all been excellent. The use of photography in the portrayal of skin diseases has its limitations, but these

after-treatment of cases of pleurisy with effusion as a large proportion of them have been proved to be tuberculous in origin.

The part of the work dealing with the treatment of diseases of the nervous system (especially the section on epilepsy) will also be found instructive, while the whole book teems with information and practical hints most suggestive for actual practice. The form in which the work is written also adds to its value as rendering it suitable for reference and we can therefore recommend it as a desirable addition to the library for constant use.

Rome as a Winter Resort. By A. G. WELSFORD, M.D. Cantab. With Introduction by G. SANDISON BROOK, M.D. Edin. Rome: 1907.

SINCE Sir James Clark, some 90 years ago, wrote a special treatise on the subject "Rome as a Winter Resort" has evoked from physicians of various nationalities a series of vindications on the lines of that well-known book—all of them coming to the same conclusion epigrammatically driven home by Dr. Gsell-Fels a generation ago: "*Als Winteraufenthalt könnte Rom besser verwertet werden, wenn es nicht Rom wäre.*" It is not the climate itself, still less, in these days, the defective sanitation, that makes the Eternal City dangerous to the visitor, but the imprudences of which the said visitor is guilty in his enthusiastic exploration of catacombs, ruins ancient and mediæval, museums, galleries, and other claimants on his time, his attention, and (let us add) on his physical endurance. If in these days of "raw haste" and "condensed hurry" the visitor could be persuaded to do his sight-seeing leisurely the risks he incurs by a sojourn in Rome would be less than in almost any other European capital, but with such temptations addressed to the ecstatic tripper as "Rome in Ten Days" or even "A Month in Rome" it is to be feared that "candidates" for one or another of the ailments to which all flesh is heir will never be wanting even in "this so-called twentieth century." Gregory XVI. in the audiences he gave to the visitor from abroad used to ask how long he had been in Rome, and when told that he had been "all the winter" would smile and say, "*A rivederla.*" or "*Au revoir,*" or "*Auf Wiedersehen.*" But when the answer was "for a few weeks" he would sigh and say, "*Addio,*" or "*Adieu,*" or "*Lebe wohl,*" with a significance which appealed not more to the artist or the historian than to the medical man.

Dr. Welsford makes an effective contribution to the literature of what may be called "Roman apologetics," and in the little volume before us subjects to a thorough and cogent review the claims of the city, in point of climate and of health conditions, to be a permanent place of abode or a temporary resort for the invalid. With the advantage of "coming last" in the long line of similar treatises he is able to strengthen his "apologia" with the latest statistics as well as with the most approved and accepted findings of research—meteorological, sanitary, bacteriological, and clinical—and adduces evidence enough to warrant Dr. Sandison Brook in his hope that it will "dissipate once for all the prejudices and misapprehensions which still deter the traveller from a pilgrimage to the Eternal City." The articles on Temperature, on Relative Humidity, on Barometric Pressure, on Rainfall, and on the Prevailing Winds are compiled from the most authoritative sources, private as well as official, the only section on which we could have wished more detailed handling being that of the water-supply, in supplement to the special report of Professor Cannizzaro and his colleagues dealt with in THE LANCET some 22 years ago.¹ That

supply still remains unrivalled for purity and abundance but since the recent multiplication of dwelling-houses the courtyard fountains from which it "shook its loosened silver in the sun" has been too often replaced by the domestic reservoir or cistern where it is liable to be contaminated with the effluvia or sordes of the overcrowded tenement. Significant in this connexion is the fact, put on record by the Roman physicians of the last generation, that typhoid fever was absolutely unknown in the Rome of those days, and that the clinical student who wished to familiarise himself with its etiology, its pathology, and its response to treatment had to go to other centres of population. *Au reste*, we would draw attention to the article on Malaria as eminently reassuring in its presentation of the risks incurred from that disease. "There are no malarial foci within the walls," concludes Dr. Welsford sentimentally. As to that other "hereditary spaurachio" (scarecrow), the sirocco, which has been well defined as "heat without sun, wind without air, and rain without freshness," Dr. Welsford gives it the *coup de grâce*, adding: "It blows only 15 days in the year." A parting word as to the illustrations. These are taken from the photographs of Mr. Anderson, on whom has worthily fallen the mantle of Robert Macpherson, who, some "sixty years since," was the first to apply the photographer's art to the reproduction and presentation of the many archaeological and artistic treasures of Rome.

Ueber Augenkrankungen sexuellen Ursprunges bei Frauen. (*Diseases of the Eye of Sexual Origin in Women.*) By Dr. EMIL BERGER, Foreign Corresponding Member of the Royal Belgian and Royal Spanish Academies of Medicine; and Dr. ROBERT LOEWY, Chief Assistant of the University Gynaecological Clinic in Paris. German revised edition, translated by Dr. BEATRICE ROSSBACH, Physician for Diseases of Women in Madison, U.S.A. Wiesbaden: J. F. Bergmann. 1906. Pp. 171. Price 4 marks.

SUBJECTS on the border-line of two branches of medicine are liable to receive scant attention, falling, as it were, between two stools. Such monographs as the present therefore serve a useful purpose. It is written by an ophthalmologist and a gynaecologist, a combination which prevents many errors which might result from a one-sided view of the question. In it are collected most of the cases recorded in literature of disease of the eye caused by, or associated with, diseases peculiar to women. As a bibliographical work alone it is of great utility to the ophthalmologist, and in less degree to the gynaecologist, but its usefulness is enhanced by the well-balanced comments and hypotheses of the authors.

After a short historical introduction the book deals in sequence with diseases of the eye reported as occurring during normal menstruation, at puberty, with dysmenorrhœa and suppression of menses, at the climacteric, associated with diseases of the genital organs, during pregnancy, parturition, lying-in, and lactation. Septic affections of the eye secondary to diseases of the sexual organs and abnormalities of vision following uterine hæmorrhage are fully discussed. A chapter is devoted to the deleterious effects of parturition, spontaneous or artificially aided, upon the eyes of the infant and to the infectious purulent inflammations of the conjunctiva in the newly born.

A review of the literature, such as is presented here, brings into prominence the frequency with which both simple and obscure affections of the eye are attributed to physiological and pathological conditions of the female sexual organs, often upon quite insufficient grounds. Menstruation and pregnancy, with its concomitants, parturition and lactation, are physiological processes, whilst dysmenorrhœa and suppression of menses are common complaints, rarely attended with disorders of the ocular apparatus. There is need for the exercise of great care in attributing an

¹ THE LANCET, Dec. 20th, 1884.

between lesion of Broca's area and this affection; and Mr. J. C. Pretorius writes on Colour Vision, propounding the hypothesis that the different colours of the spectrum stimulate sections of individual "cones" lying at different depths in the retina, corresponding with the focal lengths of these colours as they pass through the lens.

ERRATUM.—In our notice of Professor Ainsworth Davis's biography of the late Professor Huxley we inadvertently described the volume as belonging to the series of "English Men of Letters"; it belongs to the series of "English Men of Science" published by Messrs. J. M. Dent and Co.

Reports and Analytical Records

FROM

THE LANCET LABORATORY.

(1) ALAXA; AND (2) QUININE ACETYL-SALICYLATE.

MESSRS. BURROUGHS, WELLCOME, AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

1. ALAXA is a pleasant liqueur containing cascara sagrada in combination with certain stomachic and carminative principles. It is free from gripping or irritating action and is suggested, in particular, as a useful tonic laxative during pregnancy. Each fluid drachm contains the equivalent of 24 minims of the liquid official extract of cascara sagrada. 2. The advantage of quinine acetyl-salicylate over ordinary quinine salicylate is that in the former case the acetyl-salicylic acid set free in the stomach passes on unchanged, causing no gastric disturbance. In the case of quinine salicylate, salicylic acid, on the other hand, is liberated, which is a gastric irritant. Aceto-salicylic acid dissolves in the alkaline contents of the intestine. Quinine acetyl-salicylate is of value in the treatment of febrile conditions.

SPARKLING CLOS DES CORDELIERS.

(MESSRS. G. DE MEYNOT AND CO., ST. EMILION; AGENTS, EDWARD ARCHER AND CO., MALVERN.)

We can quite accept the statement in regard to this excellent wine that the same careful attention is paid to it as in the production of the more renowned sparkling wine, champagne. It possesses excellent bouquet and flavour and, in short, exhibits many of those attractive qualities which distinguish a good champagne. The wine is grown at St. Emilion, a district which is famous for producing a wine of claret style but which, generally speaking, possesses greater body than claret, thus approaching the character of burgundy in this respect. This fact no doubt contributes to the success of St. Emilion as a sparkling wine, for it exhibits the rich quality of a sound champagne. The following analysis reveals its composition, which shows no appreciable difference from that of champagne itself: alcohol, by weight 10·85 per cent., by volume 13·43 per cent., equal to proof spirit 23·54 per cent.; extractives, 4·17 per cent.; mineral matter, 0·12 per cent.; sugar, 3·00 per cent.; glycerine, 0·348 per cent.; tannin, 0·114 per cent.; volatile acidity reckoned as acetic acid, 0·13 per cent.; and fixed acidity reckoned as tartaric acid, 0·57 per cent. The wine is described as "first growth St. Emilion, carte Noire extra dry vintage, 1895," and the price is 48s. per dozen.

LIQUID SOMATOSE.

(THE BAYN CO., LIMITED, 19, ST. DENNIS'S HILL, LONDON, E.C.)

Previously we have referred to somatose in the form of powder. For those who prefer this powerful food in a fluid form liquid somatose, both sweetened and unweetened, has been introduced. According to our analysis the preparation contains nearly a fourth its weight of solid matter and

approximately 70 per cent. of this consists of the soluble proteose. It is, of course, a powerful nutrient.

MOSTELLE GRAPE JUICE.

(THE GRAPE JUICE COMPANY, LIMITED, 4, FURNIVAL-STREET, LONDON, E.C.)

'We have not examined better specimens of grape juice than those recently submitted to us by the above firm. They possess the luscious flavour of the grape, whilst exhibiting also a pleasant acidulous taste. They are perfectly free from antiseptics, the method of preservation being simply that of pasteurisation. The red colour of the red juice proved to be identical with the colouring matter of the black grape. The composition of the red juice proved to be as follows: extractives, 26·65 per cent.; grape sugar, 24·08 per cent.; mineral matter, 0·25 per cent.; and acidity, reckoned as tartaric acid, 0·68 per cent. The white juice gave the following results: extractives, 26·97 per cent.; grape sugar, 25·64 per cent.; mineral matter, 0·27 per cent.; and acidity, reckoned as tartaric acid, 0·50 per cent. Both specimens, which were made from Spanish grapes, contained the merest trace of alcohol, which, of course, it is hardly possible to avoid; the amount was certainly less than two-fifths per cent. by volume. Grape juice when diluted with aerated water affords a refreshing and wholesome beverage. It may also be used when a grape diet is prescribed and particularly when there is a difficulty in obtaining the fresh fruit.

STERILISED LUBRICANT.

(MESSRS. S. MAW, SON, AND SONS, 7 TO 12, ALDERGATE-STREET, LONDON, E.C.)

The lubricant is semi-transparent and is contained in a collapsible tube provided with a mouth which is concave in shape, a device which is intended to prevent soiling the fingers with the contents and which also secures uniform lubrication. The lubricant is simple in composition and free from irritants. It is designed for use with catheters, instruments, or for lubricating the hands. The tube contains sufficient lubricant for one day's use when the catheter is employed three times during that period.

EFFERVESCENT PIPERAZINE (MIDY).

(L. MIDY, PARIS. AGENTS: THE ANGLO-AMERICAN PHARMACEUTICAL COMPANY, LIMITED, FRITH-BROAD, CROYDON, LONDON, S.E.)

According to Dr. Dujardin Beaumetz, piperazine Midy is a commendable preparation and extremely well tolerated. It certainly affords a pleasant way of exhibiting this remarkable uric acid solvent. The base has also been used in gout and as a remedy for renal colic. Piperazine Midy is a granular and effervescent powder which produces a brisk effervescence when placed in water. The measured dose of the powder contains four grains of pure piperazine. The effervescing liquid is practically tasteless. Since piperazine is deliquescent the fact that this granular powder keeps dry may be attributed to pharmaceutical skill.

(1) IODALBIN; (2) COMPRESSED TABLETS PHENOLPHTHALEIN COMPOUND; AND (3) NUTRITIVE LIQUID PEPTONE.

(MESSRS. PARKE, DAVIS, AND CO., 111, QUEEN VICTORIA STREET, LONDON, E.C.)

1. Iodalbin is suggested as an efficient substitute for the ordinary alkaline iodides, while it is said to avoid the gastric irritation of those salts and yet to secure their therapeutic effects. It occurs in the form of a rust coloured powder which is insoluble in water, acids, or alcohol but readily so in alkaline solutions. It passes through the stomach unaltered to be gradually absorbed in the intestine. The iodine to the extent of 21·5 per cent. is combined with a protein substance. 2. The phenolphthalein compound in the form of a compressed tablet contains one grain of phenolphthalein, 15th grain strychnine sulphate, and 15th grain of extract of belladonna leaves. Phenolphthalein is now well known as a laxative, this effect as a rule being obtained without pain. The value of the addition of

illustrations are practically as good as photographs can be. The treatise on treatment is likely to prove useful; it is moderate in tone. Sometimes the author appears to us to be unnecessarily pessimistic in regard to the efficacy of treatment.

The World Machine: First Phase, the Cosmic Mechanism. By CARL SNYDER. London: Longmans, Green, and Co. Pp. 488. Price 9s. net.—The author of this work might well quail before his subject, which is no less than the epitomising in this volume and two others to follow of the whole plan, physical, cosmical, and social, of the universe. We will first express a hope that the ending of his labours will lead him to a less lugubrious conclusion than is contained in the five lines of undiluted Nietzsche that front this volume, but in spite of this the stupendous issues involved are set forth, so far as they have been revealed by science, in a way that may be understood of the people. A medical journal cannot fully review a survey of astronomical history, but we may say that the work is informed with a thorough knowledge of how from Ptolemaic darkness and through Copernican dawn at length the Newtonian day grew bright, a transition that finds an adequate biological parallel in the sun of Listerian methods that so much later in the world's history dissipated the murky gloom of the surgery of laudable pus. It is an interesting reflection on the rapid transitions of modern science that within so few decades of the apparent shattering of the walls of the doctrine of spontaneous generation by Pasteur's trumpet-blast, such a book as this can more than hint at the possibility of their being again set up.

The Psychic Riddle. By ISAAC K. FUNK, D.D., LL.D. London and New York: Funk and Wagnalls Co. 1907. Pp. 243. Price \$1 net.—Another plea from America for the dispassionate consideration of the claims of spiritualism. Dr. Funk's present solution of his riddle is thus summed up: "That intelligences who are foreign to us, that is, who reside beyond our five senses, can and do communicate through the physical sense organs with some of those who are living in the flesh." However, he denies the complete confession of spiritualism, which, says he, includes this further article: "That these intelligences can and do identify themselves as those who once lived in the flesh." To the acceptance of this doctrine, we are told, there remain some very formidable difficulties. Exactly, and a perusal of the "phenomena" set down in these pages appreciably advances its disproof, as especially witness the tricksy "spirit" of Theodore Parker, which, manifesting itself to the learned doctor through different mediums, always had a different tale to tell! We must credit the author, however, with a recognition of frequent fraud in "spiritualism," although the tone of his work indicates a strong sympathy with many of its conclusions, and we need hardly state that the opinions of Lodge and Lombroso are called in evidence for the thesis. The book ends with a string of aphoristic dark sayings, of which this may serve for type, "Those who do not love death do not know it."

A Treatise on Materia Medica and Therapeutics. By RAKHALDAS GHOSH, L.M.S. Cal. Edited by O. P. LUKIS, M.D. Lond., F.R.O.S. Eng., Lieutenant-Colonel I.M.S. Third edition. Calcutta: Hilton and Co. Pp. 737. Price Rs. 5, or 7s. 6d.—The appearance of a further edition of this excellent manual justifies the good opinion expressed in THE LANCET when it was first issued in complete form in 1904. The late author had an extensive knowledge of his subject and the task of editing the work has been very ably carried out by Lieutenant-Colonel Lukis. We note that our former suggestion as to the value of volatile ethers in alcoholic stimulants has been included in this edition, and in the next we hope to see a repetition of the warning against prescribing alkaloids with bromides and iodides given under the

heading of the latter drugs as well as under the general list of incompatibles, which omission we previously suggested should be corrected. The work as a whole is excellently arranged, and the sections on pharmacology and therapeutics will be useful to practitioner as well as student.

Lessons on Massage. By MARGARET D. PALMER. Third edition. Illustrated. London: Baillière, Tindall, and Cox. Pp. xvi.-272. Price 7s. 6d. net.—We congratulate Miss Palmer on the appearance of a third edition of her work which bids fair to become a standard text-book on massage. Of course no text-book can replace practical work, and he or she who would become an adept in effleurage, tapotement, and the rest must rely on practice above all things, for the best book can only be an adjunct of limited use. It is in the chapters on bones and muscles that the student will find his chief help. The authoress could not have hit upon a happier motto for her work than the Hippocratic aphorism, which she quotes: "Rubbing can bind a joint that is too loose and loosen a joint that is too rigid." In this edition the sections on certain deformities have been revised and are now thoroughly trustworthy.

JOURNALS AND MAGAZINES.

The Edinburgh Medical Journal.—In an article in the April number of this journal Dr. F. W. N. Haultain makes a clinical and anatomical study of 30 cases of cervical fibroids removed by abdominal hysterectomy. The symptoms caused by these growths are more severe than those resulting from corporeal fibroids and the results of operation are less favourable. Dr. R. T. Williamson writes on Progressive Muscular Atrophy and Amyotrophic Lateral Sclerosis, which he considers to be distinct affections, and Dr. Dawson F. D. Turner recommends examination of the respective electrical conductivities of the blood and urine as a test of the functional efficiency of the kidneys. Dr. F. Parkes Weber records a case of polyneuritis in which great gastro-intestinal dilatation occurred, probably due to implication of the pneumogastric nerves.

The Bristol Medico-Chirurgical Journal.—The March number of this magazine opens with an interesting article by Dr. P. H. Pye-Smith on Prognosis, containing many shrewd reflections and aphorisms relating to a variety of diseases. Dr. D. S. Davies and Dr. I. Walker Hall write on Cerebro-spinal Fever (Meningitis), basing their remarks on cases admitted to the Bristol Royal Infirmary since 1901, and Dr. P. Watson Williams writes on the Treatment of Deflections and Deviations of the Nasal Septum. Dr. A. Lewin Sheppard discusses Acquired Angioma of the Liver, with notes of a case; and two cases of Ruptured Intestine ending in recovery and one of Splenomegaly Cirrhosis in a child, aged seven years (a final note), are recorded respectively by Mr. Harold F. Mole and by Dr. Edward Cecil Williams.

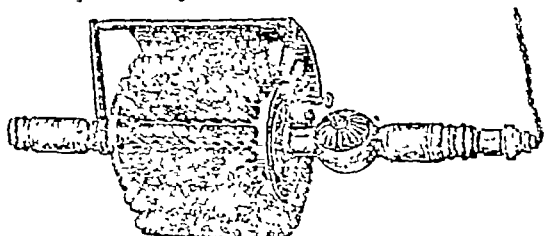
The Dublin Journal of Medical Science.—The two numbers of this journal now before us—those for March and April—are above the average in the variety and interest of their original articles. The former contains a series of papers on Gastric Ulcer, which are chiefly of importance as illustrating the views of their writers—Dr. James Little, Sir Charles Ball, Dr. J. A. Lindsay, and Mr. Arthur B. Mitchell—as to the advisability of surgical interference. The first-named writer records that in recent years several patients have consulted him for stomachs which gave great trouble and that among the principal signs he was obliged to mention a "scar five inches long" in the linea alba. The April number opens with a first instalment of an exhaustive account of "Our Debt to Ireland in the Study of the Circulation," with a voluminous bibliography, by Dr. G. A. Gibson. Dr. Frank C. Parser discusses current theories of Aphasia, alluding especially to Marie's doubts as to the reality of the connexion

wide end of a glass tube between four and five inches long (here only represented in part). To use the apparatus water is poured into the boiler at the opening marked "Wasser" from a measure holding 100 cubic centimetres, and the lamp is lighted underneath. For use in the other compartment marked "Medicin" the medicinal substance selected is introduced at the proper opening with a small spoon holding a suitable quantity. The vapour of this, heated by the steam of the boiling water, issues in a fine jet from the vertical nozzle, and the jet of steam directed across it drives clouds of strongly medicated vapour up the glass tube, mixed with hot air and steam. Dr. Saenger recommends that the inhalations should last from 10 to 15 minutes and that they should be repeated from four to six times daily. These inhalations are contra-indicated when there is a tendency to hæmoptysis. A considerable variety of substances may be inhaled in this way, including oil of turpentine, oil of eucalyptus, menthol, thymol, balsam of Peru, camphor, creasote, carbolic acid, and guaiacol. Administered in this way they have been found useful in various forms of bronchial catarrh, whether chronic, acute, or associated with pulmonary tuberculosis; also in cold in the head, sore-throat, and whooping-cough. The apparatus is portable and can be easily made ready for use at any time in a few minutes.

It may be obtained from the principal instrument makers and dealers in druggists' sundries.

THE ELECTRIC MOTOR HAIR-BRUSH.

[WE are assured of the economical and mechanical advantages of this machine, which is illustrated below, but our interest in the invention lies chiefly in its sanitary aspects. In an annotation which was published in THE LANCET of March 16th, 1907, p. 753, it was remarked that while the sterilisation of combs, brushes, razors, and the hands of the operator may avail much, the rotary machine-brush scattering dust, scurf, and so forth from the dry scalp remained an unwholesome instrument. It is difficult to suggest a practical method by which this can be overcome, yet we



think the electric motor hair-brush deserves a word of praise in this connexion, inasmuch as its use is calculated to reduce the process of brushing hair by machinery to a hygienic level. To begin with, the motor is part and parcel of the brush itself, so that the current may be drawn from any point by means of a socket attachment which is identical in principle and method with the ordinary incandescent electric lamp. Thus the shafting and belting of the old method is done away with and the operator is perfectly independent of a similar operation which may be going on at the same time. All that is required are a lamp and "lead." Further, the brushing can be conducted without trouble in a separate compartment. As will be seen, however, from the illustration the brush is provided with a baffle or screen which prevents the scurf from being distributed broadcast as is the case with the ordinary brush. Moreover, the brush can readily be detached from the motor for cleaning purposes, the frame being constructed of aluminium. There are no crevices in which dust can lodge. If the customer desires he can keep his own brush for his own exclusive use. These are sanitary advantages which must be obvious to everybody. The brush is under complete control owing to the ease with which the switch can be turned on or off by moving it with the thumb. The motor can be adapted to any circuit, and is supplied for the usual range of voltage from 100 to 250 volts and either for direct or alternating current. The cost of current for driving the brush in an ordinary shop is stated to be about 2d. per week for an outlay of £12. Altogether this electric rotary brush is a clever device, and one to which we may heartily accord our approval, since it gives the hair-dresser further opportunity of placing his operations on a really sanitary basis. The electric motor hair-brush is the property of the Light Electric Motor Co., Limited, of Seven

LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY.

THE annual general meeting of the London and Counties Medical Protection Society was held at 31, Craven-street, Strand, London, W.C., on April 18th, Dr. G. A. HERON being in the chair.

The annual report of the Council for 1906 formed a volume of over 100 pages and showed the large amount of work carried on by the society. Under the heading of defamation of character a number of instances were given of the way in which assistance was afforded to members of the society; one offender in regard to whom clear evidence was forthcoming was written to and he was finally made to publish in all the local newspapers a withdrawal and an apology as drafted by the society. The treatment of fractures usually affords work for medical defence societies and in the following case given in the report of the council the member interested certainly had no reason to complain of the result. This gentleman had attended a "mother's help" for fracture of both bones of the forearm. Union did not take place satisfactorily and ultimately an operation was performed, the result of which was not all that could be wished. The member complained that reports were getting about to the effect that he had set the bones badly. Accordingly the society wrote letters to the girl's mistress and to another lady accusing them of slandering the medical man. Both ladies at once put the matter in the hands of their solicitors. Ultimately one lady gave a written apology which was accepted and the mistress's explanation that her words had been quite misunderstood was also accepted. The member expressed sincere thanks for the assistance of the society in clearing up an awkward situation which threatened to have a disagreeable effect on his professional position. In another case two partners, members of the society, complained that payment of their account had been refused with threat of an action for malpraxis. The alleged malpraxis was in regard to the treatment of a fractured elbow-joint. The union of the fracture had resulted in some limitation of the movements of the arm. The patient had been sent to the London Hospital and efforts had been made to improve the movements of the arm. The father of the patient was written to and told that he perhaps did not recognise that fractures involving the elbow-joint, no matter how carefully and skilfully treated, quite commonly cause some crippling of the movements of the arm. The medical men had treated the case with skill and care and he ought not to blame them because the result was not all that could be wished for. Hope was expressed that the medical men would not be compelled to take proceedings and the complainant was told that the society would defend its members if any charge of negligence or want of skill were made against them. Shortly afterwards the partners wrote to the society saying that the complainant had paid his account and was satisfied. The usual number of cases of the following nature were satisfactorily dealt with by the society. A member complained of annoyance by letters from a patient whom he had attended for uterine troubles. She appeared to imagine that he had acted improperly and was written to and warned. She called at the society's offices and was told she had no grounds of complaint against the medical man and must not molest him in any way; she agreed to do as she was told.

Dr. HERON, in moving the adoption of the report, which was duly seconded and carried unanimously, stated that he was justified in saying that financially the society was the soundest of its kind in the country.

The meeting terminated after the transaction of the usual formal business, in the course of which the members expressed their cordial appreciation of the work done for the society by the general secretary, Dr. Hugh Woods.

THE SOCIETY OF ARTS.—Sir Edward C. Buck, late Secretary to the Government of India, Revenue and Agricultural Department, will read a paper before the Indian Section of the Society of Arts on Thursday afternoon, May 2nd, on the Applicability to India of Italian Methods of Utilising Silt. The subject has medical, as well as agricultural and geographical interests, as it is claimed that the Italian work has proved a great preventive of malaria. The chair will be taken at 4.30 o'clock.

strychnine and belladonna is obvious. 3. The nutritive liquid peptone contains soluble protein prepared by means of bromelin, the hydrolytic agent of pine-apple juice. The chief advantage of peptone obtained in this way is that it is free from bitter taste. The preparation also shows diastasic power. According to our analysis the preparation contains 18.65 per cent. of solid matters, but the total nitrogen amounted to only 0.31 per cent. By adding to this preparation a few minims of beechwood creasote and of guaiacol it is made suitable for those suffering from gastric disorders, flatulence, &c., while it improves nutrition in sufferers from respiratory diseases and diminishes cough.

TURKISH CIGARETTES (SACKVILLE BRAND).

(ALEXANDER BOGUSLAVSKY, 3, SACKVILLE-STREET, PICCADILLY, LONDON, W.)

These cigarettes have been sent to us on the ground that they are made from carefully selected tobacco leaf and that accordingly they can be smoked without giving rise to irritation. The smoke from them is certainly as free from irritating effects or pungency as we imagine tobacco smoke can be, while the aroma is delicate and pleasing. Moreover, the tobacco is free from dust which we regard as an important point.

CYDER.

(WILLIAM GAYMER AND SON, ATTLEBOROUGH, NORFOLK.)

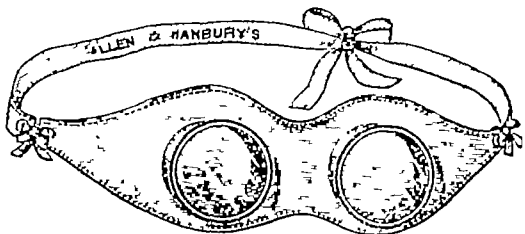
That Norfolk can produce excellent cyder is plain from a careful consideration of the qualities of the specimens sent to us by the above firm. The samples ranged according to description from "extra dry" to "sweet," intermediate samples being denominated as "old natural," "natural," "medium dry," "very dry," and so on. We give the analyses of a few selected specimens, the results serving to show the chief variations in the composition of differently designated cyders. The "old natural," for example, gave the following results: alcohol by weight, 7.93 per cent.; extractives, 5.00 per cent.; mineral matter, 0.33 per cent.; sugar, 3.22 per cent.; malic acid, 0.28 per cent.; and acetic acid, 0.34 per cent. Sparkling Pometta (resembling a hock in character but less alcoholic) gave the following results: alcohol by weight, 7.27 per cent.; extractives, 4.35 per cent.; mineral matter, 0.25 per cent.; sugar, 2.77 per cent.; malic acid, 0.23 per cent.; and acetic acid, 0.24 per cent. Oldfield perry gave the following results: alcohol by weight, 6.57 per cent.; extractives, 5.70 per cent.; mineral matter, 0.32 per cent.; sugar, 2.43 per cent.; malic acid, 0.21 per cent.; and acetic acid, 0.21 per cent. (as will be seen it contains less sugar than the previous specimens and less alcohol). In no instance did we find the volatile acid, recorded as acetic acid, to exceed 0.34 per cent., which is evidence of the sound condition of the cyders.

New Inventions.

AN EYE PROTECTOR FOR USE AFTER CATARACT EXTRACTION, WOUND OF EYEBALL, &c.

NUMEROUS eye protectors for use after cataract extraction have been suggested by Fuchs, Snellen, and others. For some years I have used a wire protector made for me by Down Bros. Lately I have adopted modified motor goggles and have found them extremely useful. They consist of a detachable calico front piece, to the ends of which a piece of broad tape or elastic is attached. Two round metal rims one and three-quarters inches in diameter and half an inch high are inserted. The sides of these are pierced by numerous holes, for ventilation. The rims are covered with tinted glass. After the cataract operation a thick oblong piece of absorbent cotton wool or Gamgee tissue is placed over each eye (3 inches by 2½ inches) and the protector is tied round the head, the rims resting on the cotton-wool pads. After from two to five days the pad is removed from the eye which has

not been operated on, and in from five to eight days from other eye. The advantages of this protector are: (1) the eye which has been operated on is completely and securely covered and it is impossible to damage the eye by a blow any kind; (2) the cotton-wool pad can be removed much sooner from either eye as the protector excludes bright light and cold air; (3) no strapping or bandage is required; (4) it is very cool and comfortable; (5) it is quite aseptic, as it



rims can easily be detached and all parts readily sterilised (6) when the pads are removed no dark glasses are necessary as long as the patient remains indoors; and (7) it is very cheap. The protector is also very useful in the treatment of any eye diseases, operations, and accidents when the eye has to be covered or protected from bright light.

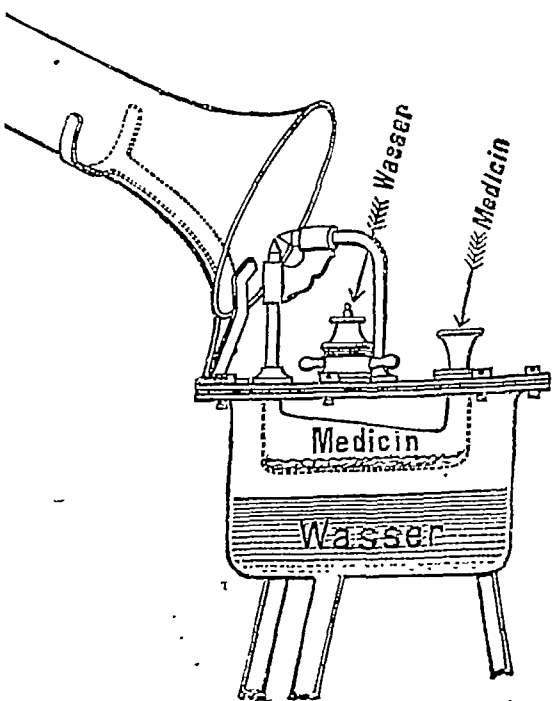
The protector has been made for me by Allen & Hanbury, Limited, of Wigmore-street, London, W.

ADOLPH BRONNER, M.D.,
Senior Surgeon to the Bradford Eye and Ear Hospital
Laryngologist to the Bradford Royal Infirmary.

Bradford.

A NEW MEDICINAL EVAPORATOR.

THE apparatus, of which a vertical section is shown in the accompanying illustration, has been devised by Dr. A. Saenger of Magdeburg for the treatment of bronchial and pulmonary diseases by the inhalation of medicated vapour. It consists principally of a circular copper boiler about three inches in diameter and two inches high, supported on three



feet of a sufficient length to let a small spirit lamp stand underneath it. On the upper surface there are two inlets, one of which, indicated by an arrow and the German word "Wasser," communicates with the general cavity of the interior, while the other one, also indicated by an arrow, communicates with a separate internal chamber marked "Medicin." Each of these cavities has also an outlet in the form of a fine nozzle. These two nozzles meet at a right angle as shown,

seem to involve the prohibition of the use of many other substances which are largely used in industry and which have caused a much larger number of industrial accidents. Moreover, one effect of such prohibition would be to throw out of employment a large number of workers. It seems to us that in this case the policy of the Home Office of gradual regulation and control rather than sudden and actual prohibition is a wise one from an administrative standpoint, and it may be that the remarkable progress in factory legislation and administration which has marked Dr. WHITELEGGE'S term of office in the Factory Department is due largely to this spirit of compromise, a spirit which has been always associated with steady advance. But whatever may be the outcome of further investigations which are being made relative to the match industry, it is obvious that the workmen themselves cannot be regarded as by any means free from blame. The dangers which they incur must be obvious to them, as also must the facilities which are afforded for obviating such dangers, and to absolve the workman from all responsibility is surely a policy fraught with disastrous consequences to his moral fibre.

The Turkish Lazarets.

WE begin in another column a series of articles upon the Turkish lazarets which we hope will be found interesting to our readers. We are certain that they give information which has never been before available upon the important work for the preservation of the health of Europe undertaken by the Constantinople Board of Health, by the British delegate of which board they are written. The word "lazaret," as applied to some of the institutions dealt with in the articles, is in many ways an unfortunate one. To most uninstructed minds it conjures up visions of the poorest of poor-houses, sheltering ragged beggars with loathsome sores, like these of the Lazarus of the parable, or even lepers in all degrees of deformity. To such it comes as a surprise to learn that a modern "lazaret" is nothing of the kind, but in many instances a vast and costly establishment where healthy people are kept under observation for a short period, in order that any case of cholera or plague developing among them may be at once isolated and dealt with. In 99 instances out of 100 no such disease develops and the pilgrims (for whom most, but not all, of the lazarets are provided) leave the institutions with little more to complain of than the delay. In the meantime they have had the advantage of a rest, of undergoing at least one good douche-bath, and of having their clothes and effects thoroughly disinfected in a modern steam stove.

For many lazarets positions of great natural beauty or attractiveness have been chosen. Those of Camaran and Abu-Saad, for instance, occupy coral islands in the Red Sea—sites which, though they can scarcely lay claim to any beauty, have a very marked and interesting character of their own. The lazaret of Tor is built in an oasis on the strip of desert at the foot of the Siwaic range—a spot of unsurpassed attractiveness. That of Beirut occupies a promontory jutting out into the Mediterranean, near the foot of the

Lebanon, and the views all round are truly splendid. Were all the other qualities of these establishments on the same high level of perfection as the natural sites they occupy all the world would wish to live in lazarets. Unfortunately, however, most of them are very far from perfect. Some sink to very low depths of imperfection and are the subject of constant complaint from those who have to undergo quarantine in them. Others require much to be done to them before they can be said to come up to any ideal standard of perfection. To this last category belong most of the lazarets described in the articles. During the winter 1905-06 the Constantinople Board of Health despatched a commission, consisting of three of its members, to inspect some of the principal lazarets under the board's management. The commission was composed of the British and Greek delegates and one of the Turkish members of the board. While the primary object of the commission's work was to inspect the large lazaret of Camaran, near the southern end of the Red Sea, advantage was also taken of the opportunity to visit and report upon several other of the board's sanitary institutions—notably the lazarets of Abu-Saad, near to Jeddah, and of Beirut, and the new disinfecting stations of Jaffa and Rhodes. The British delegate being a member of the commission, had thus the occasion to examine thoroughly several institutions for the prevention of the spread of epidemic diseases, some of which are of international importance, not only on account of the part they play in protecting Europe from those diseases, but also from the prominence assigned to them in the proceedings of successive international sanitary conferences.

The only information hitherto available in regard to these institutions has been contained in reports to the Constantinople Board of Health from the officials in charge of them. Such reports are but too often of a fragmentary character, and, indeed, a comprehensive and detailed account of the actual state of any of these lazarets or sanitary stations did not, until the return of the inspection commission, exist. Further, of most of them there were either no detailed plans or plans of a very elementary (and, it must be added of some, inexact) character, while in the case of none of them had photography been systematically employed to bring home to those responsible for their management the nature and actual condition of the institutions they had to deal with. The difficulty experienced in the management and upkeep of these large and distant establishments can in the circumstances be easily imagined; and it is undeniable both that errors have been committed in the past from the lack of such information and that the institutions themselves have suffered to some extent in consequence. The reports, now printed, of the inspection commission should go far to fill up these regrettable gaps in the knowledge of those concerned. These reports (in French) have been presented to the board and to the governments interested, and it may be hoped that the detailed recommendations they contain for the thorough repair and completion of the institutions in question will ere long be put into practice. The reports are profusely illustrated with charts, plans, and diagrams, and with a series of photographs taken by the British delegate, many of which will be reproduced in his articles in our pages.

THE LANCET.

LONDON: SATURDAY, APRIL 27, 1907.

The Workman's Share in the Promotion of Industrial Poisoning.

IN all legislative reforms and in all our efforts to reduce the prevalence of preventable diseases the main obstacles which have first to be overcome are the greed of the employer and the ignorance of the workman and, unfortunately, both forces are sometimes found marshalled on the same side. Generally, however, it is the element of avarice which prevents the employer from introducing, except under legal pressure, the necessary reforms, while it is the forces of ignorance, prejudice, and suspicion which preclude the workers from reaping the full harvest of such reforms when at last they have been inscribed on the pages of the Factory Acts. An example of what must be regarded as a most culpable negligence on the part of the workman has recently been brought to light in a joint report¹ made to Mr. HERBERT GLADSTONE by Mr. H. H. S. CUNYNGHAME, Assistant Under-Secretary of State for the Home Department, and Dr. B. A. WHITELEGGE, H.M. Chief Inspector of Factories, upon a fatal case of phosphorus poisoning in a match factory at Gloucester. The fact that the soluble white or yellow phosphorus is still employed in the manufacture of lucifer matches will doubtless come somewhat as a surprise to many who have not followed events in the match industry, and it is probably a common impression that although yellow phosphorus matches are introduced into this country from abroad public opinion has prohibited their manufacture at home. Such, however, is not the case and, if we may read between the lines of the report which we are now noticing, it is more likely that the yellow phosphorus match industry will be rendered practically harmless than that the manufacture of such matches will be actually prohibited; and this notwithstanding the circumstance that in the factory at Gloucester in which the fatal case of poisoning already referred to took place both "safety" and "strike anywhere" matches are made without the use of white phosphorus.

Considerable importance has clearly been attached by the Home Office to this fatal case of phosphorus poisoning at Gloucester, but the facts elicited by the important officials who investigated it would not seem to warrant the conclusion that the factory in question was wholly, if at all, responsible for the disaster. The victim had been formerly employed for about 12 years in a match factory in Ireland and at a time when but few precautions

were taken. Some two years after commencing work at Gloucester a trivial accident resulted in the fracture of the man's thigh and, as it failed to "set," amputation was resorted to. The fact of this fracture suggested to Mr. CUNYNGHAME and Dr. WHITELEGGE that it may have been induced by the peculiar brittleness of bones which is a recognised condition amongst those who have been exposed to the fumes of phosphorus for many years, and this view appears to have received support from the fact that the arrangements in the Gloucester factory were not such as to lead to the belief that the patient was really exposed to phosphorus fumes. Be this as it may, the duties assigned to the workman now in question were, having regard to the fracture and subsequent amputation of his leg, unfortunate, although the employers were probably acting under the belief that they were doing a kindly action. There were but few tasks which a cripple such as this could perform, and he was seated at the revolving table upon which the matches are lowered to receive their dip of phosphorus, his duty being to keep the table properly covered with its sticky paste of warm glue, white phosphorus, and chlorate of potash which he poured thereon by hand out of a ladle. Both the table and the pot containing the mixture were covered with a hood, through a window in which the workman watched the movements and requirements of the dipping table. This hood appeared to be working effectually and smoke generated near it was at once carried away. But, unfortunately, the crippled workman had contracted an inveterate habit of chewing tobacco, and as his infirmity precluded him from leaving his seat periodically to wash his hands it is not improbable that he conveyed phosphorus to his mouth together with the tobacco. He developed "phossy-jaw" and died. This view of the origin of the tragedy receives some support from the circumstance that at one of the dipping machines the hands of those employed were found smeared with phosphorus paste in dangerous amounts, while at both the machines in use the hands of the person removing the frames containing the dipped matches were found in practically a similar state. As will have been seen the process of dipping is not yet wholly automatic, although the firm here in question is doing its best to devise an automatic machine the introduction of which would, it is believed, cost thousands of pounds. For the most part the factory seems to be well conducted, although on one occasion the proper use of the mouth wash was neglected and on another there had been resistance to the wearing of overalls. It was not thought, however, that there was ground for prosecution, as the firm has voluntarily had a monthly dental examination of their workmen in place of the quarterly examination required by the special rules. An undertaking has now been given to introduce sundry reforms, such, for instance, as providing gloves for the workers at the dipping tables, the prohibition of tobacco chewing, and the repeated inspection of the workers' hands during work.

This incident and the report thereon raise several interesting points, such, for example, as the prohibition of the use of white phosphorus and the introduction of completely automatic machinery. The prohibition of white phosphorus would relieve the Home Office of much trouble, but, as the experts point out, such total prohibition would logically

¹ Report to the Secretary of State for the Home Department by H. H. S. Cunynghame, Esq., C.B., Assistant Under-Secretary of State, and B. A. Whitelegge, Esq., C.B., M.D., H.M. Chief Inspector of Factories, on the Match Factory of Messrs. Moreland and Sons, Gloucester, with special reference to a recent fatal case of phosphorus necrosis. Wyman and Sons, Limited, Fetter-lane, E.C. 1907. Price 1d.

consequent upon an open window or door. If the teacher draws down the blind or closes the offending ingress for air the practical application of the hygienic teaching is lost, because the school building is not adapted to the purpose it is supposed to fulfil, or because the class is too large by reason of the school being overcrowded.

Hospitals were never intended, we presume, to be used as educational establishments so far as the patient is concerned, but there is evidence to show that these institutions play no unimportant part in engendering in the suffering poor who are treated in them hygienic habits which are afterwards reflected in the home life. This useful result is due in a great measure to the fact that our hospitals, owing to a lavish out-pouring of charitable funds, are becoming day by day more structurally suited to their purposes. In like manner the school ought to have a powerful effect on the home life of the child, but we fear that this is not so in many cases. Architects have had this subject under their attention for years, and it is not a reproach upon the experts that the school buildings are so often faulty. But it is a reproach upon the nation and one that we trust will gradually be removed. The general provision of elementary schools according to modern scientific requirements would mean the expenditure of a larger sum of money than the nation would be prepared to pay, but the necessity for national education having been admitted it must now be recognised as false economy to attempt to educate the child on a system which does not lead to the best results.

The Prevention of Tuberculosis.

PROPOSALS for the introduction of legislative measures to assist in the prevention of tuberculosis are being constantly brought to the notice of the public sanitary authorities. The most prominent of these are concerned with the question of food-supply and the introduction of compulsory or voluntary notification. We have recently received two communications on the subject which are of considerable interest and importance. One is a report from Dr. WILLIAM COLLINGRIDGE, the medical officer of health of the City of London, relative to the second interim report of the Royal Commission appointed to inquire into the relations of human and animal tuberculosis. The second communication is from the secretary of the Edinburgh Local Government Board and is entitled "Administrative Control of Pulmonary Phthisis." Here we may once more express our regret that the term "pulmonary phthisis" has been employed. The expression "pulmonary tuberculosis" is from a pathological point of view more correct and convenient and we trust the word "phthisis" will be allowed to become obsolete, since it is both wrong and unscientific. Dr. COLLINGRIDGE gives a good summary of the second interim report of the Royal Commission on Tuberculosis and points out that the conclusions arrived at are of vital importance as affecting the food-supply of the country and the line of action which should be adopted by sanitary authorities in dealing therewith. The recommendations emanating from the first Royal Commission in 1896 were somewhat discountenanced by the announcement made by Professor B. Kossel at the Congress

on Tuberculosis held in London in 1901, that while bovine tuberculosis was easily communicable from animal to animal human tuberculosis was not capable of being so conveyed, and that he was unable to accept the possibility of infection of man from animals. Naturally enough, as Dr. COLLINGRIDGE points out, this pronouncement was largely accepted by the trade and from that date it practically became an article of faith with those dealing in cattle that tuberculosis could not be conveyed to man from animals. The two interim reports of the second Royal Commission, dated respectively 1904 and 1907, go far to prove that the effects of the bacillus of bovine and human tuberculosis are one and the same. This contention is supported by the evidence accumulating from all parts of the world as to the identity of human and bovine tuberculosis.

The Commissioners were able to give a positive answer to the question as to whether the human body could be infected by bovine tuberculosis. They were further of opinion that a very considerable amount of disease and loss of life, especially among the young, must be attributed to the consumption of cow's milk containing tubercle bacilli. Dr. COLLINGRIDGE is of opinion, and we are in agreement with him, that the second interim report, to which we have referred, calls for no change in the present position of meat inspection, since the degree of danger incurred by the consumption of the flesh of tuberculous animals is probably not great. The recommendations of the first Royal Commission remain as the standard by which meat in this country is to be judged. The standard may, or may not, be altered in the future but in the meantime the correct course is to accept it absolutely, and the various sanitary authorities should take precautions to ensure that the circulars of the Local Government Board are strictly complied with. With regard to milk-supply, the danger to health and life has been proved to be a real and ever-present one and more stringent measures are necessary to prevent the use of tuberculous milk. The question naturally arises as to the nature of these measures. Dr. COLLINGRIDGE urges in the first place that the making of regulations under the Dairies, Cowsheds, and Milkshops Order should be compulsory throughout the country, and some modifications bringing them up to date should be made, and we maintain that speedy and stringent legislation in this direction is called for. Careful supervision of farms, cattle, and milk utensils would be necessary but until orders in Council are made mandatory but little good can result from such precautions. The Contagious Diseases Act, 1878, gave power to the Privy Council (now transferred to the Local Government Board) to make an order under which local authorities were empowered (*inter alia*) to make regulations for the inspection of cattle in dairies, for securing the cleanliness of milk stores and of milk utensils, and also for regulating the lighting, ventilation, cleansing, drainage, and water-supply of dairies and cowsheds. If these regulations were made compulsory on every sanitary authority much would be done to lessen the danger that arises from tuberculous cows.

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School Hygiene.

THE Second International Congress on School Hygiene which is to be held in London, under the presidency of Sir LAUDER BRUNTON, during August Bank Holiday week will certainly be attended by a profoundly interested public. And of these we hope that many will recognise that the time has come for us to include in our national scheme of primary education due attention to the mental and physical condition of the children. It is almost inevitable that a great reform like the Education Act of 1870 should bring trouble in its train, for it may be taken as an axiom that the law of progress is a law of sacrifice; but our children, in whom our hopes for the race are vested, should not be the victims. Hitherto the nation has not fully reaped the results expected when we first aided education financially and subsequently made it compulsory. It is true that the general intellectual standard has been raised, and it is probable that many of the statements to the effect that the elevation has been at the expense of physical fitness have been made on insufficient grounds, but no one disputes that school hygiene has still to be developed as a national movement. With the increased knowledge of 35 years the time has, we hope, arrived when our primary education will be carried out under conditions which will result in a larger measure of utility to the nation, and the injustice which pure ignorance has caused some of our children to suffer will be removed. The forthcoming Congress, composed, as it promises to be, of men and women of experience in educational questions in every civilised country in the world, should be the starting point for a new order of things. Quite apart from sentiment, quite apart from the interests of the children, the mental, moral, and physical education of those who will be the fathers and mothers of future generations is of the most vital importance to the existence of a nation. A race, to maintain its position among the peoples of the world, must of necessity be composed of healthy men and women; their physique will assist their mental capacity, but both must be good to be able to cope with the advance of knowledge which has characterised the past century, and which promises to be still more rapid in the years immediately before us.

That we have been slowly awakening to a sense of our responsibilities in the matter of education and its bearings on national physique is shown by reference to recent Royal Commissions, Parliamentary inquiries, and Departmental Committees which have dealt with questions of physical degeneration. Numerous societies have also begun to discuss the hygiene of childhood and allied subjects, a section of educational science has been started at the meetings of the British Association, and the furtherance of the teaching of hygiene and temperance in elementary schools has been officially approved of by the British Medical Association. A conference on "The Teaching of Hygiene and Temperance in the Universities and Schools of the British Empire" was held on Tuesday afternoon last at the examination hall of the Conjoint Board of the Royal College of Physicians of London and the Royal College of Surgeons of England. This conference was convened by a composite committee of the hygiene and temperance committee of the medical profession and of the

health committee of the British Medical Association, and the attendance was strengthened by the inclusion among the speakers of prominent colonial citizens present in this country in connexion with the Imperial Conference. The sessions were presided over by Lord STRATHCONA, the veteran High Commissioner for Canada, and Sir JOHN GORST, recently Minister of Education, whose attention to the conditions by which the health and vigour of the children of the nation can be promoted by the State have recently been incorporated in a popular volume. Interesting papers were read by Mr. J. L. HUGHES, chief inspector of schools in Toronto, and Sir VICTOR HORSLEY, while practical addresses were delivered by the Hon. ALFRED DEAKIN, the Prime Minister of the Commonwealth of Australia, Mr. FRANK GOULD, Sir J. A. COOKBURN, M.D., a late Minister of Education in Australia, Sir PHILIP SYDNEY JONES, M.D., the well known Australian physician, Mr. ALFRED MOSLEY, and others whose personal interest in all questions of education, hygiene, and temperance are well known to our readers. This Conference, held at the time when these very subjects are engaging the attention of Parliament and the public, ought to have an important bearing upon national thought, and will help to insure that the International Congress on School Hygiene will commence its labours in the autumn of this year in possession of a varied audience and with wide sympathies in its work already aroused.

To return to this Congress, its programme, showing the many distinguished authorities who will take part in its discussions, justifies the hope that the hygiene of education will be dealt with thoroughly in all its bearings. There is one matter which has not hitherto received the practical attention from medical men which it rightly demands—namely, the construction of school buildings in the light of the requirements demanded by modern scientific knowledge. In suburban areas, where houses are springing up rapidly and where the population soon outgrows the educational accommodation, the necessary overcrowding of the children in the school may form an evil of the greatest consequence to the population from the health point of view. The influence of the school on the spread of infectious diseases is well known, and, as Sir LAUDER BRUNTON has pointed out, in pleading for the pressing need for medical inspection, that the infection of one child may result in an epidemic of scarlet fever or diphtheria which may spread over a district. This obvious fact must appeal to all as a reason for considering very carefully the sanitary construction of school buildings. Again, it is manifestly difficult to teach children lessons of hygiene which they will respect, while the building where they spend a great part of their time affords an object lesson in opposition to the subject taught. Everyone knows that an object itself creates a lasting impression on the mind of children, while a verbal description may leave them comparatively unmoved, and it is useless to attempt to impress upon a child the importance of fresh air or the beneficial effect of sunlight while the construction of the school may be such as to make both a positive hindrance to teaching. While one child is suggesting that he cannot see the blackboard because the sun is shining directly in his eyes another may be complaining of carache

consequent upon an open window or door. If the teacher draws down the blind or closes the offending ingress for air the practical application of the hygienic teaching is lost, because the school building is not adapted to the purpose it is supposed to fulfil, or because the class is too large by reason of the school being overcrowded.

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The document emanating from the secretary of the Edinburgh Local Government Board is also an interesting one. The term, "pulmonary phthisis," is also adopted here, although the synonym, "tuberculosis of the lungs,"

is placed within brackets. Some useful remarks are made on disinfection of rooms which have been occupied by tuberculous patients, and on the isolation and treatment of those suffering from the disease. It is urged that local authorities, instead of attempting by themselves to provide the trained medical skill and scientific laboratories necessary for effective management, should either utilise existing sanatoriums or combine with other authorities for a properly equipped sanatorium. With this suggestion we are entirely in accord, for as we remarked in a leading article in THE LANCET of April 6th of this year, we have already suffered great disappointment from idle prophecies and ill-considered theories. We would further remind our readers that the ultimate results of open-air treatment have yet to be manifested. Especially in regard to the benefits to be derived by the working classes from "sanatorium treatment" sufficient time has not yet elapsed to enable a definite pronouncement to be made as to the percentage of cases in which absolutely permanent arrest ensues. We are afraid that the hopes freely expressed by the advocates of sanatoriums for the working classes may not be fully justified, and local authorities may well hesitate before expending public funds upon the erection of new buildings. In this report some interesting remarks will be found on "Dispensaries for Pulmonary Phthisis," and we cordially endorse the suggestions that are made. The work of such a dispensary should include (a) the medical examination of patients, either at the dispensary or in their own homes; (b) inquiry by a medical man or a competent nurse into the history of the illness, the home conditions, the economic condition of the family, the occupation, and so on; (c) arrangements for providing medical treatment and nursing of patients who can be treated at home without risk of infection; and (d) dispensing of medicines and disinfectants. These and many other provisions, especially personal and printed instructions to the patients and their friends as to the modes of preventing the spread of the disease, would do more, we believe, to lessen the incidence of the disease than any other measures. The mortality from pulmonary tuberculosis has fortunately greatly decreased of recent years, and we strongly deprecate undue haste in the adoption of stringent regulations which are of doubtful utility and may endanger the social life of the community.

Annotations.

"No quid nimis."

THE MEDICAL PROFESSION AND THE RECENT BUDGET.

No alteration under the recent Budget is to be made in indirect taxation, and direct taxation is responsible for the only two changes which are to be made—viz., a reduction of 3d. in the pound in income-tax on the "earned" portion of incomes which do not exceed £2000 from all sources (the "unearned" portion and incomes, which exceed £2000 still paying 1s. in the pound), and the raising of the death duties on estates of over £150,000. The differential treatment accorded to the "earned" portion of incomes which do not exceed £2000 from all sources will appeal particularly to

members of the medical profession, for the number of medical men dependent for their income upon their professional work, and not receiving £2000 per annum in return for the work is proportionately large. The relief afforded to them by the reduction of 3d. in the pound will be very welcome, but we advise them strongly to see that their accounts are kept in such a way as to show the extent to which they can benefit. Certain alterations are to be made in the matter of the return of incomes. Everyone will be required to make a declaration and to return the amount of his income, even though it is all taxed at the source, and those claiming at the lower rate of 9d. will be required to make their claim before the end of September in each year. Penalties will also be increased and the period of recovery will be extended in cases of evasion. Returns will also be demanded from all employers, requiring them to give not only the names as at present but also the salaries of all their employees. This latter requirement will not particularly affect the practitioner, nor will the increase in the death duties cause the majority of our profession much anxiety. It seems to be taken for granted that a tax of 1s. in the £ is to be the normal tax for the future upon all unearned incomes, even in times of peace. We see that there can be no material reduction of the tax whilst the present Government is in power, pledged as it is to many schemes of reform; but we make this comment in no political spirit, for it is doubtful if any sound Government could introduce a more economical scale of national living in view of the changed conditions of modern life. Whatever party or group of parties comes to power the evolution of our civilisation will be along lines leading to increased expense; and so long as the developments work for the better health and the happier life of the community, so long will the medical profession second the efforts of our legislators.

THE ACTIONS OF FORMIC ACID AND THE FORMATES.

In view of the attention which has been drawn recently to the therapeutic uses of formic acid and the formates it is of interest to refer to a somewhat remarkable book¹ which we have received from Dr. Clement of Lyon dealing with the history of the use of these substances and describing their actions. He claims that these compounds have a musculo-tonic action, increasing the force of contraction and the resistance to fatigue to such an extent that, as determined by Mosso's ergograph, the work done under their action may be five times that under normal conditions. The action is, moreover, not confined to striated muscle, but is equally remarkable upon the non-striated muscular fibres. Dr. Clement claims that after the administration of formates the subjective sensations experienced, usually within 24 hours, are those of a sense of firmness of the muscles and capacity for effort, with an absence of sensation of fatigue and weariness even after prolonged exertion or hard work. He further maintains that the circulation is improved, the respiration is deeper and slower, while the dyspnoea after exertion is markedly lessened. As an instance of its tonic action upon non-striated muscle the effect of formic acid upon the contraction of the bladder of old people is described, since in them it augments the power of the vesical wall and facilitates the act of micturition. It is also said to possess a diuretic action, especially in the form of potassium formate. Analysis of the urine showed that 62 per cent. of the dose given is excreted by the kidney. M. Huchard, who has tested the drug at Dr. Clement's

¹ L'Acide Formique et la Force Musculaire (Formic Acid and Muscular Power). Par le Docteur Clement de Lyon. Paris: Vigot Freres, 1905.

recommendation, confirms its musculo-tonic and diuretic activities and has observed a marked increase in the amount of urine passed by a patient with mitral disease after its administration. Dr. Clement has also obtained good results in certain cases of muscular tremor, notably those associated with enfeeblement of the muscles or hypotonus. A noteworthy advantage of the formates is their lack of toxicity; experiments prove them to be no more poisonous than common salt. Moreover, Dr. Clement has taken formic acid himself daily for two years with nothing but benefit. The substance may be given in the form of the acid itself or in combination as a formate. The manner of using the acid is to administer from four to six grammes of a 50 per cent. solution diluted with water to a third of a litre or a litre, according to taste, the fluid being sweetened or flavoured if necessary. This is divided into two parts and half is taken before breakfast, the other half before the mid-day meal. In case this quantity of acid is disagreeable, it is easy to neutralise it by bicarbonate of soda, the fluid being taken as soon as effervescence is completed. Or the prepared salt sodium formate may be given in daily doses of from three to four grammes. The idea of utilising formic acid was suggested to Dr. Clement by the extraordinary activity of the common ant. He finds that formic acid was a constituent of some of the complex medicaments of former days, notably in Hoffmann's "Elixir of Magnanimity," but it seems probable that formic acid derived from the bodies of ants was used some time before the beginning of the seventeenth century. Dr. Clement is very enthusiastic about the value of formic acid and its compounds and suggests that it will be found to have a social value as well as a medicinal in increasing the working capacity of mankind and in replacing alcohol in conditions of exhaustion and fatigue. His book is an interesting, if sanguine, presentation of his views, and since some of his contentions have been confirmed by other observers it would seem that these substances are worth a more extended trial than they have yet received.

THE OUTLOOK IN MEDICINE.

THE address delivered by Dr. James Grey Glover before the North London Medical and Chirurgical Society on April 11th, which we print on another page under the title "The Outlook of the Medical Profession: Scientific, Social, Financial," cannot fail to awaken the interest of our readers, for all of us have at heart the well-being of our profession, though we may differ at times as to the steps which should be taken to secure it. It is a matter of satisfaction that Dr. Glover, who has devoted so many years of service to the general practice of medicine, and who has held office in the General Medical Council in circumstances which must have given him an extensive knowledge of its many aspects, is able to conclude a comprehensive survey of the professional outlook with these cheering words: "Had I my life to begin again I should study medicine for the intense interest of it, for the companionship of it, and even for the security of a modest income which every earnest and enthusiastic and fairly intelligent man may expect." In spite of the recognition of the disabilities and hindrances which beset the path of the practitioner of medicine, a like cheerful note runs through the whole address, which has been prompted in spirit by the recent action of a French plébiscite of 15,000,000 voters who acclaimed as the greatest Frenchman of the last century Louis Pasteur, the supremacy of his position above that of Napoleon I. being clinched by the verdict of an enormous majority. This great popular voice might well hearten a reviewer of the prospects of medicine as a profession, for if the children of a land where the idea of "*la gloire*" has hitherto been inseparable from that of "*l'armée*" will thus

acclaim the healer above the soldier it may well seem that the civilisations of the future will exalt the healing art into the front rank of honour. We in this country have not yet arrived at the point of sympathy towards scientific achievement which has been reached by at least two other European nations, but the general tributes lately paid to Lord Lister, whose original and patient genius led him to apply to practical surgery the discoveries of Pasteur, show that the public mind in our matter-of-fact country has really been stirred by the story of the development and achievements of antiseptic surgery. The achievements of Pasteur and Lister are the source of Dr. Glover's optimism and those of us who have lived whilst these men were working have undoubtedly witnessed a new birth of medicine. Let us add the name of Virchow with his illuminating conception of a rational pathology and the three—Pasteur, Lister, and Virchow—will stand as witnesses that in the nineteenth century the claims of our profession to the possession of a science no less than an art were set upon permanent foundations. So far, then, we are in accord with Dr. Glover; he has right reason for rejoicing in the scientific advance of his profession. Can we look with equal satisfaction on the social or ethical aspects to which he next draws attention? Into these sides of the professional life many reforms have come, but also there have crept many defects which combine to weigh heavily on the general practitioner and which in some instances have sufficed to handicap him as heavily on the social and financial sides as the medical renaissance we have alluded to above has helped him in his scientific knowledge and treatment of disease. The matters at fault are fairly and clearly indicated by Dr. Glover under their familiar heads and we need not here recapitulate them; we have on previous occasions dealt individually with them and many attempts have been made to remedy them. Dr. Glover's suggested remedy for them all is simple enough and very wholesome—namely, self-help, but self-help is not enough. It is an individual virtue and the medical profession requires, if social development is to keep step with scientific, corporate action upon agreed lines. By all means let the practitioner pay detailed attention to little maladies as well as great; certainly, this will minimise the chances that his patients will drift off into the hands of unqualified persons. It is, moreover, his plain duty, for the little maladies taken early and treated less for what they are than for what they may signify are the finger-posts upon the track of preventive medicine. But the profession as far as the other grievances detailed by Dr. Glover are concerned must face with a united front the abuse of medical charities, the competition of half-qualified persons, and the tyranny of such medical aid societies as are not as reasonable in their actions as their delegates may be when sitting in council. A majority among the medical profession who will face these problems with the cheerful common-sense shown by Dr. Glover is not sufficient for our growing social needs. There are many medical men now ready to act together instead of complaining singly, but the much-needed reforms will not follow until the public interest in the well-being of the medical profession is thoroughly aroused.

MR. G. B. MORGAN AND THE SUNDERLAND INFIRMARY.

ON April 16th an interesting ceremony took place in the Sunderland Infirmary, the occasion being the presentation by the committee of that institution of an illuminated address to Mr. George B. Morgan, who is the senior surgeon, who has been connected with the institution for 50 years, and who for 37 years has held the post of chairman of the medical board. This is a record of which any man.

might well be proud and we join with the committee in congratulating Mr. Morgan and the infirmary upon such an extended term of service. The chairman was Mr. Alderman S. Richardson, who in making the presentation referred to the various improvements which Mr. Morgan's enthusiasm had led to. Through him, for instance, Mr. J. S. G. Pemberton had been led to see the need for a children's hospital and also to give the land for such a building. The introduction of Hospital Sunday and of workmen's subscriptions were also due almost entirely to Mr. Morgan. Many others spoke, amongst them Mr. T. F. Hopgood, a member of the medical staff, who pointed out that to Mr. Morgan was mainly due the abolition of the ticket system, while another point was the improving of the nursing. In reply, Mr. Morgan, after first thanking his friends for their kindness, gave some interesting reminiscences of Sunderland and the infirmary when he first knew it as house surgeon in 1857. Altogether the occasion was a memorable one, both to Sunderland and to the medical profession in general.

A CASE OF LOCAL ANTHRAX COMPLICATED BY PNEUMONIA.

THE circumstances relating to the death of a warehouseman in the employ of a firm of mohair spinners at Bradford were recently investigated by the Bradford city coroner and after some discussion the jury eventually found that death occurred from pneumonia, probably accelerated by anthrax. The history of the case is briefly as follows. A warehouseman, aged 55 years, employed in rooms used for the storage of tops, noils, and waste, complained on March 23rd of feeling unwell and of some slight swelling about his left eye. He was seen by Dr. F. W. Eurich, bacteriologist to the Bradford Investigation Board, which was recently founded to inquire into the increasing frequency in the neighbourhood of cases of anthrax. On March 29th Dr. Eurich found a typical malignant pustule over the left eye involving both eyelids. There was considerable elevation of temperature and signs of disease were observed at the base of the right lung. He subsequently saw the man in consultation with his own medical attendant. The patient was given antitoxic serum to the total amount of 40 cubic centimetres and appeared to hold his own until the evening of April 1st when jaundice supervened and he sank rapidly, dying in delirium on the following day. Dr. Eurich, with the assistance of Dr. Mitchell, made a post-mortem examination and found after bacteriological and microscopical investigation that the pustule was due to local anthrax, but the lung condition was pneumonic, no anthrax bacilli being found in it or in any other of the internal organs. He gave as his opinion that the cause of death was pneumonia, the local anthrax having probably lowered the patient's resisting power. The case is an exceptional one, in the accidental complication of local anthrax by pneumonia, producing grave symptoms and signs very similar to those of the pulmonary form of anthrax and leading to a fatal issue, and also in the association of jaundice, which is recognised as a rare complication of lobar pneumonia, especially when the right lower lobe is involved. The case further illustrates the risks encountered by those engaged in dealing with imported hides, skins, wools, and hairs, even when extreme care is exercised, and enforces the necessity of rigidly carrying out every possible precaution. It came out in evidence that during the last week of his employment the deceased had been engaged in manipulating Turkey and Cape mohair. This mohair had been opened over an efficient sorting board as prescribed by the regulations, and before it reached him had been sorted, washed, and combed, so that it was presumably clean and free from dust. The coroner stated that he was informed

by the Inspector of Factories that the firm who had employed the deceased were second to none in their strict adherence to the regulations, and that they were always willing and anxious to comply with any suggestion made to them. Although in this case death was not directly due to anthrax there is a reasonable probability that the pustule would exert an unfavourable effect upon the course of a disease so serious in itself as pneumonia. The Government regulations require that the sorting of wools shall be carried out over perforated tables with a downward exhaust ventilation, that the dust shall be burnt, and other precautions carried out, but the present case shows that even these are insufficient where dangerous infected wools are concerned. At present the importation of infected material cannot be prevented, while bales of wool are received from certain districts containing inferior and infected fleeces concealed within the bundles, and until some means of overcoming this fraud is forthcoming cases of industrial anthrax are liable to occur in spite of every care and precaution.

UNIFICATION OF THE PHARMACOPŒIAL FORMULAS FOR POTENT DRUGS.

IN THE LANCET of Feb. 23rd, p. 527, reference was made to an international agreement respecting the unification of the pharmacopœial formulas for potent drugs, signed at Brussels on Nov. 29th, 1906. A report has been submitted to the Pharmacopœia Committee of the General Medical Council by the committee of reference in pharmacy, showing what changes in the next issue of the British Pharmacopœia will be necessary to give effect to the international agreement. These changes chiefly affect the strength of preparations of potent drugs and aim at producing uniformity of strength in all countries whose Governments have signed the agreement. Tincture of aconite, which is to be made from roots that have been kept not longer than one year, will be standardised to contain 0.05 per cent. of total alkaloid. In the case of belladonna leaves the drug is to be restricted to the dried leaves, not including, as at present, the flowering tops. The tincture of belladonna is to be prepared from the leaves instead of the root, but the strength would be about the same as now—viz., 0.05 per cent. of total alkaloid. At present there are two official extracts of belladonna, but it is proposed to retain only the leaf extract and to standardise it to contain 1 per cent. of alkaloid. With regard to the other preparations of belladonna, it is proposed that the present standardised liquid extract of the root should be retained and that the liniment, ointment, plaster, and suppository of belladonna should be made from it as at present. It would be necessary to prepare the liniment from belladonna root owing to the high colour of preparations of the leaf, which would render the liniment unpleasant to use. In the case of hyoscyamus the leaf only is to be used for making galenical preparations. It is imperative that the extract of hyoscyamus should be standardised, as all green extracts are liable to vary considerably, and sometimes to a dangerous extent, in alkaloidal content. In the case of nuxvomica the retrograde step has been taken of standardising the seed to contain 2.5 per cent. of total alkaloid. Standardisation to total alkaloid does not insure the presence of any strychnine whatever. The proportion of strychnine to brucine in the total alkaloid has been shown to vary from 1:1 to 1:1.8, from which it follows that the genuine seed, passing the test laid down in the agreement, may vary as much as from 1.0 to 1.4 per cent. in their toxicity. At present the British Pharmacopœia requires preparations of nuxvomica to be standardised on the basis of the strychnine present and in this instance it is very probable that the British Government will be advised to assert its right by Reservation IV. of the agreement to make such modifications in detail as the progress of

science may from time to time render necessary. The time-honoured official name of *Dover's powder*, *pulvis ipecacuanhæ compositus*, will in future be replaced by the more descriptive name, *pulvis opii et ipecacuanhæ compositus*. In many cases the adoption of the standards agreed upon will considerably increase the strength of official preparations of potent drugs. It is agreed that tinctures of potent drugs shall be prepared of the strength of 10 per cent. and fluid extracts of the strength of 100 per cent. As a result tincture of *strophanthus* will be made four times as strong as the present tincture, the strength of tincture of *cantharides* will be increased rather more than six and a half times, that of ethereal tincture of *lobelia* twice, and that of tincture of iodine three and one-third times, while tincture of opium would be made one-sixth stronger than at present. In the case of tincture of iodine much trouble may result from the large increase in strength of a preparation so widely used for external application. The strengths of the following preparations will be reduced: tincture of *colobicum* seeds by one-half, tincture of *digitalis* by one-fourth, tincture of *nux vomica* by one-half, and syrup of ferrous iodide, the strength of which will be considerably diminished. The strength of mercurial ointment will have to be reduced by rather more than one-third, an alteration which will correspondingly affect the various preparations into which the ointment enters. These alterations in the strength of official preparations will involve corresponding alterations in the doses, and in some cases great care will have to be taken to avoid serious mistakes through the administration of excessive doses. This is particularly the case with tincture of *strophanthus*, which when increased in strength will have a dose of from one to five minims. As indicated in the annotation referred to above the various changes proposed will not come into effect until the publication of a new British Pharmacopœia.

THE SOILING OF THE OMNIBUS FLAG.

Two years ago when discussing the hygiene of the London streets in relation to the increasing motor traffic we remarked, with an obviousness that is more apparent now than it was then, that whereas the chief source of the pollution of the streets was the excreta and emanations of horses it would be in the near future the products of perfect and imperfect combustion of petrol. This prediction was soon realised and we have now to face the new pollution and to consider whether it is worse than the old. Previously the pollution was chiefly biological, now it is chemical, or, to be accurate, it is both, with a rising tendency in the latter direction. Pathogenic organisms may therefore give way to poisonous gases, but hygiene condemns the existence or encouragement of either. On the whole we think that, owing probably to the increased vigilance of the police authorities over the motor traffic, the nuisance arising from fumes and smell of imperfectly ignited petrol or of over-heated lubricating oil has been reduced for the moment to some extent. There is a daily test being carried on (no doubt unwittingly) by at least one of the motor omnibus companies which seems to us to be faithfully recording the fact that the air of the London streets is not so clean as it used to be. We refer to the flag carried as a distinguishing mark by certain motor omnibuses. There is not the least doubt that the colours of this flag are besmirched much more quickly than in the days of universal horse-drawn traffic. In many cases the flag is practically black and the pattern can barely be recognised. This result is hardly surprising when we consider the miles and miles of street air into which motor gases and smoke are being discharged and through which the tell-tale flag is daily

trailed. We should not be surprised to find that in treating this smoke-begrimed flag with a suitable solvent a greasy extract would be obtained having a smell which might fairly be traced to petrol. In connexion with this point we may refer also to some complaints which we have heard from householders and house decorators that since the great increase in motor traffic the external paint of many houses has shown more rapid signs of deterioration than was ever experienced before. It is easily conceivable that an atmosphere containing oily fumes would attack the oil of the paint and thus expose the lead compound to the blackening action of the sulphur present in the smoke discharged from the chimneys.

STATISTICAL INVESTIGATIONS OF PULMONARY TUBERCULOSIS.

UNDER the title of "A First Study of the Statistics of Pulmonary Tuberculosis," Professor Karl Pearson of the Biometric Laboratory, University College, London, has contributed an interesting paper to the Drapers' Company Research Memoirs (Studies in National Deterioration).¹ The investigation in question is based upon a series of family histories placed at Professor Pearson's disposal by Mr. W. C. Rivers of the Crossley Sanatorium, Frodsham, Cheshire. The records were made by the medical men of that institution and applied in both subject and family history to cases of pulmonary tuberculosis only. The patients were almost wholly of the lower middle and working classes and came principally from Manchester. Questions relating to various aspects of heredity are the leading subjects of the present paper and may be conveniently summarised under the headings of (1) the inheritance factor in pulmonary tuberculosis; (2) fraternal heredity; (3) the fertility of tuberculous stocks; and (4) the distribution of pulmonary tuberculosis in tuberculous families. It will here be sufficient to give a brief abstract of what is said on the subject of the parental transmission of the tuberculous diathesis. In using the data obtained from Crossley Sanatorium as a basis of computation it is at the outset remarked that pulmonary tuberculosis is a disease the frequency of which culminates between the ages of 20 and 30 years. Hence many patients, if members of large families, have brothers and sisters who have not yet passed or have perhaps even not yet reached the danger zone. The number of brothers and sisters of a patient who are also tabulated as suffering from the disease is therefore a minimum limit and not a real measure of the extent of the disease in a family. For this reason, although the actual Crossley records only show about 32 per cent. of the offspring of tuberculous parents to be themselves tuberculous, 50 per cent. is the proportion adopted in the computations, and the further assumption is made that the proportion of tuberculous persons in the community at large is from 10 to 13 per cent. From all these figures several values of the correlation coefficient (r) are obtained by six biquadratic equations of the form

$$A = r + Br^2 + Cr^3 + Dr^4,$$

the constants which we have called A, B, C, D, being represented by various positive and negative numbers lying between 1.155432 and 0.017452. From the values of r so obtained Professor Pearson concludes that the intensity of the inheritance factor in pulmonary tuberculosis is greater than 0.4 and less than 0.6—an inheritance factor closely approaching that of certain physical characters in man. He is convinced that the perpetuation of the disease in families cannot be explained by infection but only by the inheritance of the tuberculous diathesis, and he complains of the "anti-social disregard for national eugenics in the conduct of medical men who can write to the public press that the marriage or

¹ Published by Dulau and Co., 37, Soho-square, London, W. Price 3s.

even intermarriage of members of tuberculous stocks is of no social detriment, provided they live with a good supply of fresh air." An interesting point subsequently touched on is the heavier incidence of tuberculosis in the older offspring of tuberculous parents as compared with the younger offspring.

PERICOLITIS.

In the *Medical Chronicle* for April Mr. W. H. Newton publishes a graduation thesis on Pericolicitis, a condition which has received little attention, and its literature is still very scanty. In 1890 Windscheid first described a disease characterised by acute swelling on the right side of the abdomen, fever, and pain which he thought was due to circumscribed peritonitic exudation around the ascending colon.¹ Pericolicitis may occur in any region of the colon. The commonest site is the descending colon, especially the lower part. Dr. H. D. Rolleston has described this form as "Pericolicitis Sinistra"—a condition which produces symptoms resembling those of appendicitis but on the left side of the abdomen. In the majority of cases constipation plays a prominent part in the production of pericolicitis but in some cases there is no history of it. Of the pathology little can be said, because there is a lack of post-mortem data. Dr. Rolleston suggests that faecal accumulation gives rise to inflammation of the mucous membrane and other coats of the colon and, by extension to local peritonitis. There is an objection to this view; inflammation of the mucous membrane would probably cause diarrhoea but in the majority of cases constipation exists. A hypothesis which escapes this objection is that hard faecal masses cause small tears or abrasions of the mucous membrane and allow the passage of microbes into the sub-mucous tissues, whence they are carried by the lymphatics into the connective tissue surrounding the colon and set up inflammation. This is comparable to the spread of inflammation from the uterus in perimetritis. Another hypothesis is suggested by the fact that in a certain proportion of the subjects of constipation acquired diverticula of the colon are found. The faeces tend to accumulate in, and to enlarge, these diverticula. Thus, a condition somewhat resembling that of the vermiform appendix arises and an inflammation analogous to appendicitis may occur. Severe inflammation may occur around a diverticulum and an abscess may be formed or perforation of a diverticulum into the peritoneal cavity may take place, producing general peritonitis. Another cause of pericolicitis is injury. In two cases recorded by Mr. D'Aroy Power there was a history in one of kicks and in the other of blows on the abdomen. Other causes are leakage from ulcers (typhoid or stercoral) of the colon. As pointed out by Dr. Rolleston, the symptoms may be divided into three groups—(1) those of slight local peritonitis; (2) those of local abscess; and (3) those of general peritonitis. In the case of the first group resolution may occur, leaving no trace of the inflammation, or the inflammation may become chronic. But intestinal obstruction may result. Mr. W. Arbuthnot Lane has stated that he has often seen on the operating table the ascending colon, especially near the hepatic flexure, bound down to the abdominal wall by adhesions the result of constipation.² Some cases, he says, have been operated on under the diagnosis of appendicitis; the appendix was sometimes found normal, sometimes slightly diseased. After its removal the symptoms continued and were relieved by dividing adhesions around the hepatic flexure of the colon. Similar adhesions may also occur in the descending colon. The treatment in simple cases consists of rest in bed and the relief of the constipation by enemata, or

the removal of scybalous masses by mechanical means be necessary. If the pain is severe hot fomentations or application of an ice-bag may be required. In the cases with adhesions it may be necessary to open the abdomen and to divide the adhesions. Afterwards the bowels must be kept freely acting, for if the constipation re-adhesions may re-form. In intractable cases Mr. Arbuthnot Lane has advised anastomosis of the ileum to the sigmoid flexure or rectum. In cases of abscess the abdomen should be opened and the abscess drained. In cases of general peritonitis immediate closure of the perforation and drainage of the abdomen are indicated.

THE EPIDEMIOLOGY OF MALTA FEVER.

Colonel David Bruce, R.A.M.C., has summarised succinctly the remarkable results obtained by the commission sent to Malta by the Royal Society to investigate and if possible to find out the cause of Malta fever.¹ Colonel Bruce passes in review all the chief peculiarities of the disease; as regards its geographical distribution he shows how it has disappeared from Gibraltar and how it is found in South Africa, China, India, the Philippine Islands, and America. The clinical symptoms are briefly detailed, such as its long, irregular temperature curve and the presence of rheumatic and neuralgic features. It has long been known also that the better the social position the greater is the liability to the disease. It is a disease prevalent all the year round in Malta, although markedly increasing in summer. It is not, as until recently was supposed, restricted to the neighbourhood of the Grand Harbour, but is very generally distributed over the entire island. How great is the invaliding caused by it is manifest from the yearly incidence of 37·6 per 1000 amongst the soldiers and 28·5 per 1000 amongst the sailors, and as the average duration of the illness is four months, 624 soldiers and sailors are in hospital 120 days, which makes 74,880 days of illness. The members of the commission set to work to determine how it was that the micrococcus *Melitensis* left the body, how it behaved outside the body, and how it again gained entrance into the body, and as the result of their inquiries they determined that it left the body by the urine. Outside the body the organism was found to be fairly resistant to external influences, except to direct sunlight which killed it in a few hours. Does it gain an entrance by contact? No case has been known of its arising among the patients, orderlies, or nursing sisters from any of the patients invalided home to our naval or military hospitals. The commission also failed to find any evidence that inhalation of infected dust or mosquitoes played any prominent part. But Malta fever can be conveyed to healthy animals by way of the alimentary canal. A single drink of fluid containing but few micrococci almost certainly gives rise to the disease. But the commission at first saw no reason for suspecting the water-supply or any particular foodstuff. At length, however, it was discovered that the goats in Malta acted as the reservoir of the virus of this fever, for 50 per cent. of these animals in Malta responded to the agglutination test and actually 10 per cent. were found to be secreting the micrococcus in their milk. Monkeys fed on milk from an infected goat, even for a day, almost invariably took the disease. The example of Gibraltar clinches this opinion that the infection is propagated by the goats, for the disappearance of Malta fever from the Rock is associated with the disappearance of the Maltese goat from the Rock. Preventive measures in accordance with this discovery were begun in Malta in June, 1903, and a remarkable diminution of the fever at once set in;

¹ Deutsches Archiv für Klinische Medicinische, Band xlv.

² THE LANCET, April 1st, 1905, p. 856.

³ THE LANCET, Jan. 17th, 1903, p. 153.

¹ Recent Researches into the Epidemiology of Malta Fever. By Colonel David Bruce, O.B., F.R.S., R.A.M.C. (reprinted from the Journal of the Royal Army Medical Corps, March, 1907). London: John Bale, Sons, and Danielsson, Limited. 1907. Pp. 11.

the cases have dropped to one-tenth of what would have been their normal number, whilst since goats' milk has been forbidden in the Royal Naval Hospital not a single case has occurred or can be traced to residence in the hospital. The commission of the Royal Society would thus seem to have made a most valuable discovery. Colonel Bruce considers that Malta now has a chance of being converted from one of the unhealthiest stations of the British navy to one of the most salubrious, and the expectation is founded upon solid arguments. The Royal Society and the members of the commission are to be congratulated on the investigation.

A TWIN OVUM IN A TUBAL PREGNANCY.

IN THE LANCET of March 30th, p. 881, Dr. Allan F. Rutherford described a very interesting case of a twin ovum in a tubal pregnancy which he had removed by abdominal section. This condition is one of considerable rarity but a sufficient number of cases have now been recorded to show that in this variety of multiple gestation the two ova may be situated in the same tube, or one in either tube, or an intra-uterine may be associated with an extra-uterine pregnancy. When the two ova are found in the same tube most commonly there is one foetal sac common to the two. Unfortunately, it is not quite clear from the description of Dr. Rutherford's specimen whether the two ova were contained in a single chorion with a single placenta or not, although the illustration shows that each foetus was inclosed in its own amnion. A not inconsiderable number of cases have now been described of a tubal twin pregnancy with a single foetal sac, but very few have been met with in which the two ova in separate sacs were attached to different portions of the same tube. Some instances of this arrangement have, however, been reported, one of the earliest being that of Boehmer cited by Webster, in which the tube was enlarged in two different parts, one of which contained an early ovum and the other an ovum converted into a mole. In a case recorded by Saniter one ovum was situated in the isthmal portion of the tube and had apparently reached the third or fourth week of development, while the other sac in the neighbourhood of the abdominal ostium contained an ovum four centimetres long. Twin ova enveloped in the same foetal sac form, as we have said, the commonest variety and have been found not only in the early but also in the later months of an extra-uterine gestation. In a case described by Krusen the condition was one of triplets, the three foetuses, all about the second month of development, being found in the blood mass of a hamatocoele, the burst sac occupying the ampulla of the tube. In a most remarkable case recorded by Folet, in which the extra-uterine sac probably had existed for some 18 years, both foetuses were mummified. One had attained almost full term, while the second, which was flattened out against the sac wall, was of the size of a three months foetus; there was a single placenta. That the foetuses in most of these observations are of very different degrees of development is no doubt to be explained by the imperfect growth of the two placentae, the direct result of their extra-uterine attachments, since unequal development of twins in utero is of relatively uncommon occurrence. The third combination in which both tubes are involved in the pregnancy has so far only been met with in the early months of pregnancy. One of the best known cases is that of Walter; in this instance both tubes contained a hamatoma in one of which there was a foetus six centimetres long in the amniotic cavity, whereas in the other the amniotic cavity was compressed and empty in the middle of the blood mass. In a case recorded by Werth an operation undertaken for the removal of a hamatocoele of recent formation revealed the presence in the opposite right tube of an unruptured tubal gestation. In another case operated upon by the same surgeon the left tube contained a

hamatoma and the right tube, the abdominal end of which was closed by old adhesions of some standing, a foetal sac with no trace of any embryo. In this case it appears probable that the ovum contained in the right tube may have come from the left ovary by internal migration, judging by the fact that the obliteration of the abdominal end of the right tube appeared to date from a period anterior to the commencement of the twin tubal pregnancy. These varieties of multiple pregnancies are of much interest and all such cases should be carefully recorded.

EPIDEMIC CEREBRO-SPINAL FEVER.

THE epidemic of cerebro-spinal fever continues without much alteration in its incidence. In London during the last few days one case has been reported in the borough of Finsbury and one in the borough of Stepney. Since March 26th, when the order requiring the notification of the disease came into operation, 24 cases have been reported to the London County Council. Cases have also occurred at Liverpool, at Smethwick in Staffordshire, at St. Germans in Cornwall, at Chilvers Coton in Warwickshire, at Whitwell in Derbyshire, at Newburn in Northumberland, at Wrexham in Denbighshire, and at Crewe in Cheshire. In Scotland during the week ended April 20th there were 18 deaths from the disease registered in Glasgow, ten in Edinburgh, six in Leith, two in Greenock, and one in Dundee. The weekly return of the Glasgow sanitary department issued on April 19th showed that there were at that time 112 cases under treatment. In Edinburgh from March 1st to April 22nd there were 66 cases with 42 deaths. Other cases have occurred at Plains near Airdrie, at Haddington, at Kirkcaldy, and at Kirkintilloch. In Belfast 30 fresh cases have been reported during the past week. There has now been in this city a total of 313 cases with 200 deaths.

FURTHER EFFECTS OF RECENT LEGISLATION ON THE DRUG TRAFFIC IN THE UNITED STATES.

IN the March number of the *American Journal of Pharmacy* further evidence is given of the salutary effects of the Pure Food Act, to which reference was made in THE LANCET of Feb. 9th, p. 373. Since the Act has become effective the products of certain large packing houses, which were formerly labeled "potted ham" or "potted tongue," now bear the names "potted meat, ham flavour," and "potted meat, tongue flavour." The substance has not been changed but it is now designated by its right name. Again, for many years the public in the United States have been deceived into buying coffee from which "the poisonous caffeine and the poisonous tannic acid have been removed." Preparations such as these are impossible to prepare without completely destroying the properties of the coffee and it is satisfactory to find that under the new law they are amenable to the section on misbranding. Turning to drugs, one of the most important effects of the Act consists in the numerous changes that have been made in well-known nostrums which formerly contained alcohol, morphine, cocaine, chloral hydrate, cannabis indica, acetanilide, and other drugs of a poisonous nature named in the Act. As a declaration of the presence of any of these drugs must now be made on the label the manufacturers have generally altered the formulae rather than admit their presence. The medical profession as much as the public has been fooled in this way. Mixtures of acetanilide and other ingredients which were formerly exploited as definite chemical compounds are now being sold as mixtures and, in some cases at least, their composition has been totally changed. Thus, ammoniac now bears upon the label the name "ammonium phenylacetamid" and it is

admitted to contain "240 grains of paracetyl-phenetidin" (in plain English, phenacetin) in each ounce. In regulating the sale of narcotic drugs a strong blow has been struck at one of the most insidious evils of the nostrum traffic. Instances have come before the authorities at Washington, e.g., in the case of several remedies for catarrh, in which manufacturers have brazenly admitted the addition of morphine or cocaine to their nostrums in order that their continued use might be assured. It is almost incredible that a manufacturer should stimulate the sale of his wares in this way and grow rich by the production of thousands of narco-maniacs. But unfortunately a similar condition of things obtains in this country at the present time without a legal remedy. In regard to self-drugging, the full extent of the mischief is only known to members of the medical profession. A more stringent control of the sale of food and drugs, especially the latter, is called for in this country, but it will require strong hands to pilot a satisfactory measure. It would be easy to control the manufacturers; the main difficulty rests with the advertising managers of newspapers.

FATAL AIR EMBOLISM FROM PUNCTURE OF THE LIVER WITH AN ASPIRATING NEEDLE.

In the *Journal of the Royal Army Medical Corps* for April Lieutenant N. Low, R.A.M.C., has reported a case of a rare accident in puncture of the liver for abscess. A thin, sallow gunner was admitted into hospital on May 9th complaining of pain in the right shoulder. He had not felt well for three months. The evening temperature was 102°·2° F. The lower border of the liver could just be felt below the ribs. In the scapular line dulness extended up to the eighth rib. On the 11th the liver dulness had increased so as to extend three fingers' breadth below the costal margin. On the 13th it was proposed to explore the liver. Under chloroform an aspirating needle three inches long was inserted in the lowest intercostal space in the anterior axillary line and pushed into the liver. Instantly there was a loud hissing noise as of air being sucked in and respiration stopped. One or two feeble beats were felt at the wrist and then the pulse stopped. Lieutenant Low put his thumb over the end of the needle to prevent any further entrance of air. When the air rushed in the right side of the face twitched sharply for a moment, the pupils widely dilated, and the face became livid. Attempts at resuscitation failed. At the necropsy one and a half pints of blood were found in the peritoneal cavity. The right cavities of the heart were filled with frothy blood and air bubbles. The base of the right lung was adherent to the diaphragm above an abscess in the right lobe of the liver. The liver was much enlarged and weighed 116 ounces. The needle puncture was in the right lobe two inches above the lower margin; a small clot adhered to it. On cutting down upon a probe passed into the wound it was found that a large branch of the portal vein had been opened. On squeezing the liver frothy blood and air bubbles issued from the vein. The upper portion of the right lobe was occupied by an abscess of the size of the foetal head, containing 32 ounces of pus and surrounded by a fibrous wall a quarter of an inch thick.

THE Oliver-Sharpey lectures of the Royal College of Physicians of London will be delivered by Dr. W. D. Halliburton on Monday and Tuesday, April 29th and 30th, at 5 o'clock, at the College, Pall Mall East, the subject being *New Facts in Relation to the Processes of Nervous Degeneration and Regeneration*.

THE Department of Public Health of Queensland in a bulletin dated March 16th reports a case of bubonic plague in a male aged 23 years, who was attacked on

March 10th. In the same bulletin the health officer of Port Douglas reports 6 fresh cases of plague admitted to the hospital during the week ending March 16th. As regards the Mauritius a telegram from the Governor received at the Colonial Office on April 19th states that during the week ended April 18th there were 2 cases of bubonic plague and no deaths from the disease.

WE have several times alluded to the fact that a committee has been sitting to discuss the possibility of starting a coöperative plan by which medical men can be insured upon favourable terms against the risks of the Workmen's Compensation Act, 1906. The negotiations with various insurance companies have been tedious, but the definite result of the work of the committee will shortly be published.

THE INTERNATIONAL BUILDING TRADES EXHIBITION.

THE International Building Trades Exhibition, which was held at Olympia from April 8th to 20th, was a great success and we take pleasure in recording this fact since the exhibits in so many instances were striking illustrations of hygienic advances. Public health, indeed, was written large on almost every stall, and the visitor intent on acquainting himself with new departures in sanitary applications in relation to house construction ought to have been very pleased with what he saw, while a satisfactory feature of the exhibition was that the demonstrations were in many instances illustrative of the attempts being made to bring domestic comforts framed upon sanitary principles within the reach of the poorer classes. A very interesting section also which concerns the comfort of us all was that known as the "Surveyor" section in which were shown examples of the way in which roads are "metalled" and of the attempts to deal with motor problems. Besides, there were illustrations and working models of water-supply, refuse collection and disposal, sewage disposal, and other departments of municipal engineering work.

We do not pretend to give more than a short reference to those exhibits which seemed to us to be of direct sanitary significance, seeing that in the words of the organisers "the whole of the spacious building, ground floor, gallery, and even the annexe, was crowded to the last available inch with exhibits—a record for a trade exhibition in any part of the world." It speaks well for the energy of those responsible for it that such an exhibition should have been got together, but one disparaging word we are bound to add: the ventilation of the vast building left much to be desired. The interest of the exhibition was marred by a stagnant impure air; the crowd of visitors was great and many complained of a splitting headache, which may safely be attributed to the dust and foul air present.

Amongst the first exhibits brought to the notice of the visitor were specimens of a beautiful material for rendering floors fireproof shown by the Stonwood Fireproof Flooring Company, Limited, of 109, Victoria-street, Westminster, London, S.W. The floors are stated to be warm to the feet, fire-resisting, and proof against water and dampness. They have been employed in hospitals, schools, and factories. Illustrations of the application of fireproof sheeting known as Dovetail corrugated steel sheeting were given by the Fireproof Company, Limited, of 10, York Buildings, Adelphi, London, W.C. A device for obviating dampness and decay was exhibited by Mr. A. W. Andernach (agency, 30, Patshull-road, Kentish Town, London, N.W.), consisting of the Kosmos grooved slabbing, as it is called, which acts by encouraging a circulation of air in the walls themselves. Specimens of slag wool and silicate cotton as a vehicle for fireproof partitions were shown by Messrs. Fred Jones and Company, of 1, 2, and 3, Perrin-street, Ryland-road, London, N.W. Messrs. Elkay and Comes, of Bath House, 59, Holborn Viaduct, London, E.C., have recently introduced a very ingenious folding bath in various types for mansion or cottage. The cabinet folding bath, made of enamelled sheet steel, is designed for bedrooms or dressing-rooms and when

not in use the bath tips up into the cabinet and the floor-space then occupied is 2 feet 1 inch deep and 2 feet 9 inches wide. In the same way a folding bath without cabinet is made for villas, bungalows, artisans' dwellings, servants' quarters, &c. This can be fitted in a 2-foot cupboard or in a recess. An exhibit which attracted a good deal of attention was that of Messrs. Thomas Potterton of the Cavendish Works, Balham, London, S.W. It consisted of a model of a domestic hot-water service in a large mansion worked from the "Rex" kitchen, no second fire being needed for warming the various rooms in the house, since these are provided with radiators on the same service. The Patent Adjustable Bath Company of 31, Broad-street, Birmingham, exhibited a specimen of their tip-up bath as in use at the employees' cottages at Messrs. Cadbury's works at Bourneville. The Silicate Paint Co. of Charlton, London, S.E., presented to view a model cottage decorated inside and out with "Duresco," a washable wall paint made durable, as its name implies, by a silicating process. The Newellite Glass Tile Company, Limited, of Shenton-street, Old Kent-road, London, S.E., exhibited specimens of glass tiles which, while presenting a clean impervious surface, are said to be free from the tendency to craze or crack and to be specially adapted for hospital construction. The sanitary exhibits of the Sanitary Appliances Syndicate, Limited, of 68, Victoria-street, Westminster, London, S.W., were very numerous and comprised "The Only" silent closet fitted with polished brass valve and gun-metal working parts. The utmost flush necessary is two gallons and there is no ball valve. Several modifications of this closet were shown, all designed to meet sanitary requirements and to eliminate offence; as well as gullies, tidal valve and traps for drain connections, inlet air valves, urinals with hand-flushing arrangement, flushing cisterns, and domestic water tanks possessing some claim or other from a hygienic standpoint. Examples of Hall's washable sanitary distemper were given at the stall of Messrs. Sissons, Bros., and Company, of 199a, Borough High-street, London, S.E., while close by were "well" fires shown in working order by the Wellfire Company of 33, Dover-street, Piccadilly, London, W. Messrs. John Knight and Sons of 24, Gertrude-street, King's-road, Chelsea, London, S.W., exhibited their cast iron inspection and disconnecting chambers for drainage work, besides their sealed internal gullies and manhole covers. Messrs. G. A. Williams and Son of 21, Queen's-road, Bayswater, London, W., brought to the notice of the visitors their patent open-air sleeping chamber and their "invisible" outside blind. The Gypsum Mines Company, Limited, of Mounthfield, Robertbridge, Sussex, showed specimens of their "Sirapite" Plaster which was used in the London hospitals for restoring interior walls and as a backing for glazed tiling. The patent bucket fire extinguisher of Messrs. Messer and Thorpe of 54, 56, and 58, Gedling-street, Dockhead, London, S.E., is well worth mentioning and consists of a number of fire buckets telescoped together which can be so submerged in water that on being taken out they each and all come out full. A somewhat revolutionary and attractive proposal in regard to methods of domestic heating is that of Messrs. James Prior and Co. of the Empire Works, Holliday-street, Birmingham, who gave a working demonstration of the method of heating bedrooms and hall with the waste heat from the sitting-room fire by means of the "Venetian" grate and heat distributor. The London Warming and Ventilating Company, Limited, of 20, Newman-street, London, W., exhibited their ingenious "Florence" warm-air and ventilating grate. The smoke is drawn through the fire to a point where it becomes incandescent and the automatic shaking bins clean the fire of ashes and dust, thus providing free access of air at a high temperature through the fuel. A very handsome exhibit, comprising a series of model bathrooms with the latest patterns of sanitary appliances, was shown by Messrs. Shanks and Co., Limited, of 81, New Bond-street, London, W. The porcelain enamel used in the baths calls particularly for a word of praise. The exhibit included urinals, lavatory sinks, and basins. Messrs. Davis, Bennett, and Company of the Westminster Sanitary Works, Horseferry-road, London, S.W., exhibited a number of luxurious sanitary appurtenances, including bath-rooms, water-closets, lavatories, and so forth. The Ajax basins and sinks of the Ajax Sanitary Company, Limited, of 49, Stamford-hill, London, N., are well worthy of mention, inasmuch as these sanitary apparatus illustrate an important improvement consisting of an outlet and overflow passage in a recess at the back, front, or side, and a shutter or sliding valve. As might have been anticipated, Messrs.

Doulton and Company's exhibit (Lambeth Potteries, London, S.E.) was most comprehensive and included a really handsome display of sanitary appliances, such as bath-room fittings, lavatory accessories, water-closets, sinks, drains, and glazed pipes, besides an installation of fireplaces and mantelpieces in glazed ware.

In the "Surveyor" section Messrs. Horsfall of Lord-street works, Whitehall-road, Leeds, exhibited a model of their "tab-feed" refuse destructor, as well as of their "cupola" type destructor and a forced draught smoke-consuming furnace. The exhibit included some specimens of clinker flags, &c. Close by were various specimens of "tarmac," shown by Tarmac, Limited, of Ettingshall, Wolverhampton. "Tarmac" is manufactured from ironstone slag, impregnated with tar oils. Roads made with it are said to be free from dust, mud, or grease. The Ames-Crosta Sanitary Engineering Company, Limited, of City Chambers, South Parade, Nottingham, exhibited their sewage disposal specialities, including the "Simplex" automatic sewage sprinkler and the "Coleman" automatic sewage valve worked by a mercury balance. The "Ames" tiles also should be mentioned as a simple device for ensuring drainage and aeration of bacteria beds and for the flooring of water filter beds. The Candy Filter Company of 5, Westminster Palace-gardens, Artillery-row, Westminster, London, S.W., exhibited plans and drawings of installations of the Candy patent automatic compressed air and oxidising water-works filters as well as samples of "oxidium," a mineral oxidising substance for purifying water. At the same stall were working models of the Candy-Whittaker sewage distributor. Messrs. Ham, Baker and Co., of 13, Grosvenor-road, Westminster, London, S.W., similarly exhibited their ingenious travelling sewage distributor for rectangular filter-beds and a number of other sewage engineering appliances. "Tarspra" of Tarspra, Limited, of 20, Victoria-street, Westminster, London, S.W., is said to have solved the "dust" and "skid" problem of the roads. Hundreds of miles of roads, it is stated, can be treated with "tarspra" in a few weeks. Mr. William E. Farrer of Star Works, Cambridge-street, Birmingham, exhibited his improved automatic sewage distributor, which appears to be particularly well adapted for small installations—as, for example, country houses. Close by was a working model of the "Sterling" refuse destructor (Messrs. Hughes and Co., 7, Arundel-street, Strand, London, W.C.), which is said to do its work very effectually and without causing the slightest nuisance. An example of obtaining power from waste could be seen in the destructor of Messrs. Heenan and Froude of 4, Chapel-walks, Manchester. In the same section Messrs. George Jennings, Limited, of Lambeth Palace-road, London, S.E., exhibited a number of "up-to-date" appliances connected with the disposal of sewage, while Messrs. Defries and Son, Limited, of 146 and 147, Houndsditch, London, E.C., exhibited illustrations of their Equifer steam disinfecting appliances. The latest form is fitted with an automatic apparatus by which no record can appear on the automatic recording gauge until the evacuation of air from the disinfection chamber is complete, thus preventing disinfection from being imperfectly carried out with an admixture of air and steam.

Altogether the exhibition was of the greatest interest from a hygienic point of view, and we have no doubt that it was very generally supported and appreciated by the building trades.

BRITISH MEDICAL BENEVOLENT FUND.

At the March meeting of the committee 19 applications for assistance were considered and sums amounting to £193 voted in relief of 18 of the cases, one being postponed for further inquiries. Two annuities of £20, vacant through death, were filled by the election of approved candidates. Appended is an abstract of the cases which were helped:—

- Daughter, aged 50 years, of late M.R.C.S. Health too indifferent for regular work. Slight help from a relation. Voted £5.
- Widow, aged 65 years, of L.F.P.S. Glasg. No income. Very bad health. Dependent on a daughter who is a waitress. Relieved once, £12. Voted £5.
- Daughter, aged 57 years, of late M.D. Abern. Dependent on small and decreasing earnings from teaching music. Health indifferent. Voted £10.
- Daughter, aged 74 years, of late M.R.C.S. Only income five guineas a year from a charity. Health indifferent and sight failing. Voted £12.

Wife, aged 42 years, of L.R.O.P., L.R.O.S. Edin. Applicant's husband has practised for many years as assistant in Lancashire but lost his reason a few months ago and is now confined in an asylum. No income. Two children at school. Voted £15.

Daughter, aged six years, of late L.R.O.P., L.R.O.S. Edin. At father's death, two years ago, applicant had to go to the workhouse but has been removed by an uncle of extremely small means. Voted £3, payable to the uncle.

M.D. Edin., aged 68 years. Used to be well provided for but lost his capital through the failure of a home for inebriates and other misfortunes. Is now unable to practise on account of ill health. No children. Voted £18.

Daughter, aged 65 years, of late M.D. Unable to obtain remunerative work on account of age. Relieved nine times, £79. Voted £12.

Widow, aged 47 years, of M.R.O.S., L.S.A. Supports herself as a housekeeper and is obliged to help an invalid son. Relieved eight times, £100. Voted £10.

Widow, aged 35 years, of L.R.O.P. Edin. Endeavours to support herself by nursing. Two children, aged 12 and three. Relieved three times, £30. Voted £10.

Widow, aged 68 years, of L.F.P.S. Glasg. Nine children, of whom six are self-supporting and able to give a little help but three still dependent. Relieved eight times, £120. Voted £25.

Widow, aged 59 years, of M.R.C.S. Eng. No income; children unable to help; health very indifferent. Relieved once, £12. Voted £12.

Daughter, aged 64 years, of late M.R.C.S. Only income an annuity of £20 from a charity. Relieved twice, £12. Voted £3.

Widow, aged 60 years, of L.R.O.S. Edin. Income £18 a year. Receives a little help from a son. Is in very bad health. Relieved five times, £50. Voted £12.

Widow, aged 44 years, of L.R.O.P., L.R.O.S. No income; slight help from a son, who is a sailor. Relieved three times, £27. Voted £12.

M.R.O.S., L.S.A., aged 67 years. Has been incapacitated for some years by paralysis and heart disease. Receives a small superannuation allowance. Eight children, only able to give slight help. Relieved five times, £75. Voted £15.

Widow, aged 46 years, of M.B., O.M. Income £20 a year; receives slight help from her father-in-law and takes boarders. Seven children, aged 16 to eight. Health indifferent. Relieved eight times, £30. Voted £12.

Daughter, aged 49 years, of late M.R.O.S. Income £8 a year; practically disabled by an accident. Relieved once, £5. Voted £12.

Looking Back.

FROM

THE LANCET, SATURDAY, April 25th, 1829.

FOREIGN DEPARTMENT.

M. BROUSSAIS.

WE are glad to see, that the gastro-enteritido mania of our neighbours is at last gradually subsiding; indeed, whatever share M. Broussais' arrogance* may have had in securing to his doctrine the extraordinary applause it met with, this was, we apprehend, still more owing to the commodiousness of his principles. How could it be otherwise than acceptable to many, at once to render unnecessary the study of pathology and therapeutics, by proclaiming gastro-enteritis to be the only disease, and the application of leeches as the only remedy.

Our readers will be greatly amused by a description of the manner in which the medical practice is carried on at the Hôpital Val de Grace; taken from the inaugural dissertation of a young physician who attended there as a pupil.

"When I," he says, "was appointed one of the dressers at the hospital, I had but a very incorrect notion of the 'doctrine physiologique.' It having, in this capacity, become my duty to examine and prescribe for the patients, who had been admitted after the regular morning visit of the physician, I was not a little uneasy at my responsibility, until one of my colleagues set my mind perfectly at ease, by the manner in which he managed the affair. The only thing was to ask how many new patients there were in attendance, and then to order a sufficient number of leeches, to allow thirty for each patient. Thus armed, he went through his wards, where he had only the trouble of applying his leeches either to the abdomen or to the anus, an alternative which had already been settled by the 'infirmier,' who asked each patient at his entrance, whether he had diarrhoea or pain in the abdomen, and in the former case, placed a piece of oil-cloth between the legs, in the latter, over the abdomen; by these symbols, the young practitioner knew at once where to apply his thirty leeches, whether to the anus or abdomen, and, indeed, he hardly ever

had to complain of incorrectness in the 'infirmier's' diagnosis and plan of treatment."

* In the preface to the second edition, he modestly observes, that he considers his theory at least as valuable an acquisition to mankind, as the discovery of the cow-pox!

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 9206 births and 5149 deaths were registered during the week ending April 20th. The annual rate of mortality, which had been equal to 17·9 and 18·9 per 1000 in the two preceding weeks, further declined to 16·8 in the week under notice. During the first three weeks of the current quarter the death-rate in these towns averaged 17·2 per 1000, the rate during the same period in London being only 16·8. The lowest rates* in the 76 towns last week were 4·6 in Hornsey, 9·4 in Coventry, 9·5 in Handsworth, and 10·0 in Hastings; the rates in the other towns ranged upwards to 24·3 in Ipswich, 24·7 in Wigan, 24·8 in St. Helens, and 27·2 in Hanley. The 5149 deaths in the 76 towns showed a further decline of 47 from the numbers in the two preceding weeks, and included 506 which were referred to the principal epidemic diseases, against 569 and 544 in the two previous weeks; of these, 216 resulted from measles, 155 from whooping-cough, 44 from diphtheria, 35 from diarrhoea, 33 from scarlet fever, 23 from "fever" (principally enteric), but not one from small-pox. No death from any of these epidemic diseases was registered last week in Plymouth, Southampton, Hornsey, York, or in eight other smaller towns; the annual rates from these diseases, however, ranged upwards in the other towns to 4·0 in Birkenhead, 4·6 in Middlesbrough, 5·1 in Bolton, and 5·9 in Nottingham. The fatal cases of measles in the 76 towns, which had been 251 and 223 in the two previous weeks, further declined last week to 216; they caused the highest annual death-rates, 3·1 in Middlesbrough, 3·6 in Nottingham, 3·7 in Bolton, and 4·0 in Birkenhead. The 155 deaths from whooping-cough were fewer by 16 than the number in the previous week; they were proportionally most numerous in West Hartlepool, Nottingham, Salford, and Tottenham. Diphtheria showed the greatest fatality in Swansea, Rochdale, and Reading; diarrhoea in Middlesbrough; scarlet fever in Sheffield, and "fever" in Wigan. No case of small-pox has been under treatment in the Metropolitan Asylums Hospitals since the end of June last. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2686 and 2637 in the two previous weeks, had further declined to 2628 at the end of the week under notice; 361 new cases were, however, admitted during the week, against 352 and 298 in the two preceding weeks. The deaths referred to pneumonia and other diseases of the respiratory organs, in London, which had been 412 and 355 in the two previous weeks, further declined to 326 in the week under notice, but exceeded by 15 the corrected average number in the corresponding week of the five years 1902-06. The causes of 47, or 0·9 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, in Bristol, West Ham, Bradford, Newcastle-on-Tyne, and in 53 other of the 76 towns; the proportion of uncertified deaths, however, again showed considerable excess in Birmingham, Liverpool, Sunderland, South Shields, and Rochdale.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 19·4 and 20·2 per 1000 in the two preceding weeks, declined again to 20·0 in the week ending April 20th, but exceeded by 3·2 the mean rate during the same week in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·6 and 15·8 in Paisley and Aberdeen to 22·2 in Glasgow and 25·6 in Leith. The 695 deaths in the eight towns were within five of the number returned in the previous week, and included 133 which were referred to the principal epidemic diseases, against numbers increasing steadily from 100 to 124 in the five preceding

weeks. These 133 deaths were equal to an annual rate of 3·8 per 1000, which exceeded by 2·2 per 1000 the rate from the principal epidemic diseases in the 76 English towns; they included 54 from whooping-cough, 42 from "fever," 17 from measles, 17 from diarrhoea, two from diphtheria, one from scarlet fever, but not one from small-pox. The 54 fatal cases of whooping-cough were within one of the high number in the previous week, and included 41 in Glasgow, six in Edinburgh, three in Aberdeen, and two in Dundee and in Greenock. The 42 deaths referred to "fever," showed a decline of seven from the number in the previous week, but included 21 in Glasgow, ten in Edinburgh, six in Leith, four in Greenock, and one in Dundee; 18 deaths were certified from cerebro-spinal meningitis in Glasgow, ten in Edinburgh, six in Leith, and two in Greenock. Of the 17 fatal cases of measles eight occurred in Glasgow, five in Leith, and four in Edinburgh. 12 deaths were attributed to diarrhoea in Glasgow, three in Edinburgh, and two in Dundee. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 109 and 118 in the two preceding weeks, declined to 103 in the week under notice, and were 37 below the number in the corresponding week of last year. The causes of 30, or 4·3 per cent., of the deaths registered in the eight towns during the week were not certified or not stated; in the 76 English towns the proportion of uncertified deaths did not exceed 0·9 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 28·3 and 26·6 per 1000 in the two preceding weeks, rose again to 27·1 in the week ending April 20th. During the first three weeks of the current quarter the death-rate in the city averaged 27·3 per 1000, the rates during the same period did not exceed 16·8 in London and 17·3 in Edinburgh. The 203 deaths of Dublin residents during the week under notice exceeded by four the number in the previous week, and included 18 which were referred to the principal epidemic diseases, against 15 and 19 in the two preceding weeks; of these, ten resulted from measles, seven from whooping-cough, one from diarrhoea, but not one either from small-pox, scarlet fever, diphtheria, or "fever." These 18 deaths were equal to an annual rate of 2·4 per 1000, the rate during the same week from the principal epidemic diseases being 1·4 in London and 3·5 in Edinburgh. The ten fatal cases of measles exceeded the number returned in any recent week; and the seven of whooping-cough corresponded with the number in the previous week. The 203 deaths from all causes included 34 of children under one year of age and 48 of persons aged upwards of 60 years, each of these numbers showing a decline from those returned in the previous week. Four inquest cases and two deaths from violence were registered; and 84, or 41·4 per cent., of the deaths occurred in public institutions. The causes of three, or 1·5 per cent., of the deaths in Dublin last week were not certified; the percentage of uncertified deaths during the week did not exceed 0·9 in London, while it was 8·4 in Edinburgh. The 170 deaths registered in Belfast during the week under notice included 27 referred to cerebro-spinal fever or cerebro-spinal meningitis.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Fleet Surgeon Joseph Crowley has been promoted to the rank of Deputy Inspector-General of Hospitals and Fleets in His Majesty's Fleet (dated March 17th, 1907).

In accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet Surgeon Harold Frederic Dale Stephens and Fleet Surgeon George Wilson have been placed on the Retired List at their own request.

The following appointments are notified:—Fleet Surgeon: G. A. Dreaper to the *Nelson*. Surgeon: R. F. MacMahon to the *Pembroke*.

ARMY MEDICAL SERVICE.

Lieutenant-Colonel Thomas F. MacNeeca, from Royal Army Medical Corps, to be Colonel, vice E. H. Fenn, O.I.E., retired (dated Feb. 16th, 1907). Lieutenant-Colonel William Babbie, V.O., O.M.G., from Royal Army Medical Corps, to be Colonel supernumerary to Establishment, on

appointment as Inspector of Medical Services (dated March 12th, 1907).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Reynolds P. Hetherington is placed on temporary half-pay on account of ill health (dated April 19th, 1907). Captain Richard E. G. Phillips retires, receiving a gratuity (dated April 24th, 1907). Lieutenant Winfrid K. Beaman is seconded under the provisions of Article 349, Royal Warrant (dated Jan. 28th, 1907).

Lieutenant-Colonel G. W. Brazier-Cragh, O.M.G., from Woolwich, has been posted to the Northern Command at Lichfield. Lieutenant-Colonel R. S. F. Henderson has been appointed to Netley Hospital, vice Lieutenant-Colonel G. E. Twiss.

INDIAN MEDICAL SERVICE.

The King has approved of the following promotions among officers of the Indian Medical Service: Lieutenants to be Captains (dated Jan. 30th, 1907): Hugh Basil Drake, Ernest Charles Hodgson, William Sim McGillivray, William Gillitt, William Frederick Brayne, Charles Harrison Barber, William Tarr, Merwan Sorab Irani, Hugh Watts, Ivor Davenport Jones, Walter Taylor Finlayson, Seymour Whitworth Jones, William Thomas McCowen, Hugh Ellis Stanger-Leathes, John Anderson, Edmund Arthur Roberts, Geoffrey Gratix Hirst, Michael Joseph Quirke, John Morgan Holmes, and Maurice Forbes White.

IMPERIAL YEOMANRY.

Oxfordshire (Queen's Own Oxfordshire Hussars): Surgeon-Lieutenant-Colonel H. P. Symonds is granted the honorary rank of Surgeon-Colonel (dated March 14th, 1907). Surgeon-Lieutenant Colonel and Honorary Surgeon-Colonel H. P. Symonds resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated March 15th, 1907).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 2nd Sussex: The undermentioned Surgeon-Lieutenant-Colonels are granted the honorary rank of Surgeon-Colonel: H. Colgate (dated Dec. 1st, 1906) and H. Haggood (dated Dec. 1st, 1906).

Rifles: 1st Volunteer Battalion the East Yorkshire Regiment: The undermentioned to be Surgeon-Lieutenants: Oswald Lucas Appleton (dated Feb. 9th, 1907); and Percy Roberts Ash (dated Feb. 19th, 1907). 1st Volunteer Battalion the Royal Scots Fusiliers: Surgeon-Lieutenant-Colonel W. Wilson is borne as supernumerary whilst holding the appointment of Brigade-Surgeon-Lieutenant-Colonel, Senior Medical Officer, Scottish Border Volunteer Infantry Brigade (dated March 13th, 1907). 2nd London Volunteer Rifle Corps: Henry Kay Ramsden (late Surgeon-Captain, 2nd Battalion, Royal Guernsey Militia Light Infantry) to be Surgeon-Captain (dated March 5th, 1907). 2nd (Renfrewshire) Volunteer Battalion, Princess Louise's (Argyll and Sutherland Highlanders): Surgeon-Lieutenant G. W. Coats resigns his commission (dated March 12th, 1907).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Eastern Command: Maidstone Companies: William Henry Flint to be Lieutenant (dated March 18th, 1907). 2nd London Volunteer Infantry Brigade Bearer Company: William Bain to be Lieutenant (dated March 7th, 1907).

THE COLONIAL CONFERENCE.

The Colonial Conference, if it has not led to the establishment of an imperial council as a necessary step preliminary to the organisation of a plan of imperial defence, has nevertheless gone a considerable way in that direction. It has decided upon holding its meetings every four years and upon forming a new permanent consultative and informative body to act between the motherland and the colonies. The Prime Minister is in future to preside over the Conference. One question before the Colonial Conference has been that of the military defence of the Empire and the discussion which ranged over the military systems of Great Britain and various colonies.

UNIVERSAL MILITARY TRAINING.

A system of universal and uniform physical training and military drill has, it is announced, been already inaugurated in Canadian schools. Earl Roberts has strengthened the hands of the National Service League by the publication in book form of the various speeches and addresses he has felt constrained to make during the last 18 months upon our present unpreparedness for war and the way in which, as he has so strenuously advocated, it should be met and overcome.

Correspondence.

"Audi alteram partem."

THE USE OF ALCOHOLIC BEVERAGES.

To the Editors of THE LANCET.

SIRS,—In view of the fact that six out of eight letters on "The Use of Alcoholic Beverages," published in the two preceding numbers of your journal, have all insisted on the need for evidence to support the contentions of the 16 signatories to the manifesto, I had hoped that this week's issue would have contained letters from one or more of these gentlemen dealing specifically with this point. Instead, two additional letters have now brought the total to eight correspondents who have in this respect a like desire. While the one letter published by one of the authors of the manifesto disregards this central question, that has most obviously been the dominant one in the majority of his fellow practitioners' minds.

THE LANCET is a medical publication, published for, and read mainly by, medical men, though it has, as is well known, a wide circulation among the better educated individuals of the general public, yet it is as a technical paper that its policy has always been determined. Surely, therefore, the demand for evidence for any medical manifesto published in your columns has peculiar force and ought not to be disregarded. All reasonable medical men will sincerely regret any bigotry that has been shown to any of the signatories to the manifesto. But the serious evil that excessive drinking causes to the nation is some excuse, though no justification, for its existence; and, moreover, this bigotry of some abstainers is, of course, largely the inevitable result of a reaction against established prejudice on the part of those who are not abstainers. With neither of these feelings are medical men concerned. We are, or ought to be, interested directly with the medical and indirectly with the social aspects of the problem. And as we all have personal opinions on the matter and all, who have any practice at all, much experience also, we want carefully sifted scientific evidence to consider the reliability or the unreliability of the newer research work which has given its verdict so largely against alcohol. Such statements as the two published in to-day's issue that abstainers are often large meat-eaters and that alcohol has some food value are not calculated to reassure other medical men of the competence of those who would give us a re-statement of the old view of the subject. Eastern countries like Japan are both abstaining and largely non-meat-eating, as compared with Western countries that are both, and it is the dangerous disadvantages of alcohol, not its small food advantages, that evidence is needed upon. Many of us would be quite willing to modify our views, but as scientifically trained men we require definite data to affect us, and our social responsibilities are such that to feel otherwise would be criminal. As no competent medical man would deny that alcohol is on occasion of service in the treatment of disease, and that for this purpose the various beers, wines, and spirits on the market may have each their special value, the whole point of the manifesto turns on the one question—its value in health.

In my letter published in THE LANCET of April 13th I mentioned eight independent specific lines of evidence which have all tended to establish the belief that alcohol is in some degree harmful to health; other correspondents took up similar positions. Now suppose it can be established by *new* facts that these eight converging groups of studies are all fallacious, it has still further to be proved that alcohol is not socially injurious if we are to accept the position that the manifesto defines. For it is certain "moderate" drinking does lead ultimately in many individuals to "excessive" drinking, and this is admitted to be an evil. We are justified, therefore, in asking the signatories to supply us not only with evidence to confute research students on the eight points I have alluded to, but also to inquire what remedy they would propose to check the development of the craving in those by nature predisposed to its power before we as social and individual medical advisers can sanction its usage as a national beverage. It ought surely to be evident that scientific evidence and not personal

opinion must alone ultimately decide the issue, and I would respectfully ask of the signatories for direct data to be produced on the question which they themselves have voluntarily brought before the medical world.

I am, Sirs, yours faithfully,
Willesden Green, N.W., April 20th, 1907. J. LIONEL TAYLER.

To the Editors of THE LANCET.

SIRS,—It is refreshing to read the common sense of Mr. Edmund Owen on the subject of "temperance." Every word of his letter is fully justified by the remarks of other of your correspondents, particularly by that most sarcastic letter of Dr. J. W. Carr. Dr. Carr actually writes: "Many medical men who up to now have been endeavouring to inculcate temperance principles on their families and patients will doubtless in the future teach the necessity for moderate drinking." What, in the name of sobriety, is "temperance" but moderation in drinking? But this would make the above profound sentence if not meaningless then decidedly tautological. Mr. Owen says, with perfect truth, that "the rank and file of our profession are one and all in favour of temperance," and I for one claim, with Dr. Carr and Mr. Owen, to be a teacher of temperance to my family and patients, but I drink cider or a glass of claret with my meals and even occasionally a glass of whisky-and-water with a friend at night. Several correspondents have remarked that we medical men see more than any others the evil effects of intemperance. True; but, on the other hand, are not nine-tenths—nay, nineteen-twentieths—of our personal friends, of those whom we most respect and love, men who, like ourselves, use intoxicating beverages in moderation? If words mean anything this is true "temperance." Doubtless, abuse leads to disaster, in the case of intoxicants to terrible and widespread disaster, but to condemn entirely and universally the use of wine for this reason is headstrong and savours of fanaticism.

So the vegetarian urges the universal disuse of animal food because of the admitted evils resulting from excess of nitrogenous diet and because some find themselves better if they eat no meat. Or take another analogous case. Who but the medical man knows so well the dire results of sexual intemperance? But is total abstinence therefore the only true remedy? At various periods of the world's history there have been fanatics who have maintained that it is, but in this case everyone recognises that they *were* fanatics, or would Dr. Carr say that I cannot rightly claim to inculcate sexual temperance because I have a family of my own?

I am, Sirs, yours faithfully,
Bromsgrove, April 23rd, 1907. CAMERON KIDD.

To the Editors of THE LANCET.

SIRS,—I should like to know whether Mr. Edmund Owen and his co-signatories of the manifesto approve of the use that is being made of their names by "the trade"? Are they aware that a reprint of the manifesto with names attached is being distributed to customers in public houses? Do they know that a firm that pushes the sale of a certain stout has added a copy of the manifesto to one of its circulars which also contains a garbled and misleading extract from Sir Michael Foster? It is certain that the use of the manifesto in this way, which is, of course, what many of us expected, will tend seriously to increase the use of alcoholic beverages, any force that the last paragraph of the manifesto might possibly have with a few notwithstanding.

I am, Sirs, yours faithfully,
THOMAS RUSHBROOKE, M.A. Cantab., M.R.C.S. Eng.
Stamford Hill, N., April 24th, 1907.

To the Editors of THE LANCET.

SIRS,—Dr. Burns, the secretary of the London Temperance Hospital, judging from the tenour of his letter, appears to be swayed by the popular sentiment that a few eminent medical men with the capture of their names on his side will settle this vexed question, whereas it must be decided on the weight of evidence. Meantime it is certain that so long as the total abstinence party constitute themselves the sole judge and jury and advocate of their own cause no unbiased judgment can possibly be arrived at. Why, may I ask, should not this complex question be submitted to

some impartial tribunal, somewhat analogous to a Royal Commission, who could in a judicial spirit analyse and test the evidence which the teetotal party seem to think so convincing and conclusive. Take, for instance, the oft-repeated testimony of those insurance companies, who inform the world that between total abstinence and moderate drink the former is in favour of longevity, when it must be obvious that no company (unless indeed they employ detectives in plain clothes) can guarantee any of their general section as moderate consumers of alcohol. Further, much stress, as everybody knows, is placed upon alcoholic excess by alienists as a cause of insanity. What evidence is there, however, on the other hand, to prove that the judicious use of alcohol in many cases may not in the wear and tear of everyday life afford some ballast to the overwrought nervous system and prevent a total collapse? May it not act thus in advancing years when the natural pride and enthusiasm of life which affords a healthy stimulus to younger minds has vanished and no longer acts upon the aged and prosaïc? I ask what evidence is there to show that in these cases moderate stimulants may not ward off, or at least lessen the chances of, senile dementia? In a letter which appeared in the *Times* brimful of significance from the late Lord Grimthorpe, which I can corroborate from the observation of somewhat identical conditions, the following statement occurs which, although not scientific evidence, is possibly more trustworthy in some respects:—

The late Mr. Proctor the astronomer at one time took up teetotalism and preached it as an infallible dogma in knowledge. I warned him from my own experience, as he was a hard worker with his head, and he laughed at it. Within six weeks he recanted and told me I was right. I forget whether he published his recantation. I have known sundry other "brain workers" try the experiment and I have never known more than one who had not to recant.

Surely evidence of this kind is of moment.

I am, Sirs, yours faithfully,

Brighton, April 16th, 1907.

CLEMENT H. SERS.

To the Editors of THE LANCET.

SIRS,—Each one of us must be conscious of the gulf dividing the apologist for strong drink from the apostle of total abstinence in this one regard—namely, that the apostle, however narrowly intolerant, is at least impelled by an ideal and believes firmly in the ultimate usefulness of his cause. Can the same possibly be said for the apologist who encourages those around him to alcoholic habits, however harmless? How, in the face of the natural proclivity to intemperance, can medical men presume to recommend what they know to be productive of infinitely more harm than good? It is far less a question of abstinence than of common sense and I would ask if anyone can for a moment hold that the normally constituted and healthful individual would suffer from the immediate removal of all intoxicating liquors from the globe. There are those who pretend to believe that a nation may owe her supremacy in part to the influence of alcohol; who can even imagine a proof of this? But it is terribly easy to trace the misery consequent on strong drink. Let men be honest; strychnine is helpful and alcohol too in subduing pathological conditions, but for the strong man these are needless. I follow the fashion and add my delicate confession of being no stranger to wine, but of this I make no boast.—I am, Sirs, yours faithfully,

BOSWALL DODDS, M.D. Edin.

Starcross, Devonshire, April 21st, 1907.

To the Editors of THE LANCET.

SIRS,—Mr. Edmund Owen in his letter in THE LANCET of April 20th touches upon the most important point of the controversy to my thinking. He asserts that no sane person ever drinks alcohol and he would as soon think of drinking paraffin or naphtha. And yet as far as I can gather most of the so-called scientific investigations on the subject have been based upon the use of pure diluted or undiluted alcohol—that is to say, the experiments have been made with C_2H_5OH + or − H_2O and nothing more. To say that these experiments represent accurately the action of beer, wine, and spirits is, it seems to me, tantamount to saying that the action of a few grains of caffeine dissolved in distilled water is equal to that of a cup of tea. There is something else besides alcohol in

wines, beers, and even spirits, just as there is something else besides caffeine in a cup of tea.

I am, Sirs, yours faithfully,

CHEMIOUS.

April 23rd, 1907.

THE CONDITION OF THE BLOOD-VESSELS DURING SHOCK.

To the Editors of THE LANCET.

SIRS,—Professor Wenckebach's contribution in your issue of April 13th, as coming from an acknowledged and distinguished authority, is, to say the least of it, astonishing. He relates a case in which a full dose of digitalis produced an almost impalpable pulse, together with "well-filled," extremely hard, and wildly beating throbbing carotids," phenomena in which he seems to find something obscure. What else, one wonders, did he expect would occur? The effect of digitalis is to produce contraction of the arteries. The arteries are endowed with contractility in decreasing measure as we pass from the periphery to the centre. The radial is further from the centre than the carotid. The same influence which would cause the former to contract tightly, would therefore allow the latter to retain, substantially, its normal calibre. The pulse in the one would thus be almost imperceptible, while the increased pressure would cause the other to become "well filled, extremely hard, and wildly beating." The learned professor goes on to inquire "who will tell what the blood pressure has to be in the contracted radials at the wrist," and wishes to know if I am sure that it will be found high in that portion of the arterial system. In reply, I beg with all due humility to say that I have been always taught to believe that the pressure of a fluid in the "nozzle of a tube is certainly not less than the pressure in the tube itself. But what all this has to do with the condition of the blood-vessels in shock it is for me quite impossible to discover.

In your issue of March 23rd I invited Mr. J. D. Malcolm to point out any fallacies in one of the arguments by which the present view is sustained. He replied in your issue of March 30th with two statements. In your issue of April 13th I maintained that these, so far from exposing any fallacies, displayed, in the one case, a lack of mental perspective, and in the other, a physiological inexactitude. In your current issue Mr. Malcolm re-states his first proposition, and, in reply to my criticism of his second, while attributing to me opinions which I have never held and never expressed, he states that the "fallacy" resides in the fact that I failed to make myself clear. I do not therefore propose to continue the discussion.

I am, Sirs, yours faithfully,

London, W., April 20th, 1907.

LEONARD WILLIAMS.

THE SALUBRITY OF THE THAMES VALLEY.

To the Editors of THE LANCET.

SIRS,—The Thames Valley has for a long time borne a traditional reputation of being unhealthy, and several London specialists have been in the habit of advising their patients to avoid its supposed miasmatic influences. Like many other traditions, however, it can be demonstrated that this, too, rests on no solid foundation. Take one or two patent facts. No public school in England is more healthy than Eton, and that noble institution lies in the very heart of the Thames Valley. At some 50 feet above the level of the Thames and about a mile distant from Eton stands the little town of Slough, in the parish of Upton. As to the salubrity of this town let the medical officer of health, Mr. E. Weaver Adams, F.R.C.S., be called as witness. In his official report for 1906 he states that the death-rate in the town was only 10·2 per 1000, while the death-rate in 142 other small towns in England was 14·4 per 1000. And further, there were only 17 "notifiable cases" of illness amongst residents in Slough in the whole year (1906). This is a very remarkable record, and it certainly proves that the place does not deserve to bear an evil repute, though it be in the Thames Valley. It should be added that gravel, thoroughly well drained, is the predominant stratum of the district, and consequently the streets and roads become dry very rapidly after rain.

Lastly, if it be conceded that sunshine contributes greatly

to health I learn from an experienced meteorologist resident in Slough that the town enjoyed "bright sunshine" for nearly 15 hours a day in four of the spring and summer months in 1906. Could many of the usual health resorts show a better record? I am, Sirs, yours faithfully,

AN OCTOGENARIAN RESIDENT IN THE THAMES VALLEY.
April 22nd, 1907.

Our venerable correspondent has right on his side. The Thames Valley is often spoken of as unhealthy by the public, though we were not aware that this view had medical endorsement. Slough may suffer from its name, which is associated in the public mind with "bog" and "morass." The proper name of Slough is Upton; it lies high above the Thames on a gravel soil, and is a remarkably healthy town.—ED. L.

SOME TURKISH LAZARETS

AND OTHER SANITARY INSTITUTIONS IN THE NEAR EAST.

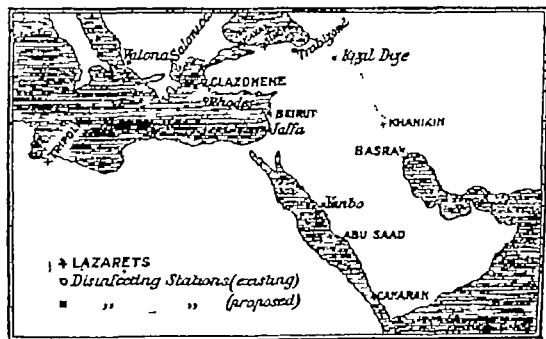
BY THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.

(With Reproductions of Photographs taken by the Author.)

I.

Sketch of the General Scheme of Maritime and Frontier Sanitary Defence of the Turkish Empire.—The History of the Camaran Lazaret.—The Villages on Camaran Island.—The Numbers of Pilgrims Interned and the Nature of the Measures Applied.

BEFORE proceeding to describe the sanitary stations visited by the Commission, it will be useful to give a brief account of the entire system of maritime and frontier sanitary defence in the Turkish Empire. The Constantinople Board of Health has under its management a series of lazarets, a small number of simple disinfecting stations, and a large number of sanitary offices. The lazarets, of which there are nine, are large and complex establishments, in which quarantines, disinfection, and other sanitary measures are applied. Their names and positions are indicated in the



Small sketch map of the Turkish Empire, showing position of the lazarets and disinfecting stations, existing and proposed.

accompanying sketch map. There are two in the Black Sea—Sinope and Kavak (at the entrance of the Bosphorus); three in the Mediterranean—Clazomene, near to Smyrna, Beirût, and Tripoli on the African coast; two in the Red Sea—Abu-Saad, near to Jeddah, and Camaran; one, that of Basra, in the Persian Gulf; and one, that of Khanikin, near the Turco-Persian frontier.

There are two disinfecting stations in existence, those of Jaffa and Rhodes, and it is proposed to construct five others, respectively at Trebizond in the Black Sea, Salonica in the Ægean, Volona on the Adriatic coast, Yanbo in the Red Sea, and at Kizil-Dizé on the Turco-Persian frontier. At these stations medical visit, disinfection, and even a period of observation not exceeding 24 hours are applied. They are of great use to navigation, as in their absence ships would have to go to one of the lazarets to undergo these

measures, and this often involves the ship making a long detour, with corresponding loss of time and money.

The sanitary offices are 135 in number, scattered along the coasts and land frontiers of the whole empire. In 44 there are medical officers, and here ships can undergo "medical visit"; in 91 there is no medical officer, and at these ports ships merely undergo the ordinary sanitary interrogation and pay their sanitary dues.

The lazaret of Camaran was the first and largest of those visited by the Inspection Commission. It is probably one of the largest and most important sanitary institutions in the world, since it is destined to receive the majority of Moslem pilgrims coming to the Hedjaz from countries situated beyond the Straits of Bab-el-Mandeb.

The island of Camaran upon which the lazaret is built is situated off the coast of the Arabian province of the Yemen, about 15° north of the equator, at a distance of some 40 sea-miles to the north-west of Hodeidah, four to the west of Salif, and 20 to the south-west of Lohela. It is separated from the mainland by a channel, which in its narrowest part is not more than one and a quarter sea-miles broad. It is a coral island, some 18 kilometres long from north to south, and from three to eight kilometres wide from east to west. Its surface has all the characters of the desert; flat in some parts, undulating in others, and rising in some to a height of several metres above sea-level.

The history of the steps which led to the choice of this island for the quarantining of pilgrims from the east on their way to Mecca and Medina is of interest. The earliest proposal for the creation of an institution of this nature was made by the International Sanitary Conference held in Constantinople in 1866. That conference decided: (1) that a sanitary establishment should be created near the entrance of the Red Sea; (2) that the international character of this establishment was a *sine qua non*, the form to be given to the institution and to the measures to be applied there being left to the Governments interested, and it being suggested that the lazaret should be placed under the direction of either Turkey or Egypt, but under the control and with the assistance of Europe; and (3) that the measures applied there would be based on an international regulation and executed by an authority placed under the control of the Governments interested. When the next International Conference met in Vienna in 1874 these decisions were incorporated in the convention which followed; but it was not until some seven years later that steps were taken to give effect to them. In the meantime two Commissions had been sent by the Turkish Government to inspect the coasts and islands in and near the southern portions of the Red Sea, with a view to selecting a suitable site for the new lazaret. The first explored, in 1867, a large number of possible sites on the Red Sea shores of Arabia, and finally decided to recommend the island of Camaran as offering on the whole the greatest number of advantages. The second, sent three years later, with instructions to examine the coasts between Perim and Mokalla—that is to say, the southern coasts of Arabia outside the Straits of Bab-el-Mandeb—reported in favour of Sheikh-Said, a small bay at the very entrance to the Red Sea, and just opposite to Perim.

In 1881, when cholera broke out again at Mecca, the Constantinople Board of Health decided to improvise at Camaran a small lazaret where the inhabitants of the Yemen returning from the pilgrimage were to be quarantined before proceeding to their homes. This measure appearing to have given good results the board decided in the following year to build a permanent and large lazaret, where all arrivals from India would be quarantined before going on to the Hedjaz. It took another two years to bring the lazaret into being, and that institution was both more primitive than the present one and occupied a site more to the south. The present establishment may almost be said to date from some ten years back, when the large sum of £T.81,500¹ was voted for the "refection" of the Camaran lazaret. In the course of two or three years most of this money was spent, and the buildings and installations to be described in these articles were thus brought into existence.

To return to the description of the island and lazaret. The latter is built on the east coast of the island, facing the mainland. There is here a bay, which cuts into the island for a distance of about 1000 yards and is about 600 yards wide. On the southern shores of this bay is the large village of Camaran; on its northern shores are the administrative

¹ A Turkish pound (ET.) is equivalent to about 18s.

and other so-called "central" buildings of the lazaret, the camps for the pilgrims forming an irregular line, some four and a half kilometres long from south to north, and running more or less parallel with the eastern shores of the island. The village of Camaran is said to contain about 5000 inhabitants. It is not the only one on the island; there are indeed five others, called respectively Yemen, Fourra, Mekrem, Sella, and Seifaf; but none of them are of any size, the largest containing only 35 and the smallest only five houses. These villages are occupied by an Arab population, mostly employed in fishing for, or trading in, pearls, which are found in considerable numbers in this region.

While most of the island is desert there are several oases where palm-trees of various kinds flourish. In all parts of the island, wherever the least depression in the ground allows the sand to retain some humidity there is an abundant and very characteristic desert flora. A great variety of shells and coral is found here and the bird life is remarkably varied and interesting. The climate is pleasant in winter but the heat in summer is said to be very great.

The lazaret of Camaran is supposed to be open only for the six lunar months of the Moslem Pilgrimage—viz., those of Redjeb, Shaban, Ramazan, Sheval, Zilcadé, and Zilhidge. As the Moslem year is composed of only 12 lunar months it is shorter by some 11 days than the true solar year. Hence any Moslem date is about 11 days earlier each successive year. It follows that the pilgrimage season may fall in spring, summer, autumn, or winter. At the present time it falls mainly in autumn and winter; the last of Redjeb last year fell on August 21st, and the three days of Kurban Bairam, in which the fêtes at Mecca culminate, were in the latter half of January, 1907. During the remaining half of the year the staff of the lazaret is reduced to the smallest number compatible with the surveillance and upkeep of the various buildings and installations. All ships carrying a number of pilgrims exceeding 5 per cent. of their net tonnage should go to Camaran; those with less may go to the much smaller lazaret of Abu-Saad, near to Jeddah. As a matter of fact, most, if not all, ships from the north, even if they carry more than 5 per cent. of pilgrims, go to the Abu-Saad lazaret. The total number of pilgrims quarantined at Camaran in the last 25 years is shown in the following table. It will be seen that the number varies greatly from year to year; thus in 1882 there were only 9067; in 1903-04, and again in 1905-06, the total exceeded 32,000.

Table showing the Total Number of Pilgrims Quarantined at Camaran in the last 25 Pilgrim Seasons.

Year.		Pilgrims.	Year.		Pilgrims.
Of the Hegira.	A.D.		Of the Hegira.	A.D.	
1299	1882	9,067	1312	1895	23,373
1300	1883	20,016	1313	1895-1896	30,448
1301	1884	12,748	1314	1896-1897	14,210
1302	1885	17,303	1315	1897-1898	15,229
1303	1886	15,031	1316	1898-1899	14,075
1304	1887	13,707	1317	1899-1900	11,155
1305	1888	20,932	1318	1900-1901	18,356
1306	1889	18,723	1319	1901-1902	17,729
1307	1890	20,124	1320	1902-1903	15,822
1308	1891	23,464	1321	1903-1904	32,431
1309	1892	24,032	1322	1904-1905	22,349
1310	1893	31,907	1323	1905-1906	32,116
1311	1894	22,417	—	—	—

For many years past all pilgrims from India have been subjected to ten days' quarantine at Camaran. Those from an infected port in any other country, whether disease has broken out on the ship or not, undergo the same period of quarantine. Ships from the Dutch Indies, Ceylon, Straits Settlements, Persian Gulf, and some other countries are regarded as "suspect" and do only five days' quarantine. The other measures applied consist of a thorough disinfection of the pilgrims' clothes and baggage, a douche bath for the pilgrims themselves, and a cleansing and disinfection of the ship and crew. The pilgrims pass their quarantine in camps, to be described later; while there they undergo a medical inspection twice a day in order that any case, or suspected case, of cholera, plague, or other disease may be at once

detected and isolated. If such a case occurs the patient is removed to hospital; the rest of the pilgrims in the infected camp do 12 days' quarantine for the first case, and ten for any subsequent cases, before they are allowed to leave the lazaret and proceed to the Hedjaz. They are thoroughly disinfected before leaving and no pilgrim is allowed to depart unless the medical officers of the lazaret are satisfied that he is free from infection.

(To be continued.)

THE MILK-SUPPLY OF LONDON: SOME PERSONAL OBSERVATIONS UPON ITS RAILWAY TRANSPORT.

(FROM A CORRESPONDENT.)

II.¹

The Milk Can.—The Milk Van.—The Milk Train.—The Regulations in Respect of Milk Transport.—The Delivery of Milk at Paddington Station.

MILK reaches the metropolis either by special milk trains or by ordinary goods and passenger trains, but in all cases the can in which the milk is contained is of the familiar shape. It is universally employed and so becomes an important article in milk transportation. The milk can, which is frequently and wrongly termed a churn, is usually of about the same size and the same shape on all our home railroads running into London. It is about two and one half feet in height, round in shape, with a broad base gradually narrowing towards the top, where it expands again into a broad brim. It has a capacity varying from 14 to 17 gallons. It is provided with a closely fitting lid with a fastening arrangement at the side, and in the majority of cases there is a raised portion in the centre of the lid containing holes for ventilation. The shape of the can has its reasons; it can be easily cleaned and handled with comparative facility, its round shape, expanding below, permitting of it being moved without difficulty by rotation on the edge of its base. On the whole the construction of railway milk cans appears to be sufficiently satisfactory, but there is one grave fault in regard to their use which has, I believe, been made the subject of many strictures already, but with little or no effect. By far the greater part of the milk sent by rail is carried in unfastened cans. Indeed, it would be no great exaggeration, I think, to state, that not more than one can in 1000 of all that are brought into London by the railroads is locked or sealed. There are arrangements for locking the cans but they are habitually overlooked. That it would be better for the general public if cans were locked while being conveyed by rail or while deposited on the platforms of stations is obvious. Sealing or locking of milk cans should surely be made compulsory as a means of protection to the consigner and the consignee. At present the bulk of the milk which reaches London may be tampered with in transit, dirt may obtain entrance to the can on account of the lid being opened, dishonest persons may abstract the milk with any beastly sort of vessel, and may replace the stolen milk with any beastly sort of water. I have seen on more than one London railway station platform milk cans with lids unfastened and partly opened, allowing free ingress to the various kinds of dirt which must abound in London stations. I am simply unable to understand why both consigner and consignee do not agree, the one never to send, the other never to accept, any cans that can be thus tampered with in transit, and I am of opinion that if those peculiarly interested cannot take such an obvious step in self-protection that our sanitary authorities should compel them to take it for the protection of the public. There is an impression that railway companies are opposed to cans being sealed while in their charge, but I have conversed with many of the officials and as far as I have been able to ascertain the impression is altogether erroneous. The regulations in vogue with respect to milk transport are practically the same for all the railroad companies which enter London. Each can must have the number of imperial gallons it is capable of containing marked upon it and the inside of each can must be marked to indicate the space occupied by eight gallons and by each additional gallon.

¹ No. I. was published in THE LANCET of April 27th, 1907, p. 1116.

In the case of the few "sealed" cans, instead of the inside of the can being marked each can must bear its "tare" conspicuously stamped thereon outside. The officials of the railway company have the power to open any cans during transit and, if necessary, to detain the same for a reasonable time, in order to ascertain if the quantity of milk therein agrees with the quantity declared; but this is a reasonable precaution for them to insist upon. We may be sure that such inspection would only be put into practice where there were grounds for suspicion that the company was being defrauded, for neither the farmer, the purveyor, nor the public would tolerate the milk-supply of London being subjected to any system analogous to the proceedings of an American Custom House.

The Great Western Railway is the largest carrier of milk to London and the first station which I visited when I made up my mind to gather together my random ideas as to milk transportation was Paddington. Although milk is conveyed to the metropolis from almost all the districts over which the line has running powers, the greater part of it is brought from localities comparatively near to London, from Wiltshire, from Buckinghamshire, and from Berkshire. For the transport of milk the Great Western Railway employs special trains and passenger trains, but by far the greater part of the milk is carried in special trains. Three of these special trains are at the present time being run during the 24 hours, two of which arrive in London in the early hours of the morning, while one arrives about 10 A.M. I awaited the arrival of one of the early morning trains. It consisted of 28 milk vans, each van carrying 30 cans, so that the total cargo of milk, allowing 16 gallons to a can, would be 13,440 gallons. If the other two milk trains carried an equal quantity, the amount of milk brought into Paddington daily by special trains would be 40,320 gallons. The vans in common use are of strong construction, about 20 feet in length, 7½ feet in height, and 9 feet in width. Each is provided with open-boarded sides permitting of a through current of air, incidentally admitting the rain. A new type of milk van has been introduced by this railway recently. It is much larger; the sides are close boarded for a height of 2½ feet with louvres above. The close boarding and louvres arrangement excludes wet but admits air. The floor boards of the vans are covered with rock asphalt, which slopes towards a gutter in the middle so that the floors can be easily washed. As far as this railway is concerned, the facilities for transport of milk are consequently such that it should travel in a sanitary state. The special milk trains run at a fair rate of speed from the more outlying districts as far as Reading picking up milk on the way, and from Reading to Paddington the journey is made at express speed. The consequence is that, the distances to be traversed being comparatively small, the milk trains of the Great Western Railway are, for the most part, never long enough on the journey to allow chemical changes in the milk to be produced, while the construction of the milk vans, and especially of the new ones, seems to be well designed to assist in the preservation of the milk in a sweet condition.

But little milk is carried by passenger trains on the Great Western railway compared with the amount that is carried by special trains; none the less the amount of milk conveyed during the year by this means is considerable, and, of course, some of the milk thus transported has to travel long distances. The conditions in which milk is carried by passenger trains is at all times more or less insanitary, and when it is transported for long distances this evil is greatly aggravated. The luggage van in which the cans are placed is not infrequently full of a miscellaneous cargo, some of which may be exactly the sort to promote the tainting of milk, the ventilation is inadequate, the temperature in hot weather will be excessive, neither floor nor walls of such a luggage van will be subjected to any special process of scouring—in short, we have here all the factors calculated to produce chemical changes in the milk. I saw at Paddington station no particular example of milk being conveyed in a van that was obviously in an unfit state, but as all the milk conveyed in these vans appeared to be in unsealed or unlocked cans it is certain that any opportunities of selling offered by the method of transport would have a full chance of becoming effective. I saw many cans full of milk with their lids partly opened, and of all the cans that I observed I did not see one which was sealed or locked.

The Great Western Railway has a special platform for the unloading of milk, alongside of which come the dealers with

their vans for the purpose of taking it away for distribution. On this platform I saw, regardless of the enormous probabilities offered by the environments, cans freely opened and milk decanted. It is impossible to imagine a more unsuitable place for such a proceeding. I may mention that this never took place when any of the Aylesbury Dairy Company's milk was being shifted, while if I refrain from mentioning the offenders by name it is because I do not know if such practices are accidental or habitual. I was informed both that they often happened and that they never happened, and I have not visited this platform to meet the train in question more than once. Perhaps some of your readers may be able to supply the answer.

(To be continued.)

THE ORGANISATION OF THE MEDICAL PROFESSION IN FRANCE.

(FROM OUR SPECIAL COMMISSIONER.)

(Concluded from p. 913.)

The Maintenance of Discipline.—Penal Sanctions Conferred by the Tribunals and Medical Men Fined for Breaking their Medical Union Rules.

THE Concours Médical, it has been seen, has served as a parent or a forcing ground for the birth and growth of medical unions in France. To-day the organ of this association of medical men recalls criticisms which it made in 1901 and which it maintains apply with equal force to the present situation. It complained then, as it does to-day, that as the medical unions or syndicates grew in number they became weaker in cohesion and in discipline. It was therefore urged that instead of each medical union having its own rules, which were often imperfect and insufficient, all the unions should have the same rules. These rules should impose duties side by side with the rights which medical men sought to acquire. Again, a central authority should be able to prevent the overlapping of local unions and to establish geographical demarcations so that they should not trespass on each other's domains. Small unions readily followed this advice, notably at Noyon, Saumur, and Château-Thierry. With larger unions it was more difficult. In 1901 the Versailles medical union had already been in existence 15 years. It was a big cumbersome society, stretching over districts that had totally different interests, and the situation was further complicated by the proximity of Paris. It was soon found that a number of medical practitioners had joined with the hope of obtaining as many advantages as possible but with no idea of themselves doing anything whatever for the cause further than the doing out of a small subscription. It did not dawn upon them that they were no longer to endeavour to pay court to the patients of other practitioners, that the object of union was to prevent unfair or unprofessional competition. The fact that a good many members of the union had not entered into the true spirit of union caused unpleasant feelings, suspicion, and hesitation to arise.

Such seeds of disruption had to be extirpated and this with no uncertain, faltering hand. But in France, as in England, the question must be:—How is a member of a medical union to be compelled to fulfil his promises? After a lengthy study of all conceivable ways and means the council of the Federation of the Medical Unions of France came to conclusions of such importance and of such practical interest to the medical profession in all parts of the world that it is worth while to translate the actual text:—

1. In our opinion members of medical unions should represent the *élite* of the profession; they should be medical practitioners who are deeply convinced of the necessity of maintaining the dignity and solidarity of the profession.
2. If they are grouped in insufficiently small districts for each of these regions to have identical interests, the problems daily arising affecting the medical profession may be settled in a uniform manner. Once such a settlement has been attained, when the agreement has been duly accepted and voted upon, it constitutes a code, and if the articles of this code are not observed and there is no sufficient excuse given, a fault, a misdemeanour, has been committed which exposes the delinquent to a penalty, just as in the case. In regard to any other breach of a contract freely made. Then as the guarantee in regard to the damage done to the group or the members who are injuriously affected is readily appreciated by the members of the unions of the entire region, the members are much better able to judge such a matter than the ordinary tribunals, for these latter in such questions are not

1 See THE LANCET of March 30th, 1907, p. 911, and also of July 15th, 1895, p. 214.

at all competent. The rules of the medical union should anticipate as far as possible the nature of the delinquencies the members may commit. Thus a member when he gives his signature should be fully warned as to the nature of his rights, his duties, the obligations which he contracts to fulfil, the benefits he may hope to obtain, and the penalties to which he exposes himself.

Now this latter clause introduces an important punitive proposal. The principle is that if a person joins a union formed to promote a certain line of action and fails to carry out his undertaking towards it he injures and causes material damage to his colleagues. Therefore, he ought to be condemned for the breach of contract to the payment of damages. But if he were sued before an ordinary court the tribunal, being ignorant of the position of the medical profession and utterly unable to understand the professional interests at stake, would not know how to assess such damages. Therefore the medical union itself must decide what damages shall be paid.

This method of dealing with the question of discipline was adopted by the medical union of the Versailles *arrondissement* district. Each member of the union was called upon to sign a contract, by which he promised to pay a fine of not less than 16s. and not more than 240 if he broke the laws of the union. Of course, there was a great outcry. Such a drastic measure, it was said, would cause many medical men to leave the union; but the answer was given that those who were not thoroughly in earnest had better be outside the union. Then the question was asked, What would happen to a medical man whose practice was on the frontier line of two different unions? The answer was that he must obey the laws of the union in which his patient lived, and if his patients lived in the districts of two different unions then he must conform to the rules of each union when practising on its territory. Of course, this latter difficulty will become insignificant as the various unions adopt similar rules. Those adopted by the Versailles union are likely to serve as a model. The following are some of the more interesting clauses:—

Article VII. deals with the duties and obligations of members and these may be summed up by saying that the duty of the member consists in conforming strictly with the decisions of his union, notably with regard to questions relating to:—

1. Deontology.
2. The prohibition of all acts of illicit competition by means of intrigue, by the solicitation of patients, the abuse of colleagues, the reduction of fees, the forming of political or religious societies established to promote a personal professional interest, &c.
3. To assist spontaneously all fellow members who are in any way menaced or injured.

Again and again the objection was raised that these principles were admirable but that there was no guarantee that they would be applied. Indeed, it was found that some of the best and most honourable members of the profession would not join the medical union. When questioned they replied that it was precisely because they thoroughly approved the principles of the union that they did not join. If they joined they would scrupulously and strictly carry out its rules and regulations; but as there was no guarantee that all the other members of the union would be equally faithful to their principles those who really obeyed the rules would soon find themselves at a serious disadvantage. If, however, an effective guarantee could be given that those who did not keep their pledge would be punished with severity sufficient to render infractions unlikely and of rare occurrence then the best elements of the profession would join readily. Thus it was that at a meeting of the Medical Union of the Versailles District the 50 medical practitioners who were present voted unanimously in favour of the following rules:—

Article IX.—1. The sanctions applied in case the statutes or rules have been broken are only valid when voted by secret ballot at a general assembly and by the relative majority of the members present, and this only after the committee has investigated the matter, heard the parties concerned, and read a written report on the subject. The verdict may be pronounced in default, if the presumed delinquent has been summoned by registered letters to appear first before the committee of inquiry and then before the general assembly, and does not either attend or send a satisfactory explanation.

2. All penalties imposed in default may be challenged before a general assembly within a period of three months of their notification made by a ballot or a registered letter.

3. These penalties are: a warning, a reprimand, a fine of from 16s. to £40, and expulsion, which may be accompanied by a fine. The general assembly shall further decide whether there is just cause to take damages in case the fine shall not suffice to repair the injury done to the Medical Union. It is the general assembly that inflicts the two last-mentioned penalties, fine or expulsion, as also the taking of legal action, and the general assembly must for this purpose consist of at

least two-thirds of the members of the union; then the penalties or legal prosecution can only be inflicted if two-thirds of those present vote in favour of such a course.

4. Unless it is otherwise decided by the general assembly, all inflictions of penalties shall be inscribed in the minute book. They shall receive the usual publicity and the interested party shall not, in regard to such publicity, be able to take any action in law to recover damages from the Medical Union.

5. The fact that a member is expelled from the union does not exempt him from his responsibilities and from the payments or penalties to which he was previously liable.

Seeing the very great importance that the meetings of the general assembly should, in such circumstances, be well attended there is a special rule on this subject. It states that there shall be each year at least two obligatory general assemblies: one of these shall be followed by a banquet and at the other the election of officers and the payment of subscriptions shall take place. Every member who cannot attend must send a written excuse and pay a fine of 1 franc. If he fails to do this then he must pay a fine of 5 francs. Of course, exceptions are made in case of serious illness or other imperative cause of absence. But when there is a disciplinary assembly—that is to say, when an important verdict has to be rendered for or against a member of the union—then those members who fail to attend without sufficient excuse may be fined as much as 20 francs, or 16s.

It will be seen by these rules that the duties of a member of the Versailles Medical Union are treated very seriously and that membership does really involve a grave responsibility. But all this would have been of comparatively little importance if the rules of the medical union had not received a legal sanction. A case, however, did occur where a member of the medical union repudiated his obligations and was consequently summoned before the civil tribunal of Bourgoins. Here and in response to the eloquent pleading of his counsel, Maître Gatineau, the court held that the medical union was justified and that its members must fulfil all the conditions to which they had attached their signatures. This verdict gave new life to the medical unions and in many parts of France their rules were revised with a view to their enforcement if necessary before the law courts. This was notably the case with the Federation of the Medical Unions of the Department of the Nord, of the Pas-de-Calais, of the Jura, the Deux-Sèvres, the Creuse, and the Vendée, and also in the creation of a new union at Lorient.

In England this example might be of considerable value, for the difficulties and the problems at issue are almost identical. In France, as in England, it is the want of solidarity that constitutes the weakness of the movement. A medical practitioner may or, if he prefers, he may not belong to the local union of his profession. If he does join he may or he may not carry out the rules to which he has given his assent; the acceptance of the rules are not so arranged as to involve the signing a contract which it would be illegal to break? Undoubtedly one of the most effective weapons against a member of the profession who acts in an unworthy manner is some form of unfavourable publicity. In France a claim for damages would not hold if the plaintiff had on joining the medical union signed his acceptance of a set of rules which stipulated, among other things, that publicity should be given to any verdict pronounced against him by the medical union. There is assuredly something to be done by converting certain reprehensible acts into breaches, not merely of medical etiquette or of medical ethics, but of contracts which have been formally entered into before witnesses; the action of the French court is therefore very suggestive.

It is also interesting to note how the French medical unions propose to deal with young practitioners newly arrived in a district and with others who refuse to join the local medical union. Here is a set of rules:—

Article I.—Whenever a new colleague arrives and installs himself within the zone of the medical union his arrival shall be notified to the secretary by his nearest neighbour, who shall at the same time suggest what, in his opinion, would be the best means of inducing the newcomer to join the medical union. The syndic of the region will then receive a mandate instructing him to call upon the newcomer and act according to the advice received; he will endeavour to demonstrate the services the medical union can render to the newcomer and at the same time to warn him as to the faults he might commit.

So long as he has not clearly stated whether or not he will join the union and has not knowingly done any act of hostile competition against the union, the new colleague shall be treated by his rivals with the same consideration as if he was a member of the medical union.

Article II.—The same attitude as that laid down in paragraph 2 in the above article shall be adopted towards every medical practitioner who, though remaining outside the medical union, shall behave in an absolutely correct manner from a professional point of view. Also

endeavours should be made to obtain the aid and advice of such practitioners in all matters of general interest and thus seek to persuade them to join the union.

Article III.—When a medical practitioner who has been installed in the locality for two months, who has not during that time called on his neighbouring colleagues, has, after being fully informed of all the details, refused to our delegate to join our union, and is practising in competition instead of as a member of our combination, the members of the union shall reduce their professional relations with him to the strict minimum imposed by considerations of humanity and of the interests of the sick. None of us should consent to help him, to act in consultation with him, or to collaborate with him habitually. When yielding in a matter of urgency or through a sentiment of humanity it shall be clearly indicated that this is only done in response to an appeal made by the patient and that the exceptional collaboration which the patient may have made us undergo is limited absolutely to what is deontologically correct.

Further, as against the medical practitioner such as we are now dealing with, who is a bad colleague, members of the union may be liberated by a vote of the general assembly from all the consideration and from all obligations which we observe towards those who place professional dignity before commercial competition.

Such are some of the rules and the principles which govern the medical unions of France. As a result the medical practitioners have secured several solid advantages and the whole tone of the profession has been raised. The tendency to introduce in medical practice the methods of competition which prevail among petty tradesmen has been kept at bay, and the principle that science has a higher purpose than mere money-making has on several occasions been successfully vindicated.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Night Shifts in Mills.

As may be known beyond the limits of the district, there has been of late a "boom" in certain branches of manufacture. With the view of metaphorically making hay while the sun shines some of the mills have been running through the night as well as through the day. How far it is for the health and well-being of those engaged in this night work is a matter that need not be considered at present but as a general rule it is not advisable to try to reverse the order of nature, and it should only be attempted when necessity urges. Whether the necessity for making money during the whole 24 hours is sufficiently urgent to justify the attempt is a matter that must be left to those interested to decide but there is another point of view brought forward by a contributor to one of the local papers that is worthy of attention. The writer asks if the pollution of the air by the smoke from the mills is to be allowed to go on during the night as well as the day. He thinks the physique of the working classes in our large towns is already low enough and should not be further lowered because some manufacturers are not content with running their mills by day. There will be no anxiety to keep down the production of black smoke when daylight is gone, but every incentive to careless and wasteful stoking. Night inspectors will have to be appointed and the expense will be borne by oppressed ratepayers who want neither smoke nor inspectors. It is rather hard that the 12 hours usually free from manufacturing smoke should be polluted like the rest of the 24, so that no chance is given for the unfortunate residents to breathe moderately pure air even at night.

Bread-making.

All are interested in bread and, as under modern conditions it is impossible that any but a small fraction of that used by the public can be "home-made," it is satisfactory to know that efforts are being made by bakers themselves to improve the art of bread-making. The Manchester, Salford, and District Master Bakers' Association is holding its fourth biennial northern counties exhibition in St. James's Hall in Manchester. In his opening address the chairman, Mr. Hicks, referred to the classes at the School of Technology for the teaching of scientific baking and confectionery and urged that the bakers should take more interest in the work of those classes. He said that within the last dozen years the whole process of bread-making had been revolutionised and thousands of pounds spent in remodelling bakeries and in providing technical instruction. He boldly claimed that the bread supplied to the public at the present day was absolutely pure. This is, no doubt, true with regard to the best firms, but, as one of the speakers at the opening said, it is only within the last few years that bread-making has been put on a really

scientific basis. All this is encouraging and consolatory, but very many years have not passed since the Manchester and Salford Sanitary Association made a report on the Manchester bakeries that was not only alarming but sickening. The underground bakeries, in which half-clothed, consumptive men sweated and coughed and spat through the long hours of night work in filthy, stuffy, ill-ventilated work-places, are now practically done away—for which all concerned cannot be too thankful—but as there are degrees of excellence as to appliances and as to the sanitary conditions under which the work of the bakery is carried on, so there may be a falling back in some cases, and in no occupation is thorough inspection more necessary than in the business of the bakery. Many of the most important firms from different parts of the country exhibit various kinds of flour, so that taste and fancy may be both stimulated and satisfied. It should be mentioned again that the equipment at the Manchester Municipal School of Technology for the teaching of bread-making and confectionery is very fine and complete. The classes are well attended by the students in bread-making, of whom at present there are 78, and at the same time there are 35 who are studying confectionery. The work done is said to be most excellent.

Clerks and Ill-health.

In a lecture at the Manchester Health Society meeting held recently Dr. A. C. Magian drew rather a sombre picture of the health of that large section of the Manchester population, the warehousemen and clerks. He says that nervous disease is greatly on the increase from the constant strain of figure work and the uncertainty as to improving their position or even maintaining it. Foul air and gas fumes are common factors in causing the debility of the desk-workers. Then they get into the habit of sucking ink, sucking and biting pencils, and licking stamps and envelopes, all more or less injurious. Food poisoning is becoming quite common; meals are neglected and irregular, consisting generally of "rubbish and a cigarette." Dr. Magian thinks it would be a good thing if the morning trams to the city were abolished, for some young fellows will not walk or take any healthy exercise. Of course, there are exceptions, but still the picture is widely applicable and is too true. What a boon some physical training and camp drill would be to these pallid, weakly, young men.

April 23rd.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Medical Inspection of School Children.

THE Pontypridd Education Committee was one of the first to realise the importance of obtaining the services of a medical officer, and very soon after the schools in the town came under control the committee appointed the medical officer of health of the town (Mr. Howard Davies) medical officer to the committee. Since his appointment Mr. Davies has carried out systematic inspections and has made valuable reports upon the eyesight of the school children. At the last meeting of the committee it was decided that he should be instructed to visit every department at least once a quarter and to report upon the sanitary condition of the schools and upon the general health of the children.

Bristol Workhouse Infirmary.

The provision of adequate infirmary accommodation in connexion with the two Bristol workhouses has been under consideration of the board of guardians for nearly ten years. Everyone seems to agree that the wooden huts which are in use at the Eastville Workhouse should be replaced by more permanent and less inflammable buildings, but differences of opinion are at once manifested when definite schemes are propounded. Plans for an entirely new building and proposals for a re-arrangement and extension of existing buildings have from time to time been considered by the board, but for various reasons they have all been rejected. The Local Government Board has now called the attention of the board of guardians to the very unsatisfactory position presented by the inactivity of the latter body. It is probable, therefore, that steps will be taken to put an end to conditions that are not very creditable in a town of the importance of Bristol. The guardians have decided to

appoint a consulting medical officer for the two infirmaries, there being at present a resident medical officer in each infirmary.

The Teaching of Horticulture in Rural Districts.

The Monmouthshire Education Committee has decided that horticulture shall be taught in the public elementary schools in the rural districts of the county. The question of adopting the same course is under consideration by a special committee of the Somerset Education Committee.

Formaldehyde in Milk.

Additional inspectors have recently been employed by the Cardiff health committee in connexion with the milk trade, and the appearance of delinquent milk vendors before the local justices would seem to justify these appointments. In one instance in which formaldehyde was found in considerable quantities in the milk supplied to the infirmary the stipendiary magistrate imposed the maximum penalty of £50 and allowed 10 guineas costs to the corporation.

The Freedom of Falmouth for Sir Joseph Fayrer.

Sir Joseph Fayrer has informed the Falmouth town council that it will afford him great pleasure to accept the offer of the council to present the freedom of the borough to him. The date fixed for the ceremony is August 3rd, when Falmouth will also entertain several members of the British Medical Association.

Winsley Sanatorium.

At a recent meeting of the house committee of the Winsley Sanatorium it was stated that by the new rules certain beds could be allocated to persons residing within the counties of Somerset, Gloucester, and Wilts, on payment of 35s. per week, and persons not living within the three counties could be admitted for £2 10s. weekly, provided there were vacant beds not required by residents of the three counties.

April 22nd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Scottish Vital Statistics.

In the report of Dr. James Crauford Dunlop to the Registrar-General for Scotland, which is issued as a Parliamentary Blue-book, it is stated that the population of Scotland at the middle of the year 1906 is estimated to be 4,725,070, of whom 2,305,850 are males and 2,420,220 are females. This estimate is 49,467 more than the estimated population at the middle of the previous year. The total number of births registered in Scotland during 1906 was 131,920. The birth-rate for the year is 27·91 per 1000 and is the lowest rate recorded for Scotland. This is the first year in which the birth-rate has fallen below 28 per 1000. Previously to 1893 the birth-rate of Scotland was always over 30 per 1000. This fall of the national birth-rate, the report states, appears to be largely due to a fall in the birth-rate in the principal town districts, for in them the birth-rate of the year was 28·2, which is 0·7 lower than that of the previous year. Illegitimate births registered during the year numbered 8895 and amounted to 6·74 per cent. of the total births. The number of deaths registered in Scotland during the year 1906 was 75,535, a number which is 1059 more than in the previous year but 2031 fewer than the average number registered annually during the ten previous years. The death-rate for the year per 1000 of the estimated population is 15·99, which is, with the exception of the death-rate of 1905, the lowest recorded for Scotland. A section of the report deals with weather and its influence on mortality. It is stated that the only epidemic observed during the year which may be attributed to weather influences was in September, when diarrhoea was very prevalent, that epidemic being coincident with a spell of hot, dry weather.

The Dangers of Granting Lunacy Certificates.

A dastardly outrage was committed last week upon Mr. John Carswell in the streets of Glasgow. Mr. Carswell was standing on the pavement waiting for a car, when a man approached from behind and attacked him with a revolver. The attack was apparently the sequel to a medico-legal case

in November, 1905, in the Court of Session, which aroused widespread interest among the medical profession. The pursuer in the case, William Parves, had been detained in an asylum four months on certificates granted by Mr. Carswell and Dr. Marion Gilchrist. On being liberated he raised action for £10,000 in name of damages from each of the two medical practitioners for alleged unprofessional conduct in certifying him of unsound mind. The judge, Lord Pearson, after a long proof, had no hesitation in finding for the defenders, holding that the certificates were not granted by them wrongfully or without due inquiry, and that the pursuer at the time the certificates were granted was insane and suffering from an attack of subacute mania with homicidal tendency. The defendants, although they won their case, found at the end of the trial that in addition to the vexation and worry entailed they were each out of pocket £600 in the shape of expenses, part of which sum was afterwards refunded to them by the members of the profession in Glasgow and the West of Scotland who subscribed for the purpose. It was by this same man Parves that Mr. Carswell was attacked last week. The wounds inflicted were three in number, but fortunately did not affect a vital part, although an operation had subsequently to be done to remove the bullets. All the incidents of this case seem to emphasise very clearly the unfortunate position in which in the present state of the law a medical man may be placed in relation to the certifying of insane persons.

Cerebro-spinal Meningitis.

From the reports which come to hand it would appear that the epidemic of cerebro-spinal meningitis which has hitherto prevailed principally in some of the larger towns is tending to spread to the smaller burghs and country districts. Deaths from the disease are reported this week from Alloa, Kirkcaldy, and Forfar. I regret to learn that one of the assistant medical officers of health of the city of Glasgow has contracted the disease, but it is satisfactory to hear that he is progressing as favourably as can be expected.

April 23rd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Typhus Fever in Oughterard.

THERE was a mild epidemic of typhus fever recently in the union of Oughterard which the rural district council stated to be due to famine. The Local Government Board reported that it was not due to insufficient food but to the insanitary state of the town. The medical officer has reported that there are now only six cases in the fever hospital, five of whom are about to be discharged. He says that he expects to have the hospital empty within a week and that the difference of opinion between the district council and the Local Government Board will probably end with the disappearance of the fever.

Adelaide Hospital, Dublin.

The annual meeting in connexion with the Adelaide Hospital took place on April 22nd, the Bishop of Ossory presiding. Captain R. Wade Thompson read the annual report of the managing committee, which showed that the entire debt of the hospital had now been paid off. Dr. Wallace Beatty read the medical report and Mr. Francis T. Heaston the surgical report. The chairman proposed the adoption of the reports, which motion was seconded by Dr. J. Little.

Cerebro-spinal Fever in Dublin.

The epidemic of cerebro-spinal fever, which was never severe or widely spread in Dublin, has now practically disappeared. At the last meeting of the managing committee of Cork-street Fever Hospital the medical superintendent reported that cerebro-spinal fever had ceased, only one patient, an infant now convalescent, being in the hospital. On April 19th three cases were reported at Portadown, one of which proved fatal, while another child was said to be in a state of collapse.

Cerebro-spinal Fever in Belfast.

At the weekly meeting of the Belfast public health committee held on April 18th it was reported that the large number of 30 cases of cerebro-spinal meningitis had been

reported during the previous week and during the week ended Saturday, April 13th, 20 deaths had been registered from the same cause. Altogether, since the commencement of the epidemic 313 cases of cerebro-spinal fever have been notified, with 200 deaths. Apart from "spotted fever" the number of cases of infectious diseases is less and the general death-rate for the week is 22.4, which is lower than during the previous week, when it was 25.0. Cerebro-spinal fever has broken out in Portadown.

Lurgan Workhouse.

Mr. Peddle, O.E., after examining and testing the drainage and sanitary arrangements of the Lurgan Fever Hospital, has reported to the guardians that he considers that the fever hospital in its present insanitary condition is unfit for habitation considering the purpose for which it was used. As a result of his examination and tests of the drainage and sanitary arrangements of the workhouse he condemns the whole establishment, and he reports his opinion that an urgent and radical change is absolutely necessary and essential to render the workhouse safe and sanitary. The matter—which is very urgent—is to be considered by a special committee of the whole board.

Holywood Water-supply.

Holywood, a small township on the east side of Belfast Lough, has a very unsatisfactory water-supply, for at a meeting of the urban council held on April 18th it was reported that the water was polluted owing to frogs and fish getting into the main from the clear-water basin.

Milk Control in Belfast.

The public health committee of Belfast has taken notice of the revelations that have been brought out at the Health Commission, for on April 22nd, for the first time in the annals of Belfast, two prosecutions took place for special offences in the milk trade. In one case a cowkeeper was prosecuted for milking a cow with a quantity of cow manure on his hands. He was fined 10s. and costs as it was a first offence, the magistrate saying that he should impress on his servants the importance of washing their hands when milking cows. In the second prosecution, a young man was found delivering milk from a cart in which there were two or three buckets of refuse (that is, stalks of vegetables, potato skins, old bones, &c., used for feeding pigs). It is a common practice in Belfast for this to occur, the prosecuting attorney stating that hundreds of milk-carts employed in the city carried refuse from the houses to which they supplied milk, and this is the very first attempt to correct a practice which the magistrate who heard the case said "must be stopped." The case was adjourned for four weeks to see if there was any repetition of the offence.

April 22nd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Lord Lister's Eightieth Birthday.

THE eightieth anniversary of Lord Lister's birthday was the occasion of many manifestations of esteem, not only from the German medical profession, but also from the general public. The leading daily newspapers published articles dealing with his life and work and describing him as one of the greatest benefactors of humanity. The medical journals, of course, made appropriate references to the event, but naturally did not enter into particulars regarding the transformation of surgery brought about by him, as this is known to every medical student. The *Münchener Medizinische Wochenschrift* provided a souvenir of the early days of antiseptic surgery by publishing a complete translation of Lord Lister's first article which appeared in THE LANCET of March 18th, 1867, with the heading, "On a New Method of Treating Compound Fracture, Abscess, &c., with Observations on the Conditions of Suppuration." Lord Lister is an honorary member of the German Surgical Association and the committee has sent him an artistically designed address which was previously read and approved at a meeting of the association held on April 4th. In this address it is said that to mark the progress which has been made in surgery since the time of Lord Lister's work it is customary to

speak of an ante-Listerian and a post-Listerian era and that the German surgeons are proud of the fact that they were among the first to recognise the importance of his great discovery.

The Russo-German Medical Society.

A Russo-German Medical Society has just been constituted in Berlin under the presidency of Professor von Leyden and Professor Hildebrandt of Berlin and Professor Bechterew of St. Petersburg. It is the aim of this new international medical society to promote cordial scientific and social relations between the Russian and German medical profession. Regular meetings at various places will be held, a library and a dispensary for indigent Russian patients will be established, and there is a prospect of a Russian hospital being founded in Berlin. It is said that some hundreds of the leading medical men of Germany and Russia have become members of the society.

The German Balneological Society.

The annual meeting of the German Balneological Society was held at Berlin from March 7th to 11th. Interesting addresses were read by Professor Hoffa on the modern treatment of diseases of the joints and by Professor Wassermann on the progress made in the diagnosis of infectious diseases. Dr. Determann of St. Blasien read a paper on the viscosity of the blood. He said that the viscosity was increased by the application of cold water, by sweating, and by passive congestion. A vegetarian diet and the application of hot water caused a decrease of the viscosity. The red corpuscles and the leucocytes were influenced in the same way as the viscosity. Dr. Baur of Naheim discussed the question whether a hypernormal blood pressure was a contra-indication against the application of carbonic acid baths. He said that in 75 per cent. of his patients the blood-pressure decreased by the Naheim treatment and that in the remaining cases which were complicated with Bright's disease he was convinced that an undesirable symptom developed. Dr. Grödel of Naheim said in the discussion that in these cases hip baths were preferable. Professor Strauss of Berlin spoke on the subject of pseudo-anæmia. He said that a paleness of the skin was often confounded with real anæmia and was therefore treated on erroneous principles. Pseudo-anæmia or ischæmia of the skin was a symptom of Bright's disease and of chronic lead poisoning and was a form of vascular spasm of nervous origin occurring in patients who suffered from diseases of the gastro-intestinal organs and especially from enteroptosis; sometimes it was a symptom of incipient tuberculosis. The proper treatment of pseudo-anæmia was a nourishing diet and hydrotherapy, avoiding the use of iron. Dr. Siebelt of Flinsberg spoke on the treatment of late symptoms of gonorrhoeal origin. Gonorrhoeal arthritis and neuritis were favourably influenced by mu baths; in cases of chronic gonorrhoeal disease of the female genital organs he had seen good results from the administration of pine-bark baths and prolonged irrigations with fluid in which the high amount of tannic acid and of resin was an efficient agent. Professor Kisch of Marlenbad read a paper on the constitutional form of lipomatosis. The condition was different from alimentary obesity and was as a rule, a symptom of pathological alteration of the blood. In treating it the usual reducing methods should therefore be avoided and improvement of the nutrition of the tissues should be aimed at. Dr. Selig of Franzensbad spoke on vibratory massage of the heart and stated that orthodiagraphy proved that a decrease of the dilated heart occurred under vibratory massage, while the healthy heart did not show any alteration. Cardiac asthma and cardiac failure were also favourably influenced. Dr. Löbel of Dornum spoke on the treatment of Bright's disease by mu baths. As these baths reduced the blood pressure and the polyuria, had a favourable influence on polyuria and the respiration they might be advantageously employed in Bright's disease. Dr. Steinsberg discussed the treatment of chlorosis by mu baths. Adopting the view that chlorosis was principally caused by an anomaly of the ovarian secretion he recommended hot mud baths because they acted especially on the ovaries and therefore not only relieved the symptoms but tended to correct the lesion on which the disease depended. Dr. Riedel of Berlin spoke on the physical treatment of headache. In hyperæmia of the brain and the meninges he recommended cold applications to the head and to the carotid arteries and Nügel's hand pressure. For headach

caused by anæmia, however, Nügeli's method failed. Massage was efficacious in the treatment of rheumatic and neurasthenic headache. Dr. Laqueur of Berlin spoke on the subject of radio-active baths. He had made experiments with baths, to which a radio-active salt called radiorial had been added. The emanation of radium had an obvious effect on the human organism as was shown by a reaction in arthritic joints and by the presence of radio-activity in the urine passed after the bath. In some cases of rheumatic and gouty arthritis an improvement was obtained. Dr. Immelmann of Berlin spoke on the treatment of chronic bronchitis and bronchial asthma by the x rays. He said that he had obtained favourable results in ten cases after a few administrations. Every administration in which the thorax had to be exposed from different sides ought to last about ten minutes; in cardiac asthma the method fails. Dr. Munter of Berlin read a paper on the physical treatment of certain complications of diabetes, with special reference to hydrotherapy, thermotherapy, mechanotherapy, and faradisation. He pointed out the indications for the use of these methods, but insisted on the necessity of employing them only as adjuncts to the dietetic treatment which was always the principal consideration in diabetes. Dr. Tobias of Berlin spoke on the physical treatment of nervous diarrhoea. In addition to an appropriate diet, hydrotherapy in the form of hip-baths, shower baths, and wet packing was recommendable, but local treatment should be avoided. Massage, gymnastics, and active sports were also contra-indicated. Among the other papers read before the congress mention may be made of those on the treatment of bronchial asthma by Dr. Goldschmidt of Reichenhall; on the refraction of the blood by Dr. Marcus of Fyrmont; and on the importance of splanchnicæ for the diagnosis of syphilis by Dr. Schuster of Aix-la-Chapelle.

April 22nd.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Italian Mineral Waters.

"A hydrological awakening" (*un risveglio idrologico*) is the appropriate description of Italy's practical recognition of her wonderfully rich but long neglected resources in mineral waters. I say "long neglected," because many of the resorts now in special favour were known to the ancient Romans and were even frequented in mediæval times, but within the last three centuries have seemed to share the general collapse that overtook well-nigh all things Italian till the national resurrection under the House of Savoy and its great Minister Cavour. Not a year passes without an addition to the rapidly multiplying list of "stazioni termali," involving not only the discovery of new mineral springs but the rehabilitation of old ones—their efficacy enhanced by all the modern appliances of scientific balneology and all the comforts of the up-to-date hotel. The British consultant, indeed the English-speaking practitioner all the world over, whose *clientèle* is recognised by economic Italy as one of her most desirable assets, is more and more likely to be asked by patients at the close of an Italian season to what thermal establishment they should resort to confirm or to supplement the "cure" they have been undergoing on the Neapolitan, Tuscan, or Ligurian Riviera or in this or that central winter city. To enable the said consultant or practitioner to answer that question promptly and effectively the Direzione Generale della Sanità has just issued a handsome volume on the "Acque Minerali d'Italia," containing full, correct, and succinctly detailed accounts of all the Italian balneary resorts now recognised by the profession. Well illustrated and rich in topographical indications the volume conveys the desired information in the Italian and French languages, and I have only to add that its editor is the veteran balneologist, Dr. Paolo Casciani, professor of medical hydrology in the Roman University, to convince the reader of its trustworthy and authoritative character. Italy has too long had the mortification of seeing the tide of invalid travel ebb away from her thermal establishments to transalpine rivals in no way superior while much more and artificially less interesting. Claims to the retention of that 11th Department puts forth the

volume above referred to—a volume, moreover, that would well pay reproduction in an English dress.

Homicide and the Abolition of Capital Punishment.

Every instance in which the British Home Office sees fit to commute the death penalty is hailed by the Italian press as an indication that the "Mother of Parliaments" from whom she has borrowed so much is in turn taking a leaf out of Italy's book and will ere long follow her example in abolishing capital punishments. Such being the case, it may be well to put in evidence the Italian record of homicides and from this to form a judgment how far she is warranted in the abolition of what other and less backward countries still find to be a deterrent to the would-be assassin. In the last statistical year there were in the Italian peninsula and islands 3108 murders and 93,368 *ferimenti* (woundings with intent)—that is, well-nigh 10 homicides per 100,000 of the inhabitants. In the year before the homicides were 3202 and the woundings with intent were 89,589, giving 1903 a precedence over 1902 of 3683 lethal crimes between homicides and woundings with intent. Germany's record in the matter of homicide is 1.88 per 100,000 of the population, England's 0.42, and Scotland's 0.37. Spain, which (according to Rossini) has the merit as regards Italy of saving the latter from the reproach of being last in the list of European civilisation, has 5.31 homicides per 100,000—about half Italy's percentage. THE LANCET has more than once gone into the etiology of Italy's "sinister priority" in *fatti di sangue* and recognised the force of her great criminal statistician, Baron Garofalo's contention that the main (not the sole) cause is the universal carrying of the knife. In fact 75 per cent. of lethal crimes are due to this weapon! Out of every 100 minors (between boyhood and adult age) charged with homicide, actual or attempted, 80 used the knife, which in all cases was, in size and form, of the kind "prohibited" by law. But, like many other things Italian, that law is "more honoured in the breach than in the observance," and in the southern provinces particularly man and boy "would sooner" (according to the Government organ the *Tribuna*) "go without bread than without the knife." Now and then the police make a raid on the public-houses and gambling haunts and impound some 40 or 50 knives as the result. But the culprits in whose possession they have been found and on whom a punishment little more than nominal (usually a fine) is inflicted contrive to replace the "prohibited" weapon next day with a view to operations offensive or defensive (generally the former). Flogging would be an effective means of suppressing the illegal carrying of the knife, but of all punishments that is the one to which Italian criminal reformers have the most rooted objection. And so, I fear, Italy will maintain her "sinister priority" in *fatti di sangue*, till education has done its humanising work—not a very promising outlook with "analfabetismo" (ignorance of the alphabet) one of the crying defects of the army and with 75 per cent. of the young married couples in Sicily and Calabria unable to sign the marriage lines!

Salt and Pellagra.

The *Rivista Pellagologica Italiana* has an important contribution from the pen of Dr. Camurri on the sparing use of salt in diet as a concurrent cause of the prevalence of pellagra in Italy. The alimentation of the peasantry is almost exclusively vegetarian (a fact that, *inter alia*, explains its low resisting power to such diseases as pneumonia), and after pointing out the rôle of chloride of sodium in digestion and assimilation and the prophylactic virtue it possesses in the system, particularly as against maladies originating in defective or perverted nutrition, he makes an appeal to the Government to remove the duty on salt and so to place an essential constituent of diet within the reach of the agrarian poor—the class most subject to pellagra.

April 20th.

THE PROTECTION OF CHILDREN.—We learn that the council of the National League for Physical Education and Improvement and the council of the National Health Society have jointly organised a meeting to be held on Thursday, May 2nd, at 5 p.m., at the Royal United Service Institution, Whitehall (by permission of the council), to advocate the protection of children by supporting the proposed legislation to keep children out of public-houses.

Obituary.

WILLIAM HENRY RANSOM, M.D., F.R.O.P. LOND., F.R.S.

Dr. William Henry Ransom, who for many years occupied a foremost position among the medical men of Nottingham, died on April 16th at his residence in Park Valley in that city. Considering his great age and the fact that he was more or less of an invalid for the last three years the sad event was not altogether unexpected.

Dr. Ransom was born in 1823 at Oromer, in Norfolk, where his father was a shipowner and had also been at sea as a captain. He received his school education at Norwich and when 16 years of age he was apprenticed for four years to a medical man practising in King's Lynn, after which he entered as a student at University College, London. Here he was very successful in his class work, gaining several gold medals both at University College and in the University of London; it is also on record that in 1845 he came out first at a competitive examination in which the late Professor Huxley was his principal opponent. He held the usual residential posts at University College Hospital and afterwards spent a year or two abroad, studying in Germany and Paris. In 1850 he graduated as M.D. in the University of London and settled in Nottingham in the same year. About this time he was busily engaged in investigating the embryology of fish and some points in vegetable pathology, especially the development of galls and tumours in plants and trees. The results of his work on embryology appeared in the publications of the Royal Society in 1854 and 1867, and he was admitted F.R.S. in 1870. In 1869 he was elected F.R.O.P. Lond. In 1854 he received the appointment of physician to the Nottingham General Hospital, a position which he retained for 36 years, only resigning in 1890, and being then elected consulting physician. He still continued to see patients, however, and did not retire from active professional work till about eight or ten years ago. In 1892 the annual meeting of the British Medical Association was held at Nottingham and Dr. Ransom, as president of the section of medicine, delivered an address which was for the most part devoted to questions of vegetable pathology—namely, to plant diseases which, in his opinion, corresponded with inflammatory processes in animal tissues. All such reactions in plants formed galls or witch-knots. The irritants might be of various kinds but those which he chiefly described were of insect origin, the common oak apple and the common nut gall being familiar examples. As late as last year he published a summary of his views in the form of a treatise entitled "The Inflammation Idea in General Pathology."

Dr. Ransom entered heartily into the volunteer movement which commenced about 1859 and served as a private in the 1st Notts Volunteer Rifle Corps (Robin Hoods) soon after its foundation. He took an active part in local politics as a strenuous worker for the Liberal party and in particular was deeply interested in all educational questions. He was an enthusiastic supporter of the Nottingham University College and for a long time was a member of the governing body. He was also a governor of Nottingham High School as a representative of the University of London. About 1870 he designed a form of gas-heated stove for the disinfection of clothing, bedding, and other articles used by patients suffering from infectious diseases. The principle was a good one and the stoves were much used for many years. In 1860 he married Miss Elizabeth Bramwell who died some years ago. They had three sons, one of whom (Dr. William Bramwell Ransom) succeeded his father as physician to the hospital in 1890.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced: Dr. Sukhchinski, formerly professor of pharmacology in the Military Medical Academy, St. Petersburg.—Dr. Ottomar Domrich, body physician to the Duke of Saxe Meiningen and formerly honorary professor of physiology in the University of Jena.—Dr. Moritz Hutzler of the Gisela Children's Hospital, Munich.—Dr. Hermann von Burckhardt, one of the most eminent surgeons in Würtemberg, in his sixtieth year, from carcinoma of the stomach. He was formerly assistant to Professor Thiersch of Leipzig, but had

been in charge of the surgical department of the Katherine Hospital in Stuttgart for more than 20 years. His contributions to medical literature on surgical topics were numerous.—Dr. Andrew Willard, formerly professor of hygiene in the University of Vermont.—Dr. Micé, formerly professor of chemistry in the Medical Faculty of the University of Bordeaux.—Dr. John H. Brinton, formerly professor of surgery in Jefferson Medical College, Philadelphia.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held in April the following candidates passed in the subjects indicated:—

Surgery—H. S. Burnell-Jones (Section I.), Cardiff, Leeds, and London Hospital; M. P. Emrys Jones (Sections I and II.), Cambridge and Manchester; C. S. Spencer (Sections I and II.), Manchester; F. A. K. Stuart (Sections I. and II.), St. Mary's Hospital; and E. B. C. Vollet (Sections I. and II.), Paris.
Medicine—H. J. W. Barlow, Middlesex Hospital and Lyons; R. J. Crew (Section I.), Guy's Hospital; G. B. Mc-sanger (Section II.), Westminster Hospital; R. J. W. McKane (Sections I. and II.), Leeds; J. P. McQueen (Section I.), King's College Hospital; S. K. Poole (Section I.), Guy's Hospital; H. Sutcliffe (Sections I. and II.), Leeds; and W. V. P. Teague, London Hospital.
Forensic Medicine—H. J. W. Barlow, Middlesex Hospital and Lyons; J. F. McQueen, King's College Hospital; E. Sutcliffe, Leeds; and J. S. Ward, Sheffield.
Midwifery—E. M. Adam, Charing Cross Hospital; H. E. Battle, Leeds; J. Cree, Belfast; M. P. Emrys-Jones Cambridge and Manchester; H. A. Fenton, St. Mary's Hospital; H. E. Middlebrooke, London Hospital; R. J. W. McKane, Leeds; B. Robertshaw, Manchester; R. Rowlands, Glasgow; and H. Stanger, Leeds.
 The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: H. A. Fenton, C. S. Spencer, F. A. K. Stuart, and W. V. P. Teague.

UNIVERSITY OF DURHAM.—At examinations for the degree of Bachelor of Medicine held in April the following candidates satisfied the examiners:—

FIRST EXAMINATION.

Elementary Anatomy and Biology, Chemistry and Physics.—*Second-class Honours:* William George Bendle, College of Medicine, Newcastle-upon-Tyne. *Pass List:* Francis Percy Evers and William Joseph Hickey, College of Medicine, Newcastle-upon-Tyne; Carl Johan Valfrid Swahnberg, Charing Cross Hospital; Harold Price Stephens, Madras Medical College; and Robert Wilkie Smith, Alfred Tulloch Thompson, and Thomas Ruddock West, College of Medicine, Newcastle-upon-Tyne.
Elementary Anatomy and Biology.—John Bain Alderson, Richard Murray Barrow, Roger Errington, David Farquharson, Sarah Louisa Green, Thomas Albert Hindmarsh, Arthur Sydney Hopgood, Tom Merchant Hopgood, Frank Hutchinson Kennedy, Richard Bridge Lilly, John Lumb, and Benjamin Bell Noble, College of Medicine, Newcastle-upon-Tyne; Thomas Alfred Peel, Royal College of Surgeons, Ireland; and Arthur Hyde Wear, College of Medicine, Newcastle-upon-Tyne.
Chemistry and Physics.—Everard Cecil Abraham, College of Medicine, Newcastle-upon-Tyne; Louis Ernest Seide Gellie, Edinburgh Medical School; Harold Llewellyn James, Guy's Hospital; Hubert Vere Leigh, University College, Cardiff; George Outburt Mura McConigle, College of Medicine, Newcastle-upon-Tyne; Oswald Sinclair Norton, Guy's Hospital; and Henri René Guillaume Vander Beken, London Hospital and College of Medicine, Newcastle-upon-Tyne.
Elementary Anatomy.—William Smith, B.Sc., College of Medicine, Newcastle-upon-Tyne.

SECOND EXAMINATION.

Anatomy, Physiology, and Materia Medica.—*First class honours:* Jabez Ethelbert Dainty, College of Medicine, Newcastle-upon-Tyne. *Second-class honours:* Charles Marks, College of Medicine, Newcastle-upon-Tyne. *Pass List:* Hubert Cyril Willoughby Allott, Wilfred Barker, and John Aklinda Caulerick, College of Medicine, Newcastle-upon-Tyne; Francis Hamley Fawkes, St. Mary's Hospital; Herbert Edward Fullerton, Cyril John Henderson, and Francis Frederick Trevor Hare, College of Medicine, Newcastle-upon-Tyne; Satyen Mozumdar, St. Bartholomew's Hospital; William Reynolds, Guy's Hospital; William Sacco, College of Medicine, Newcastle-upon-Tyne; Dorothen Mary Tudor, London School of Medicine for Women; and William Robert Eistob Unthank and Charles Leslie Wigan, College of Medicine, Newcastle-upon-Tyne.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Wilhelm Dieck and Dr. Fritz Williger have been appointed Extraordinary Professors of Odontology.—*Bonn:* Dr. Nussbaum, Extraordinary Professor of Anatomy and Custos of the Anatomical Institute, has been appointed Ordinary Professor and Director of the Institute, in succession to Dr. v. Lavalette St. George, who retires.—*Chicago (North-Western Medical School):* Dr. A. E. Halstead has been appointed Professor of Surgery.—*Erlangen:* Dr. Oskar de la Camp of Marburg has been appointed Professor of

Sanitary order issued by the Local Government Board in 1900 contemplates that young children in a workhouse shall be dieted in accordance with the directions of the medical officer and with careful regard to the requirements of each individual child. In many Poor-law establishments the milk is treated in the manner suggested by the honourable Member, but looking to the circumstances I have mentioned, and also to the division of medical opinion on the question of the best way of dealing with milk for children, I doubt the expediency of issuing a general order on the subject at the present time.

The Consumption of Tuberculous Milk.

Mr. MARKS asked the honourable Member for South Somerset, representing the President of the Board of Agriculture, whether in view of the opinions as to the danger to human life from the consumption of tuberculous milk expressed in the interim report of the Royal Commission appointed to inquire into the relations of human and animal tuberculosis, he would now reconsider the advisability of issuing a general order to compel the notification of cases of disease of the udder in cows which are kept for the purpose of selling their milk. Sir EDWARD STRACHEY furnished the following written answer: The report of the Commission is receiving our careful consideration. The matter is, however, one primarily affecting the public health, for which my right honourable friend, the President of the Local Government Board, is responsible, and with whom my noble friend proposes to confer on the subject. We quite recognise its importance.

The Patents and Designs Bill.

The Patents and Designs Bill, which is under the charge of Mr. LORD GEORGE, the President of the Board of Trade, was read a second time after a debate lasting several hours.

The Butter and Margarine Bill.

Sir EDWARD STRACHEY, in moving the second reading of the Butter and Margarine Bill, said that it was founded on the recommendations of the Select Committee which sat last year. Some of the evidence given before that committee showed that there had been a great deal of adulteration and "faking" of butter. In a case taken recently against a creamery company it was stated that the profits made by adding lardine to butter were £5650 in 15 months. Accordingly there was a real need for a Bill which stopped the adulteration of butter at its source. By the provisions of the Bill the existing law with regard to registration of manufacturers of margarine was extended to butter factories and to premises where butter substitutes were made. Powers of inspection were provided in order to prevent fraudulent trade. It was also laid down that no butter for consignment containing more than 16 per cent. of moisture should be sent out of a butter factory. There were also regulations for the sale of butter mixture and imitation butter, the description and name of which would have to be approved by the Board of Agriculture. No description or name which would lead the public to believe that the imitation was genuine butter would be sanctioned. The debate on the Bill was adjourned.

THURSDAY, APRIL 18TH.

Unvaccinated Children in Derby.

Mr. BELL asked the President of the Local Government Board whether he was aware that Dr. R. W. Johnstone, one of the Local Government Board inspectors, had instructed the vaccination officer of the Derby union to re-commence prosecutions under the Vaccination Acts; whether he was aware that there were between 25,000 and 30,000 children unvaccinated in Derby; and whether the parents of all those would also be prosecuted; and, if so, would those of the longest standing be proceeded against first and continued on in that order; and whether Dr. Johnstone's action had the sanction of the Local Government Board.—Mr. BAKER replied: A new vaccination officer has recently been appointed at Derby and Dr. Johnstone acted properly in advising him as to his duties, one of which is to take all reasonable steps to put the Vaccination Acts in force. I am aware that there are in Derby a large number of unvaccinated children. It is not contemplated that proceedings will have to be taken in all these cases. I understand that Dr. Johnstone told the vaccination officer that he should use all possible means of persuasion to induce parents to comply with the law, and if this failed he should institute proceedings in a limited number of cases with a view to securing its observance. The selection of the cases would rest with the vaccination officer.

Small-pox Epidemic at Metz.

Mr. LEITCH asked the Secretary of State for Foreign Affairs whether he could give any information about an alleged epidemic of small-pox at Metz which began last July, had assumed alarming proportions, had seriously affected trade and industry, and had caused the usual festive festivities to be abandoned; could he say if the population of Metz was protected by vaccination and revaccination with the same thoroughness as the rest of the German Empire; and if he had not this information, would he send a Special Commission to inquire and report.—Sir EDWARD GREY answered: I have no information other than that supplied to me by the honourable Member. His Majesty's Ambassador at Berlin would no doubt ask the German authorities to facilitate any inquiry which competent British authorities may desire to make independently in the interests of medical science, but I have not been advised that the occasion is one which requires the appointment of a Special Commission by His Majesty's Government.

The Conscientious Objector.

Dr. BURNHARDT asked the Secretary of State for the Home Department whether his attention had been called to the fact that a Glasgow applicant applied twice to the magistrates at the Brentford Magistrates' Court, on March 2nd and 15th, for an exemption under the Conscientious Objectors Act, 1895, and was refused; and what steps he proposed taking to give the conscientious objector a fair hearing.—Mr. GLADSTONE replied: I have received two letters calling my attention to the case. The amendment of the law is under consideration by my right honourable friend the President of the Local Government Board.

Care of Midwives.

Mr. PARKER, on behalf of Mr. JOWETT, asked the Secretary of State

for the Home Department whether, in view of the fact that during the six months ending March 20th last there were 54 cases of anthrax reported to his office, 14 of which were fatal, and that in eight of the 54 cases his officers had failed to ascertain the kind of material upon which the person attacked had been engaged, he could see his way to make such arrangements as would in future enable him to inform himself as to the materials which had carried the infection.—Mr. GLADSTONE answered: I understand that the honourable Member refers to some statistics of anthrax with which I recently furnished him. In the eight cases in which a return was made of "material not ascertained," the reference intended was to the material by which the infection was actually conveyed and not to the material on which the worker was engaged. It is sometimes impossible—especially in the case of miscellaneous occupations such as that of dock labourer, carter, or the like, in which six out of the eight cases occurred—to trace the source of the infection. A mere entry of the material on which the worker had been engaged would not serve any useful purpose and might be actually misleading. Every effort, of course, is made by the medical inspector of factories to trace the source of infection in each case, but it is difficult to see what further arrangements, especially in the case of miscellaneous employments such as those mentioned, can be made to insure a knowledge of the particular material which has carried the infection. I should add that the figures quoted by the honourable Member refer to a period of nearly nine months and not six, as stated in the question.

Mr. PARKER, on behalf of Mr. JOWETT, further asked the Home Secretary whether, in regard to all future cases of anthrax which occurred at seed-crushing, oil-extracting, and bag-making works, he would endeavour to ascertain the kind of material from which the bags used in seed-crushing and oil-extraction operations had been made and, in the case of bag-making works, what materials were being used.—Mr. GLADSTONE said in reply: Yes, Sir, this will be done.

The New Hospital at Tidworth Barracks.

Answering Captain FABER, Mr. HADDAN stated that it was not possible to give a definite date at which the building of the new hospital at Tidworth barracks would commence, but the work in preparation for the new hospital was so far advanced as to render it possible in a short period to arrange a contract.

The Sanitation of Dumbarton.

Mr. ROBERT DUNCAN asked the Secretary for Scotland whether the Local Government Board in effect ordered the conversion of the domestic sanitary system of the burgh of Dumbarton, as stated by the Provost before a Parliamentary Committee on May 8th, 1906; whether he was aware that the conversion referred to had resulted in the domestic sewage of over 20,000 inhabitants being discharged into the tidal pools of the River Leven without purification of any kind; and whether, in view of the condition of the river, he would insist upon such proceedings being taken as would render the conversion of the sewage system harmless to the natural purity of the river.—Mr. SIMONDS stated, in reply: In 1903 the Local Government Board pressed the local authority to take steps to remove certain nuisances. I understand that the local authority has also in hand the extension of all outlets into the river so as to prevent the deposit of sewage on the shores above low-water mark. When these have been completed it is believed that a great improvement will be effected in the condition of the river bed.

Sanitary Accommodation for the Royal Irish Constabulary.

Mr. SLOAN asked the Chief Secretary to the Lord Lieutenant of Ireland to what extent separate sanitary accommodation was provided for the wives and children of members of the Royal Irish Constabulary living in barracks; whether there was any exception to the rule that one convenience only was provided for men, women, and children, as well as prisoners of both sexes; what means had the constabulary authorities of ascertaining that the sanitary accommodation of Royal Irish Constabulary barracks was wholesome; and whether the surgeon to the force exercised any supervision in this respect.—Mr. BIRRELL replied (in a written answer): Separate sanitary accommodation for women and children is almost invariably provided at the larger stations, but it is not possible to provide such accommodation at many of the small rural stations where the premises are small. The latter stations are usually occupied by one married constable only and in such cases the necessity for separate sanitary accommodation is not so marked. Constabulary stations are periodically inspected by county and district inspectors, as well as by officers from headquarters, so that ample opportunity is afforded for bringing to notice any defects in the sanitary arrangements. The local medical attendants advise on all matters affecting the health of the men and their families and the sanitary condition of the barracks. The surgeon of the force, who is attached to the depot, exercises no supervision in this respect.

The Training of Midwives.

Mr. ASHTON asked the President of the Local Government Board whether he was aware that there were only 19 counties in England and Wales in which there were institutions approved by the Central Midwives Board for the training of midwives; and that there were only 52 approved institutions in England and Wales, of which 35 were voluntary and only 17 poor-law institutions, of which again six were in London and only 11 in the rest of the country; whether he would say whether in the voluntary institutions the probationers had to pay fees; and whether in the poor-law institutions they paid none; and if he could state in what way the fees payable in the voluntary institutions were generally disposed of.—Mr. BURNHARDT gave the following written answer: I understand that the figures in the question are substantially correct, the precise figures being as follows:—Counties in England and Wales in which there are institutions approved by the Central Midwives Board for the training of midwives, 19; approved institutions in England and Wales (of which there are 35 voluntary, i.e., non-Poor-law provisions), 51. The Paddington, Farnham, and Epsom infirmaries have not been approved. I have no information as to the payment and application of fees in voluntary institutions. In Poor-law institutions there are usually no fees.

FRIDAY, APRIL 19TH.

An Outbreak of Typhus Fever in Ireland.

Mr. O'MALLEY asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the resolution of the Oughterard rural district council, passed on April 11th, in which it was stated that the outbreak of typhus fever in the district was due to famine conditions rather than to the insanitary condition of the houses where the outbreak originated, as reported by the Local Government Board medical inspector; and whether he would institute adequate relief works to cope with the distress that prevailed in the Oughterard union.—Mr. BIRRELL replied (by written answer): According to the resolution referred to the district council appears to consider that the fever is not due to the insanitary conditions described by the Local Government Board's inspector, inasmuch as the same conditions have always prevailed at Oughterard. The Board, however, is satisfied that the contention of the council has no support. The state of things found by the inspector constitutes a perpetual menace to public health and if district councils were to be absolved from all responsibility in cases in which insanitary conditions have existed for a long time there would be an end of sanitary reform in Ireland. The Local Government Board is entirely satisfied that there is no foundation for the suggestion that famine prevails in this union and has caused the outbreak of fever. The guardians are bound by law to keep their relieving officers in funds for the relief of all urgent cases. They are well aware of their statutory obligations and powers and the Board cannot consider that they would be so oblivious of their duty to the destitute poor as to allow them to suffer from want of food to an extent which would cause famine fever. The Local Government Board has afforded through the spring months, and is still affording, employment to many hundreds of families in the poorest parts of this union where distress was apprehended and the rates have thereby been relieved of a considerable burden. The Board is satisfied that the resources of the union will be ample to enable the guardians to provide any further relief that may be necessary.

MONDAY, APRIL 22ND.

Dangerous Lunatics in Scotland.

Major ANSTRUTHER-GRAY asked the Lord Advocate whether a dangerous patient in a district asylum might be discharged and handed over to relatives relieved, but not cured; and, in that case, whether the lunacy authorities had no further charge or responsibility.—Mr. SHAW replied: A patient who, when admitted, was dangerous may, on the sheriff being satisfied and on medical certificates, be discharged when this can be done without risk or injury to the public or the patient. As to the latter part of the question, it does not appear to me that there is any such charge or responsibility if the procedure is correctly followed.

Criminal Lunatics in Scotland.

Major ANSTRUTHER-GRAY asked the Lord Advocate whether he would consider the advisability of taking the necessary steps to insure that all cases of dangerous lunatics who had committed assault resulting in loss of life should be dealt with in a criminal lunatic asylum instead of relegating them to a district asylum. The honourable and gallant Member further asked the Lord Advocate whether, seeing that the presence of criminal lunatics who had committed murder was detrimental to the general freedom from severe discipline in district asylums, the beneficial effect of what was termed the open-door system being acknowledged, he would take the necessary steps to keep the district asylums free from criminal lunatics who had committed murder or attempted murder as far as possible.—Mr. SHAW answered: The sending of these cases to a district asylum is no doubt warranted if the procedure under the 15th Section of the Lunacy Act of 1857 is adopted. I may say, however, that the other course, which is also correct in law, appears to me to be more advisable in practice—viz., that when crime has been committed by a lunatic the criminal authorities should deal with it in accordance with their regular powers under Sections 87 and 88 of the Lunacy (Scotland) Act, 1857. There may, no doubt, be exceptional cases, but my desire is that the practice which I think to be preferable should be adopted.

Plague in India.

In answer to Dr. RUTHERFORD, Mr. MORLEY stated (in a written answer) that the recorded deaths from plague in India, including native states, from September, 1896, to end of March, 1907, were approximately 5,012,000. The monthly returns which he received from India showed 58,438 deaths in January, 93,397 deaths in February, and 171,522 deaths in March of the present year. The provinces most affected were the United Provinces, the Punjab, Bengal, and Bombay. He promised to ask the Government of India for a return bearing upon the number of medical men on special plague duty in that country.

The Sanitary Service in India.

Dr. RUTHERFORD asked the Secretary of State for India whether the recommendations to the Indian Government by Professor Simpson, late medical officer of health of Calcutta, to introduce a special sanitary service composed of Indian medical men and women supervised by European experts, and repeated in his work on plague, had been carried out to stay and prevent the ravages of plague.—Mr. MORLEY replied (in a written answer): I would refer my honourable friend to the published resolution of the Government of India, dated Sept. 8th, 1904, creating the office of sanitary commissioner, in which is described the action taken by them on various schemes for the constitution of a separate sanitary service and the difficulties, financial and administrative, in the way of an effective and speedy reorganisation. Much has been done to strengthen and improve the existing sanitary agency at the disposal of local governments, especially in districts where plague is liable to occur. The subject is still engaging the anxious consideration of the Government.

TUESDAY, APRIL 23RD.

Medical Examinations for Lead Poisoning.

Mr. WINGWOOD asked the Secretary of State for the Home Department whether his attention had been called to a paper read before the English Ceramic Society by Dr. Shuttlebotham, an acknowledged

authority in lead poisoning, in which he urged that certifying surgeons should be provided with a private room in each factory for the periodical examination of work-people, to avoid the present superficial examination in semi-public offices, and whether the Home Office would inquire into the conditions under which these examinations were carried on with a view to possible improvements.—Mr. GLADSTONE replied: I have not myself seen the paper referred to, but in the covering letter issued with the earthenware special rules of 1901 manufacturers were informed that arrangements should be made to allow due privacy for the medical examination required under the rule.

Notification of Births.

Lord ROBERT GEOL, under the ten-minutes rule, asked leave to introduce a Bill to provide for the early notification of births. He said that infantile mortality existed to a great extent in this country, and every year there occurred 120,000 deaths of infants under the age of one year, and of these probably it was not extravagant to say that 60,000 might be saved if proper precautions were taken. This state of affairs entitled the Bill to the earnest consideration of the House. It meant that out of every 1000 children born, 145 died before they reached the age of one year. The number of deaths in particular localities went as high as 250 or 300 or even 400 out of every 1000. He had said that half of these might be saved. That was not a matter of speculation because in some colonies the death-rate was not higher than 70, and even in some of our own counties it was not higher than 84. The seriousness of this state of things was not lessened by the fact that, although the death-rate in other cases had been diminished by the sanitary measures taken in this country, the infant death-rate had not declined to any extent. It remained practically stationary. The main cause of this state of affairs might be summed up in two sentences. It was due mainly (1) to the neglect of the mother of her own health before the birth of the child, and (2) to the neglect of the health of the child immediately after it was born. More than any one cause ignorance was at the bottom of the deaths of these unhappy children. Something might eventually be done by the improvement of elementary education, but he did not think it was necessary to wait for such a process. He thought something might be done by skilled advice, skilled assistance given to the mother during her early days of motherhood. He was glad to know that there existed a number of societies which have charged themselves with the duty of giving this advice and assistance. In Huddersfield some very remarkable results were obtained through the great influence of Alderman Broadbent. One difficulty was often met by those who were working in this field. It was too often the case that no notification of the existence of a child was given before it was dead. Under the present registration law six weeks were allowed for registration to take place. One-third of the children who died in the first year died within six weeks of their birth. It was therefore quite futile to have a system of registration which did not come into operation until six weeks had elapsed. It was solely with the object of remedying that defect that he had been asked to introduce the present Bill. It was modelled upon the provision which already existed at Huddersfield. It provided that there should be within 48 hours of the birth of every child a notification of its birth sent to the medical officer of health. That notification could be given in the simplest way without any formalities. It might be given by a post-card. The duty was thrown upon him, upon anyone who has been on attendance on the mother. Another provision provided that notification should be made in the cases of stillborn children. He would not trouble the House with reasons for that at the present time. It was a matter of very great importance. That was the whole Bill and he asked the House to consider very carefully the seriousness of the evil. He knew that there were some cheerful optimists who flattered themselves that a check on population was not an undesirable thing. He was utterly unable to agree with that view. Apart from what seemed to him its essential brutality it was now agreed to be utterly unsound in political economy. There were others who thought that this loss of infant life operated as a store, who thought that this loss of infant life survived. He believed by means of which only the fittest survived. He believed that to be equally untrue. Not only was it untrue but it was emphatically true that many of those who survived this ordeal went into life maimed and weakened and unfit to bear its struggles. This was absolutely a non-party matter. He ventured to hope that it would also be a non-contentious measure. This proposal of his had received very general support, not only from experts in sanitary matters, but also from the Association of Municipal Corporations. It came to the House with a great body of authority behind it, it was supported by Members in all parts of the House, and he hoped they should have the sympathetic support of the Government, and that the measure might be passed into law before the close of the present Session.

Sir HENRY CAMPBELL-BANNERMAN—Hear, hear.
Leave having been given the Bill was introduced and read a first time.

WEDNESDAY, APRIL 24TH.

Street Accidents in London.

Mr. COOPER asked the Secretary of State for the Home Department whether the Departmental Committee appointed last year to consider and report upon the question of the provision of ambulances for street accidents in London had finished its inquiry; and when its report would be published.—Mr. GLADSTONE answered: I am not in a position at present to say when the inquiry will be completed and the report issued.

BOOKS, ETC., RECEIVED.

APPLETON, SIDNEY, 25, Bedford-street, Covent Garden, London, W.O.
Diseases of the Lungs. Designed to be a Practical Presentation of the Subject for the Use of Students and Practitioners of Medicine. By Robert H. Batcock, A.M., M.D., Author of "Diseases of the Heart and Arterial System." D. Appleton and Co.; until recently Professor of Clinical Medicine and Diseases

- of the Chest, College of Physicians and Surgeons (Medical Department of the Illinois State University), Chicago; Consulting Physician to Cook County Hospital; Consulting Physician to Mary Thompson Hospital, Hospital of St. Anthony de Padua, and of Marion-Sims Sanitarium. First edition. Price 2s. net.
- ANTON EDWARD, 41 and 43, Maddox-street, Bond-street, London, W.
A Handbook of Skin Diseases and their Treatment. By Arthur Whitfield, M.D. Lond., F.R.C.P., Professor of Dermatology at King's College; Physician to the Skin Departments, King's College and the Great Northern Central Hospitals. Price 3s. 6d. net.
- BARKER, TRENELL, AND COX, 8, Henrietta-street, Covent Garden, London, W.C.
Elevation of the Cornea. By Angus Macnab, B.A., B.Sc., M.B., Ch.B., F.R.C.S., Chief Clinical Assistant, Royal London Ophthalmic Hospital. Price 3s. net.
The Diagnosis and Modern Treatment of Pulmonary Consumption. With Special Reference to the Early Recognition and the Permanent Arrest of the Disease. By Arthur Latham, M.A., M.D. Oxon., M.A. Cantab., F.R.C.P. Lond., Author of the Prize Essay on the Erection of the King Edward VII. Sanatorium, Physician and Lecturer on Medicine at St. George's Hospital, Senior Assistant Physician at the Brompton Hospital for Consumption and Diseases of the Chest. Third edition. Price 5s. net.
- BEECHER AND SONS, LIMITED, 4, Snow-hill, London, E.C.; and Derby.
A Handbook to the Workmen's Compensation Act, 1896. By George Frederick Emery, LL.M., of the Inner Temple and South-East Circuit, Esquire, Barrister-at-Law, Official to the Archdeaconry of Ely, Formerly Abbott Scholar and First Winchester Prize-man in the University of Cambridge, and Scholar of Trinity College. Price 1s. net.
- BODDREID, ELIOT, Leighton House, Fleet-street, London, E.C.
Low's Handbook to the Charities of London, 1907. (Seventy-second Year of Publication). Price 1s.
- BRUNNEN, Wien und Leipzig.
Die Zentrarielen des Operateur-Institutes der Wiener Med. Fakultät. Mit den Bildnissen von Vincenz v. Kern und Lord Josef Lister und der Reproduktion eines Operateur-Diploms aus dem Jahre 1819. Price K. 2, or M. 1.60.
- DELL AND COMPANY, LIMITED, London, Paris, New York, and Melbourne.
Diseases of Women: A Clinical Guide to their Diagnosis and Treatment. By George Ernest Herman, M.B. Lond., F.R.C.P., Consulting Obstetric Physician to the London Hospital, Consulting Physician-Accoucheur to the Tower Hamlets Dispensary, late President of the Obstetrical Society of London and of the Hunterian Society. Price 2s.
Worry: The Disease of the Age. By C. W. Saleeby, M.D., F.R.S. Edin., Author of "Evolution the Master Key," &c. Price not stated.
- HUTCHILL, J. AND A., 7, Great Marlborough-street, London, W.
Cancer of the Rectum: its Surgical Treatment. With an Appendix of 350 Cases. Jacksonian Prize Essay. Fifth Edition. By Harrison Cripps, F.R.C.S., Senior Surgeon to St. Bartholomew's Hospital, Member of the Council, Royal College of Surgeons; Vice-president of the Royal Medical and Chirurgical Society. Price 5s. net.
On Diseases of the Rectum and Anus, including the Fifth Edition of the Jacksonian Prize Essay on Cancer. By Harrison Cripps, F.R.C.S., Senior Surgeon, St. Bartholomew's Hospital. Third edition. Price 10s. 6d. net.
A Course of Lectures on Medicine to Nurses. By Herbert E. Cogd, M.D., F.R.C.S., late Medical Superintendent, North-Eastern Fever Hospital, Tottenham, London. Fifth edition. Price 3s. 6d. net.
Nursing, General, Medical, and Surgical. With Appendix on Sick-room Cookery and Dictionary of Medical Terms. By Wilfred J. Hadley, M.D., F.R.C.P., F.R.C.S., &c., &c., Physician, Pathologist, and Lecturer on Medicine to the London Hospital. Price 3s. 6d. net.
- JEY, J. M., AND CO., 28 and 30, Bedford-street, London, W.C.
Sick Nursing. By H. Drinkwater, M.D., Author of "First Aid to the Injured," "Food in Health and Disease," &c. (The Temple Primers). Price 1s. net.
- JORDAN, WILLIAM J., Philadelphia.
Transactions of the American Gynecological Society. Volume 31. For the Year 1905. Price not stated.
- KER, FERDINAND, Stuttgart.
Die Behandlung der Tuberkulösen Wirbelstufentründung. Von Dr. F. Calot, Chirurg am Hospital Rothschild, am Hospital Casin-Perrin-Baud, am Hospital de l'Oise et des Dégarnements, des orthopédiques Instituts in Bern u.s.w. Übersetzt von Dr. P. Kwald, I. Assistent an der chirurgisch-orthopädischen Klinik von Prof. Dr. Volz in Heidelberg. Mit einem Vorwort von Prof. Dr. Oscar Volz. Price not stated.
Die Behandlung der angeborenen Hüftgelenkverrenkung. Von Dr. F. Calot, Übersetzt von Dr. P. Kwald. Mit einem Vorwort von Prof. Dr. Oscar Volz. Price not stated.
- EVERITT AND CO., 42, Essex-street, Strand, London, W.C.
Charts of the Diseases of the Horse. With Explanatory Notes and Prescriptions. By Charles Grassell, M.B. C.V.S., Member of the American Veterinary Medical Association, Consulting Veterinarian to the National Live Stock Association of America. Revised by George Grassell, M.A., L.R.C.P. & S.E., L.L.B. G. Price 7s. 6d. net.
- HIESCHWALD, AUGUST, Unter den Linden, 63, Berlin, N.W.
Die Zuckerkrankheit und ihre Behandlung. Von Professor Dr. Carl von Noorden, Vorstand der I. medizinischen Universitäts-Klinik in Wien. Vierte vermehrte und veränderte Auflage. Price M. 9.
- KARGER, S., Karlstrasse, 15, Berlin.
Jahrbuch für Kinderheilkunde und Physische Erziehung. Unter Redaktion von O. Heubner, A. Steffen, Th. Escherich. 65. der dritten Folge 15. Band. Heft 4. Ausgegeben am 1. April, 1907. Price not stated.
- KEGAN PAUL, TRENCH, TRUBNER, AND CO., LIMITED, Dryden House, Gerard-street, London, W.
The Religion of Consciousness: A Suggestion for To-day. By F. Reginald Statham, Author of "From Old to New," "The Social Growth of the Nineteenth Century," "Free-thought and True-thought," &c. Price 2s. 6d. net.
- J. B. LIPPINCOTT COMPANY, Philadelphia and London.
International Clinica. Edited by W. T. Longcope, M.D., Philadelphia, U.S.A., with Collaboration. Volume I, Seventeenth Series, 1907. Price 35s. net.
- LONGMAN, GREEN, AND CO., 39, Paternoster-row, London, E.C.
The Essentials of Chemical Physiology. For the Use of Students. By W. D. Halliburton, M.D., LL.D., F.R.S., Fellow of the Royal College of Physicians, Professor of Physiology in King's College, London. Sixth edition. Price 4s. 6d. net.
Theories of Chemistry, being Lectures delivered at the University of California, in Berkeley, by Svante Arrhenius, Director of the Nobel Institute, Stockholm. Edited by T. Slater Price, D.Sc., Ph.D., F.I.C. Price 5s. 6d. net.
- MACMILLAN AND CO., LIMITED, London.
Inflammation. An Introduction to the Study of Pathology. Being the Reprint (revised and enlarged) of an Article in Professor Allbutt's "System of Medicine." By J. George Adams, M.A., M.D., F.R.S., Sometime Fellow of Jesus College, Cambridge, Professor of Pathology, McGill University, Montreal. Price 5s. net.
- PHILIP, GEORGE, AND SON, LIMITED, 32, Fleet-street, London.
Builders of the Body, or, Lessons on Food Values. By Eustace Miles, M.A., Member of the Executive Committee of the National League for Physical Education and Improvement, 1905-1906; and Miss Mariella John, Principal of the Eustace Miles Cookery School. Price 1s. 6d.
Comparative Chart of Food Values. Graphically Illustrated in Colours. (Size, 35 by 45 inches. Mounted on cloth, rollers, and varnished.) By Eustace Miles, M.A., and Mariella John. Price, with small handbook, 3s. 6d. net.
- POINAT, A., 12, Rue Jacob, Paris.
Les Formes Postérieures de l'Appendicite. Par MM. P. Viguani, Chirurgien des Hôpitaux; P. Carallion, Procureur à la Faculté, et Chabanon, Interne des Hôpitaux, de Lyon. Price Fr. 1.
- REPMAN, LIMITED, 129, Shaftesbury-avenue, London, W.C.
Biographic Clinica. Volumes IV. and V. Essays concerning the Influence of Visual Function, Pathologic and Physiologic, upon the Health of Patients. By George M. Gould, M.D., Editor of American Medicine, Author of "An Illustrated Dictionary of Medicine," &c. Price not stated.
- SPRINGER, JULIUS, Monbijouplatz, 3, Berlin, N.
Die Nerven des Herzens, ihre Anatomie und Physiologie. Von E. von Cron. Übersetzt von H. L. Heuser. Neue vom Verfasser umgearbeitete und vervollständigte Ausgabe mit einer Vorrede für Kliniker und Aerzte. Price M. 9.
- THE JOHNS HOPKINS PRESS, Baltimore.
The Johns Hopkins Hospital Reports. Volumes XIII. and XIV. 1905. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET OFFICE, directed to the Sub-Editor, not later than 5 o'clock on the Thursday morning of each week such information for gratuitous publication.

- BIRKS, G. T., M.B., B.C. Cantab., has been appointed Honorary Assistant Physician to the Bedford County Hospital.
- BRISCOE, JAMES R., M.R.C.S., L.R.C.P. Lond., has been appointed Junior House Surgeon at the Great Northern Central Hospital.
- BROWN, A. CARRINGTON, M.R.C.S., L.R.C.P. Lond., has been appointed Senior House Surgeon at the Great Northern Central Hospital.
- DATYNS, D. S., M.D. (State Med.) Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Examiner in State Medicine for the University of London.
- DONLE, F. CARRINGTON, M.R.C.S., L.R.C.P. Lond., has been appointed Junior House Surgeon at the Great Northern Central Hospital.
- FACILDER, T. JEFFERSON, M.A., M.B., B.C. Cantab., F.R.C.S. Eng., has been appointed Honorary Assistant Surgeon to the Throat Hospital, Golden-square, W.

GUNY, R. M., M.B., B.S. Aberd., has been appointed Senior House Physician at the Great Northern Central Hospital.

HUTCHINSON, F. A. STEWART, M.D., B.O. Cantab., M.R.O.S., L.R.C.P. Lond., has been appointed Honorary Assistant Surgeon to the Sussex Eye Hospital, Brighton.

LIVINGTON, CYRIL C., M.B., B.S. Durh., has been appointed Out-patient Physician to the Bristol Royal Hospital for Sick Children and Women.

MACPHER, DUGALD H., M.B., Ch.B. Glasg., has been appointed Extra Dispensary Physician to the Glasgow Royal Infirmary.

MATHESON, R. MURDOCH, M.D. Edin., F.R.O.S., has been appointed Clinical Assistant to the Royal Victoria Hospital for Consumption, Edinburgh.

MILNERN, OSCAR, M.R.C.S., L.R.C.P. Lond., has been appointed Junior House Physician at the Great Northern Central Hospital.

MORGAN, J. A., M.R.O.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Llanwrtyd Wells District of the county of Brecknock.

PARSONS, GEORGE GOODEN, L.R.C.P. Lond., M.R.O.S., L.S.A., has been appointed Medical Officer for the Workhouse of the Westbury and Whorwellsdown (Wiltshire) Union.

SHORLAND, ERNEST TREVOR, L.R.C.P. Lond., M.R.O.S., has been re-appointed Medical Officer for the Westbury and Whorwellsdown (Wiltshire) Union.

STEVENSON, HOWARD, M.B., B.Ch. R.U.I., F.R.O.S. Irel., has been appointed Assistant to the Professor of Surgery, Queen's College, Belfast.

WALTERS, H. B., M.R.O.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Chudleigh District of the county of Devon.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ALNWICK INFIRMARY.—House Surgeon, unmarried. Salary £120 per annum, with apartments, attendance, coal, and gas.

ATKINSHIRE, CURINGHAM COMBINATION POORHOUSE.—Medical Superintendent. Salary £200 per annum, with house, fuel, light, &c.

BOSTON UNION WORKHOUSE, Fishpool, Farnworth.—Temporary Assistant Medical Officer.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board and residence. Also House Physician, unmarried. Salary £100 per annum, with board and residence.

BRIDGWATER HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

BURY INFIRMARY.—Junior House Surgeon. Salary £83, increasing to £90, with board, residence, and attendance.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.O.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

CHRYSTENHAM GENERAL HOSPITAL.—Surgeon-in-Charge of the Branch Dispensary, unmarried. Salary £90 per annum, with board and lodging. Also House Physician, unmarried. Salary £70 per annum, with board and lodging.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Physician to Out-patients.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon for six months, renewable. Salary £80 per annum, with rooms, board, washing, and attendance.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon for six months. Honorarium of £25, with board, residence, and laundry.

GLOUCESTER, GENERAL INFIRMARY AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant Surgeon on the Acting Medical Staff. Also Assistant House Surgeon, for six months. Salary at rate of £30 per annum, with board, residence, and washing.

HARTSHILL, STOKES-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL.—House Physician. Salary £100 per annum, with apartments, board, and washing.

HULL ROYAL INFIRMARY.—Honorary Surgeon. Also Casualty House Surgeon. Salary £50, with board and lodging.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Assistant House Surgeon. Salary £75 per annum, with residence, board, and washing.

IPSWICH, EAST SUFFOLK AND IPSWICH HOSPITAL.—Third House Surgeon. Salary £50.

ITALIAN HOSPITAL, Queen-square, London, W.C.—House Surgeon for six months. Salary at rate of £50 per annum, with board and residence.

JOHANNESBURG HOSPITAL.—House Physicians and House Surgeon, unmarried. Salaries at rate of £300 per annum, with board and lodging.

KENSINGTON GENERAL HOSPITAL, Earl's Court, London, S.W.—Junior Resident Medical Officer. Salary £40 per annum, with board, washing, and residence.

KENSINGTON WORKHOUSE AND INFIRMARY.—Second Assistant Resident Medical Officer. Salary £100 per annum, with apartments, board, and washing.

KINGSTON, BRISTOL, CORSHAM MEMORIAL HOSPITAL.—House Surgeon and Resident Medical Officer. Salary £100 per annum, with board, apartments, and laundry.

LEWES DISPENSARY AND INFIRMARY AND VICTORIA HOSPITAL.—Resident Medical Officer. Salary £120 per annum, with apartments, board, &c.

LIVERPOOL STANLEY HOSPITAL.—House Surgeon. Salary £60 per annum, with board, residence, and washing.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board, and residence.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon and Anaesthetist, unmarried. Salary £50, with board, lodging, and washing.

MARGARET DISPENSARY, Herne Hill Station, S.E.—House Surge Salary £30-£40.

NEW HOSPITAL FOR WOMEN, Buxton-road, N.W.—Pathologist (Female) NORTHAMPTON, BEBBY WOOD ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £150, increasing to £200, with board, lodging, washing, and attendance.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—Surgeon the Eye Department.

ROCHDALE INFIRMARY.—House Surgeon, unmarried. Salary £200 per annum, with board, residence, and laundry.

ROYAL BAR HOSPITAL, Dean-street, Soho, W.—House Surgeon six months. Salary at rate of £40 per annum.

ROYAL EYE HOSPITAL, Southwark, S.E.—House Surgeon. Salary £52 10s. per annum, with board and residence.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Casualty Surgeon for six months. Board, &c. provided.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-st West Strand, W.O.—House Surgeon. Honorarium £25 for six months.

ST. GILES, CAMBERWELL INFIRMARY, Brunswick-square, Camberwell Assistant Medical Officer. Salary £120 per annum, increasing to £130 per annum, with apartments, board, and washing.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF RECTUM, City-road, E.C.—House Surgeon. Salary £80 per annum with board, lodging, and washing.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E Assistant Resident Medical Officer, unmarried, for six months Salary at rate of £80 per annum, all found.

SANABITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W. Clinical Assistants. Fee £3 3s. per quarter.

SHEFFIELD ROYAL INFIRMARY.—Junior Assistant House Surge Salary £65 per annum, with board and residence.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL Junior House Surgeon for six months. Salary at rate of £60 per annum, with rooms, board, and washing.

SUNDERLAND, MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon. Salary a year, with board, lodging, and washing.

THROAT HOSPITAL, Golden-square, W.—House Surgeon. Salary per annum, with board, residence, and laundry.

WADSWLEY, NEAR SHEFFIELD, WEST RIDING ASYLUM.—Fifth Assistant Medical Officer. Salary £140, rising to £160, with board, &c.

WALSALL AND DISTRICT HOSPITAL.—Junior House Surgeon. Salary £50 per annum, with board, residence, and washing.

WANDSWORTH UNION INFIRMARY, St. John's Hill, near Claph Junction.—Junior Assistant Medical Officer, unmarried. Salary rate of £100 per annum, with board, lodging, and washing.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon, unmarried. Salary £60 per annum, with board, residence, and washing. Also House Surgeon, unmarried. Salary £2 per annum, with board, residence, and washing.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, PARALYSIS, AND EPILEPSY, 75, Welbeck-street, London, W. Honorary Assistant Physician.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Assistant Ophthalmic Surgeon. Also Officer-in-Charge of X-Ray Department.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Parsonstown, in King's County; at Belth, in the county of Ayr; and at Middleton, in the county of Lancaster.

Births, Marriages, and Deaths.

BIRTHS.

ANDERSON.—On April 18th, at Sanfield, Braintree, North Devon, wife of Frederick T. Anderson, M.D., of a son.

BROWN.—On April 15th, at Park-road, West Kirby, Cheshire, the wife of W. McIntyre Brown, M.B., Ch.B., of a daughter.

JEFFREY.—On April 20th, at Clapton-square, N.E., the wife of Fr Jeffrey, M.D., of a daughter.

MARRIAGES.

REYNOLDS-BLACKWELL.—On April 24th, at Arlington, Chesham, Berkshire, by the Rev. W. H. Blackwell, father of the bride, and the Rev. F. S. Slater of Newick Park, Surrey, the late Edward Reynolds, M.R.C.S. Eng., L.R.C.P. Lond., youngest son of the late Edward Reynolds of Paxton Hall, St. Neots, Huntingdonshire, Esquire, J.P., to Geraldine Maud, youngest daughter of Rev. W. H. Blackwell, Rector of Arlington.

STRATFORD-GOULD.—On April 17th, at St. Peter's Church, 7 A Park, Howard M. B. Stratford, M.R.O.S., L.R.C.P. Lond., to Katherine Lucy, elder daughter of Mr. and Mrs. Gould, of Bel Park-gardens, N.W.

DEATH.

LOWRY.—On April 18th, at Pakhol, China, in his 52th year, John H Lowry, M.B., Imperial Maritime Customs.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A PATIENT'S RASH DECISION.

OUR CORRESPONDENT has drawn our attention to a paragraph in the *Sportsman* of April 19th alluding to the condition of the jockey Birch, who fractured his spine whilst riding last year at Ascot. It appears that the unfortunate jockey, who was having a long surgical advice, decided to put himself under an unqualified person for treatment, with the natural result that his attendants withdrew from the case. Whether *post hoc* or *propter hoc* we know not, but according to the *Sportsman*, the paragraph is not only as bad as ever but is complicated by the presence of a double bed-sore; we further learn that Birch "thinks he has been rash in the decision he took and were he to come again he might act otherwise than he did." This is very probable. Our chief object in calling attention to the case is to applaud this very proper comment with which the *Sportsman* concludes its paragraph: "The medical profession, of course, as such, is much too high-minded to harbour spite or even measure. Its business is to cure where and when it can, without respect of persons. Should Birch ask anew for the profession's help would certainly, we take it, be given him when he had complied with the unalterable and, indeed, not unreasonable, requirements of clinical etiquette." If non-medical journals more frequently supplied so right-minded a view of professional principles the public might soon become educated to a truer understanding of them.

FEMALE PILLS.

To the Editors of THE LANCET.

Enclosed a sheet of lavatory paper from the ladies' lavatory at Harbour Station, South-Eastern and Chatham Railway. It is interesting to know who is responsible for its selection and if they receive for doing so. I am, Sirs, yours faithfully,
M.D.

The paper enclosed bears the following inscription:—

LADIES.

TIME TAKES ALL THINGS BUT DR. JOHN HOOPER'S

FEMALE PILLS,

which were universally known in 1743 and still stands the Premier Remedy for all Female Complaints. A Coupon is placed round each box of the genuine Dr. John Hooper's Female Pills, and Bonuses will be given to the persons sending in the greatest number of these Coupons to Messrs. May, Roberts, and Co., 9, Clerkenwell-road, London, E.C., by the 30th June, as follows, viz.:—

£5 5s. for the person sending in the largest number.

£3 3s. for the person sending in the second largest number.

£2 2s. for the person sending in the third largest number.

I do not endorse the suggestion of our correspondent that anyone has been bribed to assist in the dissemination of quack circulars, but I think that the South-Eastern and Chatham Railway might supply passengers carrying papers free from nasty advertisements.—Ed. L.

"CHRISTIAN SCIENCE" AND MEDICINE.

The issue of the *Glasgow Herald* of April 19th appears a report of a lecture on "Christian Science" at which it is reported that "Dr. F. F. Wilding, Manchester," presided. Dr. Wilding is reported to have said "that 19 years of his life had been spent in the study of medicine." His daughter who had suffered from tubercular disease and who was regarded as incurable was healed when "Christian Science" was resorted to. Dr. Wilding's name does not appear in the current Medical Register. In THE LANCET of April 21st, 1904, page 1225, we mentioned that we had received a copy of the *Christian Science Journal* which contained an experience "of one who practised medicine for 12 years and then came to Christian Science." This gentleman was named Mr. W. F. Wilding, who then signed himself M.R.C.S., L.R.C.P. On referring to an old number of the Medical Directory we see that Mr. Wilding qualified in 1830. If this be so he either took an unconscionable time to get qualified or he has been studying medicine ever since he came to "Christian Science," or else how does he make up 19 years? It would be interesting to know whence Mr. Wilding derives his title of "Doctor."

BLACKFELLOW DOCTORS.

Dr. A. W. Howitt's "Native Tribes of South-East Australia," published in 1904, a most interesting account is given of the "medicine-men" or "blackfellow doctors" of Australian tribes, now fast becoming extinct. The medicine-men would seem to be the ancestor of the prototype rather of the medical scrooge than of the scientific medical man of post-Renaissance times. His powers are chiefly of the supernatural order. "He is every where believed to have received

his dreaded power from some supernatural source, or being" or from the spirits of ancestors. This power enables him to inject diseases, as it were, into people at a distance, as well as to cure disease by striking at its secret originator, who is usually a rival medicine-man in a neighbouring tribe. He can also preserve people from disease. He works with charms, and individual medicine-men, or each group of them, possess charms peculiar to themselves. In all cases the "blackfellow doctor" "is credited with being able to see men in their incorporeal state, either temporarily as a wraith, or permanently separated from their body as a ghost, which is invisible to other eyes. He can ascend to ghost-land beyond the sky, or can transport himself, or be transported by the ghosts, from one spot of earth to another at will, much after the manner of the Buddhist Arhat. He can, it is also thought, assume animal forms or control the elements." Savages all the world over, as Dr. Howitt further points out, have similar beliefs, which linger here and there, even among the most civilised peoples. Besides being magicians, medicine-men are often headmen of tribes, councillors, rain-makers, orators, or song-makers. Dr. Howitt does not believe them to be conscious quacks. Such imposture as they practise is usually the outcome of a desire to bolster up supernatural powers in which they believe. In this they resemble "Mr. Sludge" the medium, whose swindling was a form of *esprit de corps*. Whatever they may be, medicine-men undoubtedly are the clever people, the "intellectuals" of savage society, and as such they command sympathy and respect among their fellows.

THE MARINE BIOLOGICAL ASSOCIATION OF THE WEST OF SCOTLAND.

FOR some time past there has been a good deal of difference of opinion among those who take an interest in this association as regards the policy and objects of the association, and within the last few weeks a crisis has been reached in its affairs. The main objects of the association as carried out at the marine station at Millport are understood to be threefold—viz.: (a) the investigation of the marine fauna and flora of the Clyde sea area, which implies a systematic biological survey of the area involved; (b) educational work, in the way of encouraging the visits of scientific societies, holding classes at suitable times for teachers and others, and in every possible way encouraging and assisting amateur marine biologists; and (c) the maintenance of such features as may attract the general public, and these are represented at Millport by the Robertson Museum and the aquarium. At the annual general meeting of the association the committee of management was severely criticised on the ground that it was laying too much stress on the first part of the association's work and allowing the more popular sides to fall into abeyance to such an extent that the station would gradually tend to become more and more of interest to the expert and special worker in biology, while it would inevitably become of less help to the amateur marine biologist and of little interest to the general public. As an amendment to the report of the committee on the work of the association was carried by a small majority, the committee resigned and the meeting proceeded to elect a new committee. Some time must elapse before it can be seen on what lines the new committee intends to proceed, but it is to be hoped that it will be realised by those who have control of the association that to carry on successfully the Millport Marine Station and to conserve the interests of all subscribers the research, the educational, and popular sides must, if possible, be carried on *pari passu*.

A MODIFIED BINAURAL STETHOSCOPE.

To the Editors of THE LANCET.

SIRs,—Binaural stethoscopes of the usual pattern must have struck everyone as being somewhat awkward—at least, in appearance. There being no apparent reason why the conducting air column should be divided immediately at the chest-piece I have had made a stethoscope in which the division takes place as near as practicable to the ears. The distal ends of the metal tubes curve inward instead of outward and are connected to the metal "Y" tube forming the junction by short lengths of rubber tubing. The advantages claimed for this over the usual pattern are: (1) greater convenience in use, (2) a neater appearance; and (3) increased compactness when folded and the shorter length of rubber tubing required. The alterations mentioned have been most satisfactorily carried out by the Medical Supply Association, 223, Gray's Inn-road, London, W.C.

I am, Sirs, yours faithfully,

J. INMAN LANGLEY, M.R.C.S. Eng., L.R.C.P. Lond.

April 5th, 1907.

THE ATTITUDE OF JURIES TO MEDICAL EXPERT TESTIMONY.

THIS matter has recently been discussed at length in the New York Court of Appeal in the case of *Kelly v. Wells*. The facts were as follows:—A builder's labourer fell some 20 feet and was crushed by falling building material, so that his left leg was fractured in two places, his right ankle was fractured and dislocated, and his left side was severely bruised. 25 days later he died suddenly in hospital, the cause of death being given as embolism. When the case came into court a recognised medical expert said that in the absence of a necropsy the statement as to the cause of death was a mere conjecture; other medical witnesses supported this view. The jury being thus in doubt

were directed that it was not their function in such circumstances to determine the exact and definite cause of death with the scientific precision of a physician, for the medical evidence adduced was inconclusive; upon the evidence and falling any apparent intervening cause they might find that the death probably arose from the injury. In this way the jury declined to discuss how far the expert testimony should be regarded as medical fact and how far it should be recognised as medical opinion.

ODD MEDICAL TERMS.

To the Editors of THE LANCET.

SIRS,—One frequently meets with bizarre renderings of medical terms among the illiterate, but I fancy the following must be unique and worth preserving. A woman called to consult me the other day, and on my asking her what she complained of I was astounded by this information, "the Cossacks has been very unreg'lar lately!" The gentlemen in question have always been considered irregular in their habits, but this is the first time I have heard of them having been observed so far south of the equator.

I am, Sirs, yours faithfully,

P. L. TOWNLEY, B.A., M.B., Ch.B. M.D.

Gayndah, Queensland, March 13th, 1937.

THE JONES HOMES AT SANDGATE.

THE Sandgate urban district council recently prosecuted before the Elham county bench Mr. Percy Harold Jones who with his family are the proprietors of a certain number of houses in Sandgate called the Jones Homes. These are used for the reception of convalescent tuberculous patients. The prosecution was for committing an offence under the provisions of the Public Health Act by overcrowding at Ontario House and at Cambridge House. The case took two days to hear and as a result the justices came to the unanimous opinion that a nuisance existed and was likely to recur. They therefore made an order prohibiting the recurrence of the nuisance. This order was made with regard to both the houses. It will be remembered that we dealt at length with these homes in our issue of August 22nd, 1903, when they were under the management of Mr. J. J. Jones, father of Mr. P. H. Jones.

Veritas (R.A.M.C.).—It is impossible, from the information supplied, to say whether the prostatic abscess has burst into the urethra or into the bladder; but the point may sometimes be determined as follows. If, at the commencement of micturition, some unmixed pus is passed before any urine, then it is very probable that the abscess has burst into the urethra. If, on the other hand, the abscess has burst into the bladder the pus is intimately mixed with the urine. As the patient is improving rapidly it will be safe to let him sit up a little or even to take a little exercise in his room. He should not return to his work until the urine is clear, unless the cessation of the suppuration is very much delayed. Our correspondent does not say of what the "sediment" consists. Has it been examined microscopically? It would be as well to stain for gonococci.

S. G. B.—Moneylenders' circulars are a nuisance to us all. The one which our correspondent incloses is no more likely to catch the unwary than those issued by other members of the fraternity.

Blackpool.—Will our correspondent who has sent us an unsigned letter about a communication on heroin kindly send us his name?

M.R.C.S.—We think that in the circumstances described by our correspondent B would be within his rights to attend the patient.

M.B.—Our correspondent has omitted to enclose his name and address.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

London Throat and Ear (2 P.M.), Children. Gt. Ormond (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (1st).—St. Bartholomew's (1.30 P.M.), University (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Chanc (3 P.M.), St. Thomas' (2 P.M.), London (2 P.M.), King's (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's National Orthopaedic (10 A.M.), St. Peter's (2 P.M.), St. (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), minister (2 P.M.), Metropolitan (2.30 P.M.), London Throat (Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (Royal Bar (2 P.M.), Royal Orthopaedic (3 P.M.), Under Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Oph 2.30 P.M.).

THURSDAY (2nd).—St. Bartholomew's (1.30 P.M.), St. George's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), King's College (2 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North London (2 P.M.), Gt. Northern Central (Gynaecological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M., 9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M. and 1.30 P.M.), Royal Orthopaedic (9 A.M.), Royal Ear (2 P.M.), Gt. Ormond street (2.30 P.M.), Tottenham (Gynaecological, 2 P.M.).

FRIDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Thomas (3.30 P.M.), Guy's (1.30 P.M.), Alddesea (1.30 P.M.), Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. (2 P.M.), Ophthalmic (3 P.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Northern Central (2.30 P.M.), West London (2 P.M.), Throat (9.30 A.M.), Samaritan (8.30 A.M. and 2.30 P.M.), Golden-square (9.30 A.M.), City Orthopaedic (2.30 P.M.), Sobel (2 P.M.), Central London Throat and Ear (2 P.M.), Chichester Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (4th).—Royal Free (9 A.M.), London (2 P.M.), M
(1.30 P.M.), St. Thomas's (2 P.M.), University College (P.M.)
Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10
Throat, Golden-square (9.30 A.M.), Guy's (1.30 A.M.), Child
Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and Central London Ophthalmic Hospitals operations are performed.

SOCIETIES.

WEDNESDAY (1st).—OBSTETRICAL SOCIETY OF LONDON (20, H. square, W.).—8 P.M.: Specimens will be shown by Mr. J. Sutton, Dr. Lewers, Dr. M. Thorne, and Dr. Longridge. Communication:—Dr. O. R. Porter (introduced by Dr. R. and Case of Fatal Rupture of the Bladder during Labour. Paper A. Doran: A Case of Malignant Vaginal Polypus Secondary Adrenal Tumour of the Kidney.

THURSDAY (2nd).—NORTH-EAST LONDON CLINICAL SOCIETY (7
ham Hospital, N.).—4 P.M.: Discussion on the Use of Post-
Surgical Treatment (opened by Mr. H. W. Carson).

FRIDAY (3rd).—SOCIETY FOR THE STUDY OF DISEASE IN 'ORI
(11, Chandos-street, Cavendish-square, W.).—5 P.M. Clinical E
for the Exhibition of Cases followed by Discussion. Patie
attendance at 4.30 P.M.

EPIDEMIOLOGICAL SOCIETY (11, Chandos-street, Cavendish-square, W.).—8.30 P.M.: Paper:—Dr. A. K. Chalmers: Some Recent Observations of Cerebro spinal Meningitis.

WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal Kent Dispensary)
— Presidential Address:—Mr. O. J. Heath: The Duty and Possibilities of
Restoring the Hearing when Operating for Chronic Suppurative
the Middle Ear.

LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square,
5 P.M. Exhibition of Cases and Specimens.

LECTURES, ADDRESSES, DEMONSTRATIONS, &

MONDAY (29th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON
 (Mall East).—5 P.M.: Oliver-Sharpes Lecture:—Dr. W. D.
 Burton: New Facts in Relation to the Processes of Ne-
 degeneration and Regeneration.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. 3 P.M.: Diseases of the Eye. 2.30 P.M.: Operations.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-
W.O.).—4 P.M.: Dr. G. Little: Olinique. (Skin.) 5.15
Lecture.—Mr. A. Carless: Some Fractures about the Knee
(with lantern slides).

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—Cliniques:—9.30 A.M.: Surgical Out-patient (Mr. Evans). 2.30 P.M.: Medical Out-patient (Dr. Whipham), The Nose, and Ear (Mr. Carson); X Ray (Dr. Pirie).

TUESDAY (30th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON
Mall East).—5 P.M.: Oliver-Sharpey Lecture:—Dr. W. D. F.
burton: New Facts in Relation to the Processes of Ner-
vogenesis and Regeneration.

POST-GRADUATE COLLEGE (West London Hospital, Hammer-
road, W.).—10 A.M.: Dr. Moullin: Gynecological Operations.
2 P.M.: Medical and Surgical Clinics. X Rays Dr. Hall; Diseases
of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Dr. Abraham.
Diseases of the Skin.

MEDICAL GRADUATES' COLLEGE AND POLYTECHNIC (22, Chancery-st. W.C.).—4 P.M.: Dr. A. Morrison: Clinique. (Medical.) 5.15 P. Lecture.—Dr. D. Sommerville: Medical Conditions of the Allimentary Tract.

NORTH-EAST LONDON POST GRADUATE COLLEGE (Hottenham, Essex).
 10.30 A.M.: Medical Out-patient (Dr. A. J. G. Gilles).
 2.30 P.M.: Gynaecological Out-patient (Dr. Gilles), Surgical Out-patient (Mr. Edmunds). Surgical Operations (Mr. Carson).

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (2 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynaecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopaedic (4 P.M.), Gr. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Dr. Ormond-street (3 P.M.), St. Mark's (2.20 P.M.).

FUESDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throst, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanbury, Lond.; Annual Exhibition of Cabinet Pictures, Lond.; Dr. John Hill Abram, Liverpool; Messrs. E. Archer and Co., Malvern.

B.—Dr. Sidney Barwise, Derby; Dr. Noel Bardswell, Midhurst; Bolton Union, Clerk to the; Mr. F. Burgis, Buenos Aires; Mr. Demetrius Boulger, Lond.; Dr. F. Lucas Benham, Semaphore, South Australia; Sir John Byers, Belfast; Bridge-water Hospital, Secretary of; Mr. F. A. Brockhaus, Lond.; Berry Wood Asylum, Northampton, Clerk to the; Messrs. Burgoyne, Burdidge, and Co., Lond.; Birmingham Daily Post, Manager of; Mr. W. H. Brown, Leeds.

C.—Mr. L. Melville Clarke, Lond.; Co-partnership Tenant's Housing Council, Secretary of; Mr. Norman Cunningham, Lond.; Dr. G. H. Corbett, Lond.; Messrs. J. and A. Churchill, Lond.; Coal Smoke Abatement Society, Lond.; Dr. William Collingridge, Lond.; Sir Francis Cruise, Dublin; Camberwell Guardians, Lond.; Clerk of the; Coventry and Warwickshire Hospital, Secretary of; Corsham Memorial Hospital, Bristol, Secretary of; Mr. F. W. Clarke, Chorlton-cum-Hardy.

D.—Mr. A. J. Dudson, Lond.; Dr. Boswall Dodds, Starcross; Department of Agriculture, Edmonton, Alberta; Mr. H. Dickinson, Lond.; Mr. R. W. Doyno, Lond.; Mr. F. Diemer, Cairo.

E.—Miss Elgood, Moseley.

F.—Mr. William B. Fox, Melbourne; Mr. T. R. Freeman, Monkton Combe.

G.—Dr. Alexander G. Gibson, Oxford; Gloucester General Infirmary, Secretary of; Grape Juice Co., Lond., Secretary of; Great Eastern Railway Co., Continental Traffic Manager of; Dr. J. H. Garrett, Cheltenham.

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K.—Dr. W. Kirk, Ichang, China; Dr. C. F. Knight, Edinburgh; Staff-Surgeon A. B. Kelsey, R.N., Chatham; Mr. G. Kent, Lond.

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N.—Newcastle-upon-Tyne and Northumberland Sanatorium Barrasford, President and Committee of; New Leader Motors, Nottingham; North Staffordshire Infirmary, Stoke-on-Trent, Secretary of; Mr. H. Needes, Lond.; Mr. J. O. Needes, Lond.

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T.—Mrs. B. Taylor, Glasgow; Dr. Nestor Tirard, Lond.; Dr. Edgar Trevithick, Cheltenham; T. E. B. M.;

U.—Messrs. Urban and Schwarzenberg, Vienna.

V.—Mr. G. Vogt, Kendal; Veritas.

W.—Mr. J. Sim West Riding Asy Clerk to the; District Hospital, Messrs. John W Bristol; Wigan of Health of; Mr. Lond.

Letters, each with enclosure, are acknowledged from—

A.—Dr. J. Adam, West Malling; A. B. D.; A. W. D.; A. L.; Messrs. W. Appleyard and Son, Middlesbrough.

B.—Mr. Heather Bigg, Lond.; Miss Bernard, Belvedere; The Hon. E. T. Borm, Port Stanley; Captain J. P. Barnardo, I.M.S., Bhagalpur, India; Mr. A. Banks, Lewes; Dr. J. S. Byrne, Gateforth.

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